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Publier pour les lecteurs du XXI^e siècle : Design de connaissance des livres de connaissances en contexte phygital

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THÈSE

présentée par : Jean-Louis SOUBRET
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préparée au : **Conservatoire national des arts et métiers**
Discipline : **71^e section**
Spécialité : **Sciences de l'information et de la communication**

Publishing for the 21st century readers
Knowledge design of knowledge books
in a phygital environment

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Résumé

Quand on est à un clic des réponses, n'importe où, tout le temps et sur n'importe quel objet connecté, et avec la promesse que tout peut être appris par des tutoriaux vidéo ou des Moocs (cours en ligne ouverts) ; les livres restent-ils pertinents ?

Cette recherche est centrée sur les livres de connaissance. Ces guides sont conçus avec un lecteur à l'esprit et rédigés et mis en page en fonction de la maquette. Ils occupent une position intermédiaire, associant technè et épistémé, et ont pour objet de réaliser une « graphèse » (c'est-à-dire une forme visuelle de production de connaissances). Après des décennies de n'être que digital, le Web s'est hybridé pour devenir un Internet des objets. Ceux qui annonceraient la mort du livre aujourd'hui courraient le risque de se fourvoyer dans les excès de certaines prophéties des années 1990, comme celle de l'essai de Francis Fukuyama sur *La fin de l'histoire*. Les livres (et les *e-books*) conservent toute leur place dans cet écosystème phygital complexe et gagnent à être envisagés comme des auto-organisations transmédiatiques.

Mon parcours d'apprenant-chercheur s'articule autour d'une démarche réflexive à propos de plus de vingt ans d'expérience dans l'édition, d'une décennie de mentorat en innovation et, en complément, des recherche-actions, l'analyse d'exemples inspirants de publications de connaissance. Ma recherche s'appuie sur des travaux analytiques et théoriques, principalement en Sciences de l'Information et de la Communication, en Sémiotique, en Design et en *Publishing Studies*. Le résultat de cette recherche s'inspire et illustre à la fois, et avec de nombreux allers et retours, neuf études de cas. Les deux problèmes abordés sont : comment innover dans le processus éditorial ? et, comment designer de bons livres de connaissance ? La première hypothèse est que l'édition est une activité liée à l'économie de la connaissance ainsi qu'à l'économie créative et que l'innovation éditoriale est augmentée par le *design thinking*. La proposition d'une théorie de design performative – la Théorie du design de connaissance – s'inscrit dans ce sens. La seconde hypothèse est que les lecteurs, les auteurs et les éditeurs souhaitent tous de bons livres de connaissance originaux. Par contre, leurs intérêts peuvent être divergents et ils ne sont pas nécessairement capables de concevoir un compromis désirable. Le Canevas de modèle éditorial a été conçu à la fois comme un outil d'analyse (« tous les livres racontent des histoires sur la raison et la façon dont ils ont été designés ») et comme un cadre de discussion plus explicite pour les parties prenantes.

Mots-clés

Édition, livre de connaissance, design thinking, design de connaissance, économie créative

Abstract

When answers are one click away and Atawad (anytime, anywhere, any device), and with the promises that everything can be learned by video tutorials or Moocs (Massive Open Online Courses); are books still relevant?

This research is focused on knowledge books. They are defined as a middle ground, blending technè and épistémé into “how to” books, designed with a reader in mind and written to the design, in order to achieve a “graphesis” (i.e. a visual form of knowledge production). Anybody who would mention the end of the book today would risk sounding as irrelevant as some of the most extreme 1990s prophecies, such as Francis Fukuyama’s title for his bestselling essay *The End of History and the Last Man*. After decades of having been digital only, the Web has been hybridising towards becoming an IoT (Internet of Things). In this complex phygital eco-system the (e- and/or p-) books are persistent and better thought of as part of transmedia self-organisations.

I have tried to think reflexively of my own twenty-year publishing experience and decade of innovation coaching, I have taken part in action research, I have studied inspiring examples of knowledge publications, and I have drawn on analytical and theoretical works, principally in Information and Communication Sciences, Semiotics, Design and Publishing Studies. The outcome of this research is, in turn and with many feedback loops, inspired and illustrated by nine case studies. The two addressed issues are: how to publish innovatively? and, how to design good knowledge books? The first hypothesis is that publishing is both a knowledge and an innovative activity and that innovative publishing is enhanced by design thinking. A theory for design and action is proposed—the Knowledge Design Theory. The second hypothesis is that the readers, the authors, the editors and the publishers all desire good original knowledge books. But their interests are not necessarily aligned, and they might not know how to conceive of a desirable compromise. The Publishing Model Canvas has been designed both as an analytic tool (“all books tell stories about why or how they are designed”) and as a design frame in order to help the stakeholders have more informed discussions.

Keywords

Publishing, knowledge book, design thinking, knowledge design, creative economy

Résumé long

Introduction

Une perspective d'éditeur et de praticien du *design thinking*

Après m'être efforcé de proposer des solutions lors de mes trente années de carrière professionnelle (en tant que manager, entrepreneur, consultant et formateur), j'ambitionne de devenir chercheur. C'est-à-dire d'adopter l'éthique d'un enseignant-chercheur en privilégiant l'étude des problèmes à celle des solutions, en étant moins obnubilé par l'injonction de formuler des recommandations pratiques et efficaces, et en étant plus ouvert d'esprit et réflexif. En d'autres termes, il s'agit de m'éduquer à être plus attentif aux moyens qu'aux résultats.

Ma formation en management et mes responsabilités de gestion et de direction d'activité ne m'avaient pas prédisposé à remettre en question les fondements capitalistes selon lesquels l'édition doit être économiquement rentable. Ces questions se sont posées à moi dans les dix dernières années, depuis que, premièrement, j'ai commencé à construire et à donner des cours sur l'édition à l'université et, deuxièmement, j'ai formé des étudiants et des professionnels d'horizons divers à l'innovation par le design thinking et à l'approche créative de modèles d'affaire. En effet, durant cette même décennie, les excès de l'« übercapitalisme » se sont aggravés. Des termes comme « capitalisme prédateur », « concentration », « disruption » ont resurgi comme autant de leitmotifs. Les trois exemples emblématiques d'Amazon, de Google et du duopole ReedElsevier-SpringerNature, qui affectent plus particulièrement les médias et notamment l'édition, illustrent les effets indésirables du capitalisme. On observe les effets du phénomène des « gagnants qui remportent la mise » dans le cas des Gafam, et ceux des profits démesurés des groupes oligopolistiques qui dominent des filières comme celle de l'édition scientifique. Face à cette standardisation inhibitrice et à cette logique financière dominante, des initiatives s'organisent et l'innovation par le design à échelle humaine peut constituer une alternative émancipatrice.

Le cadre contextuel de cette recherche

Le terme de design de connaissance est plus approprié que celui d'édition pour décrire le processus de création et de conception des livres de connaissance. En effet, ce concept plus souple est mieux à même de s'adapter à la complexité du contexte actuel qui englobe un écosystème éditorial qui comprend des artefacts qui peuvent être physiques (les livres papier), digitaux (les e-books) ou les deux (transmédiatiques) et qui font partie d'un environnement qui est lui-même phygital.

Les deux questions de recherche

Pour substituer le concept de design de connaissance à celui d'édition, il faut préalablement définir ce nouveau paradigme. La raison d'être de la Théorie du design de connaissance est de proposer un cadre explicatif et de favoriser l'innovation éditoriale. Un des problèmes qui

se posent alors est celui des divergences de points de vue entre les auteurs, les lecteurs et les parties prenantes éditoriales. Donc, un second prérequis est de faciliter et d'améliorer la communication entre les créateurs, les producteurs et les destinataires de livres de connaissance. C'est l'objectif du Canevas de modèle éditorial. La sémiotique s'est révélée particulièrement adaptée à la création et à la manipulation d'un tel dispositif de représentation du processus communicationnel.

Par ailleurs, l'intelligence artificielle (IA) est de plus en plus utilisée pour fournir des solutions à deux des trois problèmes majeurs auxquels la société numérique de l'information est confrontée. Celle-ci traite, de manière autonome, certains problèmes d'infobésité et, en augmentant les capacités d'opérateurs humains, des cas de désinformation ou de fausses nouvelles. L'IA demeure actuellement incapable de pallier la délinéarisation du temps et d'améliorer la qualité de l'expérience humaine. C'est pour contribuer à traiter ce troisième point que le Canevas de modèle éditorial a été conçu.

Le cadre disciplinaire

Le Design, la Sémiotique et les SIC partagent des affinités du fait de leurs histoires, mais aussi, plus fondamentalement, parce qu'elles s'intéressent aux mêmes objets de recherche sur lesquels elles offrent des perspectives différentes qui permettent des triangulations analytiques. La littérature grise ne pointe pour autant pas (à ma connaissance) vers une fusion interdisciplinaire de ces trois disciplines. Les liens de la sémiotique et des SIC sont avérés, mais leurs corpus méthodologiques restent distincts. Les chercheurs en Design et en SIC s'accordent sur un désaccord commun : le rejet de la description de leurs champs de recherche comme des « interdisciplines à objet » (par exemple, l'objet des SIC serait les médias et celui du Design les artefacts). Les théoriciens reconnaissent que ces trois disciplines s'empruntent des concepts et des méthodes entre-elles, ainsi qu'elles en empruntent à d'autres, mais ils observent qu'ils sont finalement métabolisés par chacune.

Si les trois champs des SIC, du Design et de la Sémiotique restent donc distincts, ils peuvent être articulés par une approche multidisciplinaire – une consilience – afin de travailler des questions de recherche focalisées, par exemple, sur le design de connaissance et sur les livres de connaissance. C'est ainsi que le chercheur en humanités numériques Jeffrey T. Schnapp a forgé le concept de knowledge design pour relever les défis de la communication à l'ère digitale, et plus précisément celui de l'édition « mort-vivante » de livres académiques.

Dans le même esprit, le sémioticien Bernard Darras et le philosophe Stéphane Vial déclaraient que « le projet ou l'acte de design sont en soi des actes de communication » parce qu'un artefact bien conçu « parle de lui-même » (2017). Schématiquement, l'objet du design est de créer, pour les gens, des artefacts et des processus qui combinent forme et fonction. La sémiotique (peircienne) s'efforce d'analyser les relations entre les objets, les signes et les interprétants, et les SIC explorent les dispositifs de médiation (médiateurs et intermédiaires) et comment ils communiquent (ou pas) entre eux, avec d'autres systèmes et dans des écosystèmes.

Ma méthodologie

Quand j'ai commencé cette recherche, j'étais plus ou moins conscient de ne pas savoir exactement où j'allais. En fait, j'ai découvert en le vivant que l'intérêt d'entreprendre une recherche doctorale réside aussi dans l'apprentissage de nouvelles choses et que l'approche heuristique implique de laisser de la place à la sérendipité. D'une certaine manière, je savais que ce que je ne savais pas était plus important que ce que je savais (ou croyais savoir). Mais je savais aussi que le but de la recherche est de créer du savoir. Une approche par le design m'a aidé à aborder ce problème épineux. En ce sens, et parce qu'il s'agit d'innovation, le design thinking était nécessaire. Mais, même compris comme ce que Simon qualifie de « science de l'artificiel », je suis resté attentif au fait que le *design thinking* n'est pas suffisamment scientifique pour soutenir une thèse en SIC.

En tant que praticien et consultant expérimenté, je me suis engagé dans cette thèse avec une posture d'« expert », guidé parce que Simon appelle de « soudains éclairs d'« intuition » ». L'avertissement de Peirce qu'une abduction est « un acte d'illumination, mais extrêmement faillible » m'a guidé. Ayant commencé parce qu'Habermas appelle une « soudaine intuition abductive » (typique d'un expert, selon lui) je savais devoir examiner, et possiblement confirmer et justifier, ces « éclairs » par des méthodologies scientifiques afin d'adopter une attitude d'aspirant-chercheur. Ainsi, la Théorie du design de connaissance a-t-elle été conçue par raisonnement inductif, à partir de deux théories existantes (la *Design Theory* et la Théorie C-K). Le Canevas de modèle éditorial est le résultat d'un raisonnement déductif basé sur des études de cas et de la recherche action.

Une approche transversale de l'édition par le *design thinking*

Le cadre éditorial

La réussite dans l'édition est fondée sur un paradoxe. Une connaissance de ce secteur et de cette activité sont indispensables, mais il faut en même temps mettre de côté toutes certitudes afin d'admettre à quel point le succès est incertain, qu'il procède plus de l'exception que de la norme et que, par conséquent, il faut s'efforcer de toujours innover. L'innovation est vitale dans cette « industrie de prototypes » dans laquelle règne une glorieuse incertitude. De plus, le fondement légal de l'édition est le concept d'originalité (c'est ce critère qui définit une œuvre dans le droit d'auteur). Le concept de prototype faisant référence à l'originalité et s'appliquant aux livres eux-mêmes, l'innovation est donc consubstantielle à l'édition.

Au-delà du processus éditorial et de l'artefact livre, l'édition reste avant tout une entreprise humaine, et donc une activité sociale. C'est pourquoi il me semble approprié d'examiner l'écosystème des livres et de l'édition à travers les yeux et dans l'esprit de ceux qui les écrivent, qui les réalisent et qui les lisent.

Le cadre du *design thinking*

Le *design thinking* est orienté vers l'innovation par et pour les designers et les non-designers. Comme le design est une synthèse de la forme et de la fonction qui associe l'ergonomie et l'appréciation artistique, mais aussi parce que le design est un processus expérientiel, l'expliquer et l'évaluer demeurent complexe. Une brève histoire du design et du *design thinking* contribuent sans doute à une meilleure compréhension de ces champs, comment ils ont modelé et ont été modelés par les époques successives et les différentes cultures dans lesquelles ils ont prospéré. Le design étant culturel, la question de ses valeurs intrinsèques et ajoutées est ambiguë. Une controverse s'intensifie autour, entre autres considérations, du bon design (par exemple, La laideur se vend mal selon le titre du livre éponyme du designer Raymond Loewy) et du design pour le bien (par exemple, le design doit-il se conformer à l'injonction mercantile de vendre toujours plus sans tenir compte des conséquences sociales et écologiques ?). Le design et l'édition témoignent d'activités éminemment humaines (qui impliquent différentes parties prenantes), pour des humains (qui associent des besoins fonctionnels et émotionnels ainsi que des aspirations), par des humains (l'IA n'a pas encore démontré ses capacités d'alternative) et de plus en plus avec des humains (avec l'émergence de termes avec le préfixe « co- », par exemple : collaboratif, coopératif, co-design, etc.).

La Théorie du design de connaissance

L'objectif de cette théorie

Les théories éditoriales actuelles peuvent-elles fournir un cadre explicatif et encourager l'innovation pour publier de bons livres de connaissance originaux ?

Les théories éditoriales classiques conservent leur pertinence mais, dans l'environnement complexe et volatile actuel, il leur manque un biais performatif innovant. Le méta-concept de *knowledge design*, apparu en 2014, a le potentiel d'initier une fertilisation croisée entre les champs de l'édition et du design. Inspirée notamment pas le design thinking, cette approche émergente porte le germe du potentiel disruptif des méthodologies sur lesquelles elle repose.

Le cadre de cette théorie

La Théorie du design de connaissance a-t-elle le potentiel de devenir une théorie de l'innovation ?

Influencé par la pensée systémique de Simon dans *Les sciences de l'artificiel* et par celle de Morin dans *La Méthode*, et afin de trouver des réponses à la question ci-dessus, j'ai exploré la littérature grise dans les champs de la recherche sur les systèmes et des théories de l'innovation. En fin de compte, la Théorie du design de connaissance a été construite sur les bases de la *Design Theory* des connaissances et de la Théorie C-K (concept-connaissance). Cette théorie peut être décrite comme une théorie de théories et comme une auto-éco-organisation composé avec les trois sous-systèmes de l'auteur-designer, de l'éditeur-designer et du publieur-designer.

Ces trois « systèmes » sont en fait des gens et les rôles qui leur sont attribués dans des maisons d'édition et des processus de publication donnés pour une catégorie particulière de livres ; celle des livres de connaissance. Comme les gens ne sont pas essentiellement des systèmes, cette théorie doit s'accommoder d'un degré d'ambiguïté et de désordre. La façon de réfléchir des acteurs du design de connaissance peut être considérée comme ambidextre (c'est-à-dire qu'ils pensent avec leur « cerveau droit » et leur « cerveau gauche », et parfois simultanément avec les deux) et qu'ils ont une personnalité « en T » (c'est-à-dire qu'ils utilisent leurs capacités dans les deux dimensions d'une qualification pointue d'une part – la barre verticale du « T » – et, d'autre part, d'une empathie pour les gens et pour les disciplines dans lesquelles ils ne sont pas spécialisés – la barre horizontale du « T »). D'un point de vue sémiotique, ce sont les deux processus cognitifs attribués au design (l'ambidextrie gauche-droite et l'orthogonalité de la verticalité et de l'horizontalité du « T ») qui permettent une transversalité, laquelle traduit fondamentalement des compétences communicationnelles.

Les apports et les limites de cette théorie

Cette théorie tisse des interactions étroites entre deux types de systèmes de niveaux différents – un écosystème et une auto-organisation – pour constituer ce que Morin appelle une éco-auto-organisation. Ce système de systèmes, conçu principalement à partir de deux théories, peut aussi être détaillé en trois auto-organisations – le système de l'auteur-designer, celui de l'éditeur-designer, et enfin celui du publieur-designer – qui font référence à trois niveaux de l'échelle du design du Centre Danois du Design. En bref, cette théorie a l'avantage de présenter l'interpénétration des systèmes qui la compose de manière holistique. Par conséquent, une de ses caractéristiques est, qu'échappant par essence au réductionnisme cartésien, elle doit être comprise comme un tout et non comme la somme de ses parties, ce qui en rend l'appréhension exigeante.

Le Canevas de modèle éditorial

L'objectif de ce canevas

En tant que théorie, la Théorie du design de connaissance génère des connaissances analytiques. Le Canevas de modèle éditorial, en tant que modèle, est conçu pour produire des concepts de propositions de valeur viables et désirables pour l'ensemble des parties prenantes (client-lecteurs, auteur-designers, éditeur-designers et publieur-designers). Ce modèle, étant tissé par des participants variés, fait référence au terme de canevas. Ce canevas de modèle est une représentation simplifiée de projets complexes entrepris par des gens d'horizons divers et, potentiellement, avec des intérêts divergents, voire conflictuels. Ces différences ne doivent pas être ignorées mais, au contraire, elles gagnent à être exprimées et discutées par les participants afin d'atteindre un compromis. L'approche *design thinking* du design de connaissance vise à ce que ce compromis ne soit pas un plus petit commun dénominateur, mais qu'il soit augmenté par la créativité afin qu'un concept innovant soit formulé.

Le cadre de ce canevas

Ce canevas est conçu pour favoriser l'innovation éditoriale des livres de connaissance. C'est un produit de la Théorie du design de connaissance qui s'inspire du dessin de modèles et de concepts en Design, en SIC et en Sémiotique. Les livres de connaissance qui font l'objet de cette recherche sont conçus pour des non-spécialistes, dans l'environnement médiatique sursaturé de marchés matures. Ils ne peuvent donc pas se permettre d'être ternes et ennuyeux et leurs caractéristiques transmédias, médiagéniques et visuelles gagnent à être mises en avant.

Pour les client-lecteurs, il est plus simple de se référer aux types de livres de connaissance comme à des genres ou à des prototypes inédits, et il leur est ainsi plus facile d'y réagir et de transmettre leurs feedbacks. Un consensus dans la littérature sur l'innovation est que l'on ne peut pas demander aux utilisateurs ce qu'ils veulent (parce qu'ils sont incapables de le dire), mais que leurs réactions à des concepts innovants qui leur sont présentés sont plus intéressantes parce qu'ils sont ainsi mis en situation d'engager une discussion argumentée avec les parties prenantes.

Enfin, un degré de liberté doit être laissé aux professionnels compétents afin qu'ils restent créatifs, aient envie de déployer leur talent et évitent un conformisme qui n'est pas souhaitable.

Les apports et les limites de ce canevas

Les médias sont des biens d'expérience dont l'utilité sociale (la combinaison de leur valeur sémantique et d'un effet de réseau) se traduit, en fin de compte, par une valeur économique. Cette valeur est exprimée par un prix de vente. Dans le contexte spécifique de l'édition de livres, le concept de valeur rhétorique estompe la valeur du contenu au profit de la valeur symbolique. Le fondement théorique de ce concept s'appuie notamment sur la description barthésienne de la rhétorique comme un métalangage avec « une construction en chiasme : deux tranches de "passionnel" encadrent un bloc démonstratif ». Le contenu y est dénoté et le symbole connoté. Cependant, selon cette théorie, le contenu peut aussi être considéré comme étant au cœur de la valeur du livre (contenu par le livre comme médium). Ce canevas ne tranche donc pas entre la valeur du contenu et celle de la forme, mais, dans une approche design typique, il force à considérer, en même temps, l'un et l'autre.

Pour plus de clarté, les différentes strates du canevas de modèle éditorial peuvent être représentées séparément (en référence aux niveaux de l'échelle du design) mais il faut, là aussi et comme pour la Théorie du design de connaissance, privilégier une approche holistique. Au niveau inférieur (1), celui de l'édition sémantique, selon l'aphorisme de Bill Gates « le contenu est roi ». La masse impressionnante de contenus numériques continue de se développer selon ce que j'illustrerais par la métaphore du blob. En effet, cette énorme cellule sans cerveau se caractérise par son informité et ses capacités à se déplacer, apprendre et communiquer que les êtres humains pourraient difficilement émuler sans ordinateur. Aux niveaux intermédiaires (2 et 3), le contenu est formalisé par et pour des êtres humains. Le Canevas de modèle éditorial y trouve toute sa place pour contribuer à formaliser des discussions informées et constructives.

Au niveau supérieur de l'échelle du design (4), le design est considéré comme stratégique. Cette considération est plus particulièrement représentée par le système du publieur-designer dans le Canevas de modèle éditorial, mais peut aussi être utilement complétée, par exemple par des outils et des méthodes d'analyses sémiotiques, des modèles socio-éditoriaux et des modèles économiques.

Études de cas de projets de design de connaissance

Business Model Generation, une thèse transformée en livre de connaissance

C'est un exemple de la façon dont une approche innovante des modèles d'affaires a donné lieu à un livre original qui a permis de populariser les résultats d'une thèse doctorale auprès d'une communauté professionnelle élargie. Ce qui était l'édition par défaut de l'artefact traditionnel qu'est une thèse a été transformée en projet de design collaboratif et est devenue un dispositif transmédiatique d'artefacts originaux (dont un livre). Sur une période de neuf ans, de l'inscription en thèse jusqu'à la publication du livre, le parcours éditorial des auteurs s'est décliné en trois phases : 1. La recherche et la rédaction de la thèse – la production et la légitimisation des connaissances (l'information) ; le formatage de l'ontologie dans un canevas enseignable aux étudiants et utilisable dans des ateliers avec des professionnels (les médias) ; 3. la réécriture du texte, la création des illustrations et le design du livre – c'est-à-dire la publication rhétorique (la communication).

L'étude de cas est structurée en deux parties : la première montre comment l'auteur a écrit sa thèse comme un artefact qui démontre la pertinence de sa réflexion (c'est-à-dire centré sur la méthodologie), et la seconde traite de la publication du livre par les auteur-designers, les éditeur-designers et les publieur-designers comme un artefact pour l'action (c'est-à-dire qui intègre la perception des lecteurs). Cette seconde partie comprend deux sous-parties. Il s'agit premièrement d'une analyse comparative de la rédaction de la thèse et du livre qui a été « co-créé très visuellement ». Deuxièmement, l'approche orientée utilisateur est mise en perspective en montrant comment les lecteurs ont été d'abord consultés, puis incités à adopter une attitude transmédiatique et à naviguer entre un canevas disponible gratuitement en ligne et des ressources complémentaires (un guide d'utilisation, un jeu de cartes, etc.), le livre lui-même, et une application payante, des masterclasses et des ateliers.

Dé-livrer McLuhan, le *massage* d'un essai en un livre visuel

Publié en 1964, et bien que difficile à lire, *Understanding Media* est devenu un bestseller imprévu qui a popularisé les thèses de McLuhan. Le producteur Agel et le designer Fiore se sont inspirés des concepts développés dans cette première édition reliée pour les démocratiser à destination d'un plus large public. Leur projet était celui d'une version illustrée des métaphores et aphorismes de McLuhan. Leur approche irrévérencieuse a été jusqu'à conserver une coquille typographique involontaire dans le titre qui est devenu *Le Medium est le massage*. D'une cer-

taine manière, ce livre était une tentative de rendre le mcluhanisme cool et de faire coïncider une forme créative avec le contenu original de l'auteur.

Ce processus de transformation d'un essai intellectuel en un livre illustré peut, selon moi, être analysé au prisme de la vision dualiste du monde de Lévi-Strauss (tempérée par celle de Goo- dy) et de la dialectique de McLuhan entre modernisme et postmodernisme. Cette entreprise est paradoxale en ce qu'elle pourrait être résumée comme une approche ambidextre typique du design (en ce qui concerne les auteurs) et comme de l'infotainment (pour ce qui en est de l'appréhension par les lecteurs). Dans ce sens, *Le Massage* peut être considéré comme un projet de design visant à faire s'effondrer la forme et le contenu dans une déstructuration intégrale représentée par un non-livre hybride. Cette expérience éditoriale ne concerne pas ce qu'est un livre, mais ce qui peut être fait avec un livre et ce qu'un livre fait (c'est-à-dire l'effet qu'il exerce sur le lecteur).

Le Déploiement et L'art invisible : comprendre la bande dessinée, la réflexivité de la BD en tant que design visuel de connaissance

Bien que leurs styles graphiques soient visiblement différents, ces deux bandes dessinées peuvent être étudiées ensemble pour deux raisons principales. Premièrement, elles s'inscrivent dans la même forme triviale de bandes dessinées sérieuses (presque un oxymore) pour adultes et, deuxièmement, leurs propos complexes (sur la réflexivité de la bande dessinée et sur la pensée visuelle) présentent un intérêt thématique dans le cadre de cette thèse. De plus, ils tissent des liens étroits entre ce qu'ils discutent et comment ils en discutent, à la manière typique dont le design intègre la forme et le contenu.

Les deux auteurs revendiquent une approche politique selon laquelle, en tant qu'intellectuels et qu'artistes, ils doivent s'efforcer de rendre leur œuvre accessible aux gens qui travaillent et ont peu de temps libre à consacrer à la lecture. Celle-ci doit donc être agréable et instructive. Comme les bandes dessinées sont visuelles et que l'appréhension visuelle demande moins d'effort que la compréhension de texte, ce médium se prête à leur projet politique.

Le plaisir de la lecture tient aussi au mode narratif de la bande dessinée qui permet de raconter des histoires d'une manière particulière – entre le visionnage passif de films animés et la lecture active de livres – et de mélanger les ingrédients de la rhétorique, de la délinéarisation (selon la disposition des unités thématiques que sont les cases), de la stylisation des dessins et des diagrammes (les représentations graphiques), etc. pour obtenir des recettes inédites.

Brigitte Borja de Mozota, une entreprise de popularisation du design management auprès des dirigeants économiques

L'ambition de cette étude de cas n'est pas de retracer intégralement la carrière de la professeure Borja de Mozota, ni même sa bibliographie. C'est un point de vue partiel et partiel de son approche de la diffusion du savoir par la publication de livres et ses activités associées. Mon objectif est de montrer comment elle a designé le design de ses publications sur le *design mana-*

gement et de comprendre la cohérence entre ses objectifs initiaux et la perception de ses travaux publiés. Ses publications académiques (thèses, articles et livres) répondent aux meilleurs standards de publication scientifique et ont été bien accueillis par ses pairs. Son livre *Design Management* est devenu la « bible » de la discipline pour les étudiants et les doctorants. Elle a même réussi une incursion du design et du management vers un public plus artiste, non-spécialiste et moins avancé dans les études supérieures avec la collection de livres qu'elle a lancée et dirigée à l'école d'art Parsons à Paris.

Finalement, cette étude conclut sur une série récente d'articles co-écrits avec le consultant Valade Amland sur le réseau social professionnel LinkedIn. Dans ce cas, le projet initial d'un livre s'est transformé progressivement en auto-publication d'une série de papiers non-académiques sur la plateforme en ligne de ce réseau social. C'est indéniablement une entreprise innovante. Mais son design manque des qualités formelles pour dépasser le cercle des communautés qui étaient déjà intéressées par le travail des deux co-auteurs. Ces derniers ne sont en effet pas parvenus à s'accorder sur un consensus désirable de ce qu'ils souhaitaient accomplir et pour quel public. Ils ont donc produit un artefact entre-deux, non pas faute de talent mais parce que leurs perspectives n'étaient pas alignées.

La publication de la conférence Écrdil, une édition collaborative du livre *Version 0*

L'état d'esprit dans lequel je me suis proposé de contribuer à la publication d'Écrdil était celui du *design thinking* considérant les trois dimensions innovantes du design de connaissances ; c'est-à-dire la désirabilité du design, la faisabilité technologique et la soutenabilité économique. Les parties prenantes qui ont organisé le colloque Écrdil sont engagées dans les humanités numériques. Ils adhèrent aux les dimensions design et technologique de l'innovation mais, leur revendication politique étant que la publication doit être libre et gratuite, de possibles discussions sur la troisième dimension du modèle économique n'ont pas été engagées.

À l'origine, un consensus s'était établi sur l'objectif d'éviter une publication qui aurait la forme d'actes de colloque, et sur notre souhait d'encourager une créativité formelle. Une autre dimension consensuelle était de privilégier un processus d'édition coopératif dans lequel la diversité des talents réunis pour cette conférence sur l'édition puisse s'exprimer. Le fait d'utiliser l'infrastructure technologique et un système de publication adapté de celui d'une revue était, à ma connaissance, inédit pour un booksprint. Ce système, fondé sur les principes du logiciel libre et des humanités numériques, s'est avéré efficace pour la publication de *Version 0*. On peut cependant se poser la question de son efficacité par rapport à des suites commerciales wysiwyg éprouvées. Par ailleurs, comme les principes du libre, du gratuit et de la subvention ont tenu lieu de modèle économique, la question de la valeur (qualitative et/ou quantitative) conférée au livre est discutable.

Études de cas de collections et de programmes de design de connaissance

La conférence de design Cumulus à Paris, la publication accessoire

Ce cas illustre que l'importance des publications pour une institution dont les missions incluent la recherche ne doit pas être confondue avec l'importance de les éditer et de les publier. En d'autres termes, si le comité d'organisation était ouvert à des expérimentations éditoriales, il a finalement manifesté peu d'intérêt à développer une initiative de design de connaissance, tant que la publication était assurée par ailleurs.

Nature et *Science*, l'excellence scientifique au service des experts et des non-spécialistes

Ces deux revues ont tellement de points communs – entre ce qu'elles publient et comment elles le publient – qu'elles peuvent être étudiées ensemble. Un paradoxe est qu'elles juxtaposent habilement des contenus éditoriaux et publicitaires et doivent, en même temps, assurer la parfaite indépendance des uns vis-à-vis des autres.

Ce sont, par design, des revues de confirmation et non des perturbateurs de l'ordre scientifique établi. Les articles qui y sont publiés sont majoritairement co-écrits par des collectifs nombreux et cette particularité reflète le biais humain de l'attitude conformiste que les individus ont tendance à adopter dans des groupes. Au contraire, les innovations sont plus souvent le fait de « déviants » qui travaillent seuls, ou dans de petits groupes, et qui ne se conforment pas nécessairement aux règles formelles de leur discipline et du système d'évaluation par les pairs.

Les machines apprenantes sont en passe de démontrer des capacités à faire émerger des connaissances latentes et du savoir caché de manière autonome. En d'autres termes, l'IA pourrait non seulement compiler des informations mais serait aussi capable d'innover par la manipulation de grandes quantités de données entre lesquelles elle établit des connexions originales. Cette transformation potentielle pose de nouvelles questions éthiques sur le rôle social et sur l'impact de la science. Serait-ce encore de la science pour et avec les gens ?

Pour l'instant, les machines n'ont pas démontré leurs éventuelles capacités à émuler les stratégies visuelles de *Science* et de *Nature* qui ont montré leur pertinence en ce qui concerne l'apprentissage humain tant des chercheurs des mêmes champs que de ceux d'autres disciplines. Les éditeurs humains semblent donc aussi nécessaires que toujours du fait de leurs compétences à comprendre et à designer ; c'est-à-dire à communiquer d'humains à humains et à donner du sens.

The Conversation France, la vulgarisation avec les chercheurs

The Conversation est, à l'origine, une initiative australienne qui est devenue une fédération internationale de partenaires nationaux. Leur objectif commun est le désir de vulgariser la science avec les scientifiques qui la produisent et grâce au savoir-faire des journalistes. Cette

collaboration entre des chercheurs et des journalistes est, en elle-même, un défi qui nécessite une prudence et des ajustements continuels.

Les trois piliers sur lesquels sont bâtis de *The Conversation* sont la confiance, le travail en studio et la représentation. Premièrement, le contenu publié est étayé par des recherches scientifiques et l'équipe éditoriale des journalistes privilégie une approche conservatrice afin d'éviter les controverses. Son but est de fournir des informations sérieuses pour alimenter des débats informés. Les articles sont conçus comme le chaînon manquant entre les articles de revues scientifiques et les articles de presse. Deuxièmement, *The Conversation* est une « start-up de vieux », une organisation collaborative et empathique. Troisièmement, *The Conversation* est un médium entièrement électronique qui s'efforce de vulgariser la recherche et promeut la syndication de contenu vers d'autres médias, avec l'édition imprimée desquels il ne doit donc pas entrer en concurrence.

Pour être néanmoins visibles à leur échelle, les papiers sont rédigés en ajoutant une dose de médiativité (un mélange d'émotion et d'information, d'affect et de cognition) aux informations scientifiques et en représentant visuellement les concepts scientifiques. Le modèle d'accès ouvert non-concurrentiel avec les médias traditionnels a démontré sa complémentarité avec ces derniers, ainsi que sa soutenabilité pour *The Conversation*.

TopicGraph des Jstor Labs, une innovation éditoriale multidimensionnelle

Depuis sa fondation à la fin des années 1990, l'activité de Jstor s'est développée et, parallèlement, le rythme du changement s'est accéléré. L'activité a été réorganisée et les Jstor Labs ont été créés en 2014. Leur mission est d'aider la communauté académique à rester dans la course à l'innovation éditoriale. Les Jstor Labs sont une organisation à but non lucratif conçue par et pour la communauté académique. Leur éthique est celle des humanités numériques.

Ce sont plus l'hybridation d'un *i-lab* (laboratoire d'innovation), d'un *fab-lab* (laboratoire de fabrication) et d'une usine à projets qu'un laboratoire de recherches à proprement parler (dont l'objectif serait alors de produire des modèles et des théories). Leur équipe est constituée de chefs de projet, de designers et de développeurs et c'est « un endroit où l'échec est permis » et dont le financement est assuré en conséquence (c'est-à-dire qu'il ne dépend pas d'appels à projets). Leur méthodologie s'inspire, de manière souple et informelle, des méthodes agile, du mode opératoire des start-ups et du *design thinking*. Leur objectif est de développer des innovations aux trois niveaux des caractéristiques des produits, des produits eux-mêmes et des modèles d'affaire.

Le projet TopicGraph est une plateforme en ligne qui a été développée pour répondre aux besoins des chercheurs qui « consomment » des livres académiques. La visualisation s'est avérée être un élément fondamental afin de montrer à l'équipe et aux utilisateurs les évolutions des développements aussi souvent que possible, parce que c'est « vraiment difficile de les imaginer ». La plateforme TopicGraph ne va pas être maintenue car ses statistiques d'utilisation sont faibles. Mais, nombre de ces caractéristiques ont été utilisées et appréciées et sont mises en place dans un autre projet, TextAnalyzer, qui s'est avéré plus populaire.

Conclusion

Constats et découvertes dans les études de cas

En trois ans et demi de recherches, il aurait été surprenant qu'il n'y ait pas de surprises. Voici donc une liste très resserrée des trois constats et découvertes sérendipitaires les plus frappants par lesquels débute cette conclusion. Le premier constat était prévisible, mais j'avais sous-estimé son importance *a priori*. Ce n'est pas tant que les lecteurs ne savent pas ce qu'ils veulent en termes de nouveautés, mais ils ont besoin qu'on les leur montre. Ainsi, leurs réactions peuvent être observées et des enseignements en sont tirés dans une démarche typique de *test and learn*. En d'autres termes, les lecteurs savent ce qu'ils veulent (ou, plus souvent, ce dont ils ne veulent pas) quand ils le voient. Deuxièmement, à l'exception de celles de polymathes talentueux, la plupart des publications sont non seulement augmentées, mais aussi améliorées, par le travail d'équipe. Certaines sont mêmes meilleures parce que leur(s) auteur(s) n'a pas été impliqué dans leur (re)design (dans tous les cas, les auteurs doivent être réintégrés dans le projet à un moment ou à un autre, ne serait-ce que parce qu'ils doivent donner leur accord). Enfin, une réponse existe à la question : qu'est-ce qu'un bon livre de connaissance ? En bref, c'est un livre performatif parce qu'il est rhétorique ; c'est un livre augmenté par la gestalt et qui peut être appréhendé selon plusieurs perspectives ; et c'est un livre qui est un médiateur (plutôt qu'un intermédiaire). C'est-à-dire un livre suffisamment réflexif pour ne pas être qu'un guide, qui ne vise pas à transposer la chose elle-même dans une réalité virtuelle, mais qui est perçu comme un ensemble pertinent de bonnes représentations de cette chose – une réalité augmentée.

L'innovation éditoriale et la Théorie du design de connaissance

Je me suis efforcé de situer le concept émergent de *knowledge design* de Schnapp dans les disciplines du Design et des SIC et de proposer une théorie. Selon la taxonomie du champ des recherches en systèmes d'information, cette théorie, qui s'inspire du positivisme logique et du pragmatisme, est de type 5 « design et action ». Son but est l'innovation éditoriale et, en tant que tel, le concept de *knowledge design* s'est avéré présenter des facettes analytique et performative. Cette théorie s'applique au système des livres de connaissance et plus de recherches serait nécessaire pour déterminer si elle pouvait s'appliquer à d'autres systèmes, notamment médiatiques, et dans quelles conditions.

Les livres de connaissance et le Canevas de modèle éditorial

Le designer graphique Armand Mevis explique dans son texte de 2015 « Chaque livre commence avec une idée » qu'évidemment « tous les livres commencent par leur contenu ». Mais, de plus, puisque les livres doivent être édités et designés, « un livre est un processus collaboratif » et la communication est fondamentale pour rendre possible la collaboration au sein de l'équipe éditoriale. C'est pourquoi, il a complété ses affirmations précédentes par la suivante : « tous les livres commencent par une question ». Dans cette recherche, qui mobilise les concepts et les

méthodologies du *design thinking*, une reformulation serait : les projets de livres de connaissance devraient commencer par la rédaction d'un brief consensuel à partir duquel s'organise le travail collaboratif de l'équipe d'auteur-designers et d'éditeur-designers.

Un défi de ce brief est, qu'avant même de réfléchir au design, il doit permettre de considérer « la forme du contenu ». En termes plus généraux, cette phase préliminaire peut être qualifiée de recherche de problème. Elle se conclut par la rédaction d'un brief de design sous forme de question.

Cette question, dont Mevis conseille qu'elle interroge « si un livre fonctionne ou pas », est le point de départ de la deuxième phase, celle de la résolution de problème. Celle-ci se décline en deux étapes, similaires à celles du *Double Diamond*, c'est-à-dire la production éditoriale « relier le contenu à un concept » et la publication « relier le concept à une forme ». Finalement, « tous les livres racontent l'histoire de comment ils ont été conçus » et le Canevas est conçu pour raconter cette histoire.

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Introduction

PLEASE NOTE THAT ALL QUOTES IN THIS DISSERTATION FOLLOWED BY AN ASTERISK ARE MY OWN TRANSLATIONS FROM FRENCH INTO ENGLISH.

Chapter 1.

Personal overview: a publisher's and design thinker's perspective

After striving to be a solution provider for the last thirty years of my professional life in my capacities as manager, entrepreneur, consultant and educator, my ambition is to become a researcher. That is to value problems over solutions and needs, to be less focused on practical and efficient recommendations and to be more open-ended and reflexive, in order to attain the desired status of teacher-researcher. In other words, I have had to “educate”¹ myself to value process over outcomes.

Having been a publisher for the last twenty years, initially in an imprint (Armand Colin) of a big publishing group (Hachette) and then as the founder and manager of a publishing enterprise (Éditions NecPlus), and having a finance and management educational background, I had never even questioned the underlying capitalistic assumption that publishing (as any other industry as per the conventional liberal economics ideology) must be financially profitable in order to thrive. In the last ten years, I have also started a new career in parallel: 1. teaching publishing-related courses at French universities; and 2. training students and professionals from diverse backgrounds and industries in innovation with design thinking and in creative uses of business models.

Over this same decade the perceived excess of “übercapitalism”² has become a growing concern. Buzzwords like “predatory capitalism”, “concentration”, “disruption” have (re)surfaced. Three spectacular examples of the undesirable effects of capitalism, which are particularly affecting the media in general and publishing in particular, such as “the winner takes all” effect of the Gafam and the “greed” of dominant and oligopolistic companies are:

- an example of hypergrowth given by Amazon with an almost tenfold increase in revenue over ten years to achieve a revenue of US\$233bn in 2018³. For professor of Publishing Studies Angus Phillips “Amazon has seen the need to acquire customers, not simply sell products” (2014); and hit as become *The Everything Store* (Stone, 2013). While the problem for the publishing industry is that even though bookselling has become increasin-

1 “The concept of education is a constant reorganising or reconstructing of experience. It has all the time an immediate end, and so far as activity is educative. It reaches that end—the direct transformation of the quality of experience... We thus reach a technical definition of education: It is that reconstruction or reorganisation of experience which adds to the meaning of experience and which increases ability to direct the course of subsequent experience” (Dewey, 1916: 59).

2 A Google search (12th July 2019) linked to books by British cultural theorist Gary Hall *The Uberfication of the University*, 2016, University of Minnesota Press, coll. “Forerunners”, *The Inhumanist Manifesto*, 2017, Techne Lab at the University of Colorado and also to seminars such as “The Digital Economy: Ubercapitalism or Postcapitalism?”, organised on 11th May 2018 by the Centre for Digital Culture at King's College London

3 The turnover of Amazon grew almost tenfold in the last ten years from US\$24,500m in 2009 to US\$232,900m in 2018 with a mere 2% operational profit ratio.

gly marginal for Amazon, Amazon turned into an 800-pound gorilla for the publishing industry;

- the massive digitisation of seven millions books by Google as of November 2008 for its Google Books initiative. It eventually got embroiled in a judicial battle and reached a settlement after a class action had been brought up by a group of authors in September 2005⁴. This incident did not stop Google from subsequently growing sixfold from 2008 to 2018 and achieve revenues of \$137bn with a 22% profitability margin⁵. The problem is that the hyperdominance of Google search (well over 80% of web searches in most developed western countries) is a Damocles' sword over the media;
- an instance of increasing oligopolistic concentration with the cumulated weight of mega-groups of merged companies ReedElsevier and SpringerNature which amount to a 44% share of their market in 2018 (vs. around 30% in 2009) for a combined turnover of €10bn⁶. As it could be expected—according to the theory of market economy—this growing oligopoly has managed an exceptionally high profitability ratio of some 30%⁷ through an unprecedented increase of the subscription prices to academic journals over the last fifteen years. The problem is that the perceived price of information has become unjustifiable at a time when “information wants to be free”⁸. And it has sparked numerous initiatives and debates on open access⁹.

These three examples above, on which I will not expand, show: 1. how publishing (amongst other industries) is challenged (if not squeezed) for its access to customers by the logistics behemoth Amazon; 2. how users access information through info-mediators, and chiefly Google;

4 For a more detailed account, see “Google and the future of books” in Darnton, Robert. 2009. *The Case for Books*. PublicAffairs. New York, USA.

5 The a turnover of the holding company Google inc. was \$21,796m in 2008 for a net income of \$4,226m. Alphabet, the new holding company of the Google group, declared revenues of \$136,819m for a net income of \$30,736 in 2018.

6 In 2009 Springer declared a turnover of 859 millions € with a 33% return on sales and SpringerNature reported €1,660m in 2018 but did not disclose their profit. ReedElsevier had a turnover of £6,071m in 2009 with an 26% operating profit and £7,492m in 2018 with a 31% operating profit. The combined turnovers (at July 2019 conversion rate) of ReedElsevier and SpringerNature was €10,000m, that is a 30% growth in 10 years, with a realistically assumed profit rate of around 30%. The “broader STM information publishing market” was worth some \$25.7bn in 2017 (Rob Johnson, Anthony Watkinson, & Michael Mabe, 2018, *The STM Report—An overview of scientific and scholarly publishing*, International Association of Scientific, Technical and Medical Publishers).

7 This 30% profitability ratio is 5 to 6 times more than the 5.5% average ratio for the trade publishing market in France (source: Joëlle Tubiana, 2015, *Maisons d'édition : les chiffres 2013*, KPMG) or almost four times higher than the 8.4% profitability ratio achieved by Hachette (Lagardère Publishing) in 2018 for a €2.2bn turnover.

8 See Anderson, Chris. 2009. *Free: The Future of a Radical Price*. New York: Hyperion.

9 “Open-access publishing presents an increased potential for bringing institutional accomplishments to public attention, making clear both what it is we in the academy do and why it is important that we do it. [It is] in fact a means of making clear the extent to which the academy's interests *are* the public interest. [But] openness itself was not the answer to publishers' concerns about their business models” (Fitzpatrick, 2011)

and 3. how unreasonable pricing for published content have been set by the perceived greed of the big scientific publishers. My focus amongst these organised systems is the field of knowledge publishing (I will define what a field is and what this particular one is later) which should work with (and not be a predator of) the academy while simultaneously creating value—which is the purpose of publishing. Basically, publishing is creating value is by mediating knowledge. Contrarily to the specialisation of the scientific culture¹⁰ “expressed in formalised languages¹¹ inaccessible to the layman”, I am following Edgar Morin who expressed his preference for the humanist culture which is “a general culture” (1991). My theoretical framework mainly draws on consilience between ICS, Publishing Studies, Design and Management Science:

- the long form argument of book allows for formal originality. For Digital Humanist Kathleen Fitzpatrick, many media studies programs over the last ten years have strived “to bridge the theory-practice divide”¹² between “*criticism* (art history, literature, media studies) and *practice* (studio art, creative writing, media production)” (2011);
- the language in which a book is written is important. Umberto Eco was famously quoted for saying that “the language of Europe is translation”. In the same vein, one of the findings of the 2017 report “Academic Books and Their Future” (Jub, 2017) was that scholarly books in the arts and humanities—unlike that for scientific journals—are multilingual. But cultural differences extend beyond different languages. For instance, Philosopher Robert Waller (1987) pointed out that “genre rules relate to rhetorical and linguistic rules in the way that Anglo-Saxon common law relates to the Napoleonic code: they rely largely on precedent, rather than prescribing the range of legal possibilities.” It should also be borne in mind that Publishing Studies do not exist as such in France (as well as most “object oriented” studies which are not represented in the mostly disciplinary structure of French research). And conversely, comprehensive Information and Communication Sciences (ICS) do not exist as a whole in the UK and the US where Information Science is an academic field and Communication Science is another, and Media Studies is a discipline of its own. There is neither a general consensus on what a

10 STM publishing has been by and large standardised around three main features: 1. the semantics are fixed; 2. the language is formatted and formatting (“globish”); 3. discussions are largely factual whereas they are more controversial in other fields.

11 An example of formal language was given by Jack Goody (1977): “mathematics is international because its language is independent of phonetic systems; its concepts are inter-cultural because they are not phrased in a particular vernacular. And it is the existence of a notation far removed from speech that makes possible mathematical thinking and mathematical operations”.

12 “A division emerged over the course of the 20th century that separated humanities knowledge into study and analysis on the one hand, and practice and application on the other. The former is characterized by criticism, hermeneutics, and close reading, almost exclusively undertaken by a single author who works to articulate a highly defined problem in a specific discipline. The latter is rooted in design, collaboration, and performance, often stretching across media and involving multiple agents, producers, and authors. Thus, the creative energies of the arts come to be seen as distinct from the ‘serious’ practices of criticism, analysis, theory, and history. In other words, the process of ‘how’ became separated from the content of ‘what.’” (Burdick et al., 2012)

book is. Depending on respondents' background, there are a lot of definitions and specialists' seminars can be devoted to this question and not come up with a consensual answer. If platform can be language-agnostic, media are not: books are not translated, they are adapted;

- could there be non-written forms, common conceptual languages (other than formalised languages such as algebra)? For instance, sign language, non-verbal communication, emojis and infographics are candidates worth-considering. For my current purpose, I will exclude so-called audiobooks and potential videobooks to focus on p-books and e-books. So, my scope is limited to writing and static visualisation;
- “data are capta” (Drucker, 2014) in the sense that they are the product of a social construct and are interpretative.

I could also say that my theoretical framework consists of *The Sciences of the Artificial* (Simon, 1969). Because, as a “white-collared ones”, I live in an artificial¹³ environment which consists of “symbols” that I receive through eyes and ears. These “artificial things” (i.e. artefacts) share three main features: 1. they are *synthesised*; 2. they can be characterised in terms of *functions, goals, adaptation*; 3. they are discussed in terms of *imperatives as well as descriptives*. In other words, the sciences of the artificial are concerned “not with how things are but with how they might be [how they work] in short, with *design*” [italics added]. Thus, it seems appropriate to address issues around publishing and book through design as a science of the artificial.

¹³ “You will have to understand me as using ‘artificial’ in as neutral a sense as possible, as meaning man-made as opposed to natural.” (Simon, 1969)

Chapter 2.

The scope and context of this research

As this research addresses knowledge books as specific artefacts, knowledge design is a more appropriate term than publishing to describe the process by which they are created. In the complex current context, the publishing ecosystem encompasses books as artefacts which can be either physical (p-books) or digital (e-books) or both (transmedia) in a dual physical and/or digital environment defined as phygital.

1. The scope of the knowledge books

1.1. What is knowledge design?

The world of (book and journal) publishing is too wide and too diverse to be comprehensively addressed in this dissertation. Schematically, publishing consists of three main sectors which are trade, education and scientific. There is a specific activity which sits at the intersection of these three sectors that I would rather call knowledge design than publishing. The major endeavour of this thesis is to elaborate on this activity.

As a preamble of what it is (see «4. Literature review: publishing as Knowledge Design», page 146 for more details), knowledge design could be summarily defined as the mediation of scientific paradigms as pedagogical material packaged for the general public. It is a mix of portman-teau and hybrid concepts such as edutainment, infotainment, and popularisation publishing (see Figure 1). Its main intended audience is populated with curious people and utilitarians (as opposed to other members of the general public who mainly seek to be entertained), but also with researchers and experts of given fields who want to get a grasp of what their fellows in other disciplines do and of members of the education community who have an interest in updating on what they are teaching and/or learning. In summary, knowledge design is a fuzzy concept for an ill-defined readership and thus—as a “wicked problem” (see definition in Chapter 10, 5.5)—is better approached from different perspectives, including design thinking.

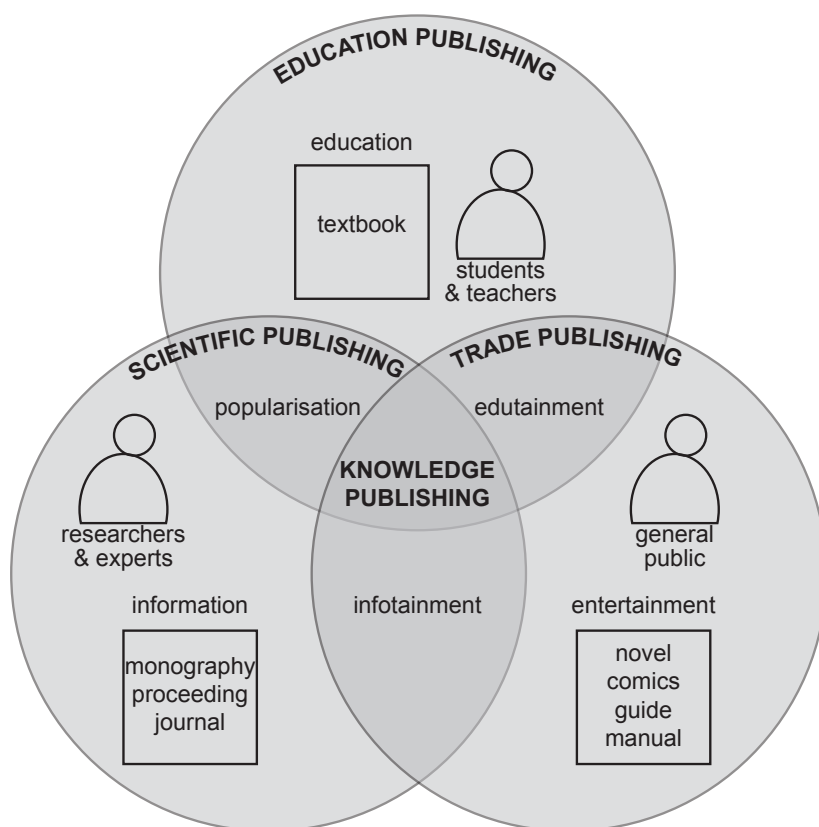


Figure 1. Mapping of knowledge publishing, CC BY-NC 4.0

In terms of design, knowledge design can be more generally interpreted as an user-centric (the general public) design process of blending form (pedagogical material) and function (paradigms). This interpretation allows to think of knowledge design outside the box of publishing; i.e. a change of perspective that enables to experiment the fresh innovative approach of design thinking.

1.2. What is a knowledge book?

Knowledge, in the current state of the organisation of knowledge, can not reflect upon itself because: 1. the brain from which it proceeds is studied in the departments of neuroscience; 2. the mind that makes it is studied in the departments of psychology; 3. the culture to which it is subject is studied in the departments of sociology; 4. the logics that control it is studied in a department of philosophy; 5. that these departments are institutionally not communicating. (Morin, 1991)

Etymologically, knowledge refers to the *action* of “understanding” and to learning by “organised body of facts or teachings”. Knowledge is a structured accumulation of references ordered in such way that it makes sense. That is, for example the structure of an argument as developed in a book compared to the information contained in an encyclopaedic article. It has a tree-like structure (e.g. “the tree of knowledge”) whereas reference is a fragmental bit (as in computing bits) of this knowledge (e.g. the Eve’s apple is hanging on the tree of knowledge). Knowledge has a *form* and the form of knowledge is distinct from the form of reference. Reference has long been

organised as a network (e.g. the semantic network of dictionaries such as *Le Robert*) with a thematic or alphabetic interface and can be self-organised in a network (in a rhizomatic way¹⁴). The particular form of reference has proved to be best suited to the Web. The printed encyclopedia (in the form of book) has disappeared, replaced by superior digital infrastructure (e.g. Wikipedia to produce and consult references) and online services (e.g. Google for the search) while knowledge books are still being printed.

This question of what a book is is the subject of numerous books, conferences, seminars, etc. and remains controversial, or at least has never fit into a simple and unique definition. Giving a comprehensive definition of the book is out of the reach of this work. The scope of this dissertation is to present a working definition of knowledge books. In a nutshell, this definition is twofold and based on Publishing Studies experts Michael Bhaskar and Angus Phillips' in their introduction to *The Oxford Handbook of Publishing* (2019): a book is an "information architecture"¹⁵ and a medium, "one of the crucial conduits via which information, knowledge, and culture are disseminated". The information architecture of a book is firstly information performed by the curatorial paradigm of active filtering¹⁶, and secondly the simultaneous design of form and content intertwined. A book is also a medium as its function as a published artefact is to amplify its message.

Knowledge books reconcile culture and technology through *information theory* in a way that Philosopher Gilbert Simondon referred to as "a science of technology and a technology of science"* (1958). In this sense information theory and "technical" culture are blurring the opposition between practical knowledge (*savoir pratique*) and theoretical knowledge (*savoir théorique*). Some "technical" books could be considered as ill-defined, ambiguous, hybrid objects. This thesis is focused on a particular type of nonfiction books which are the products of knowledge design. They are neither pure entertainment for the general public (i.e. trade publishing...), books for children and teenagers (textbooks, comics...), and nor are they purely theoretical or scientific (written by and for experts). These books, which sit on a middle ground between entertainment

14 A parallel can be drawn between the logic of knowledge versus reference and what Anthropologist Tim Ingold refers to as "stratigraphic" (i.e. a layered interface) versus "antistratigraphic" (i.e. a rhizomatic logic): "the interface has two sides, interior and exterior, or upper and lower, and serves both to separate what is on one side from what is on the other, and as a conduit for the transmission of information across the threshold between them. [...] In the very principle of its operation, the press [printing] is stratigraphic, in that it works by overlaying one surface [ink] upon another [paper] [...] The logic of stratigraphy (mapping for us, 'tracing' for Deleuze and Guattari) articulates and hierarchizes successive states of affairs, each of which comes ready-made, piling one upon the other like printed sheets in a stack, or like the successive levels of a tree-diagram that mediate between a deep structure below and a surface structure above. Antistratigraphic logic, by contrast, is rhizomatic" (Ingold, Tim. 2018. "Surface Textures: The Ground and the Page". *Philological Quarterly* 97 (2)).

15 For ICS researchers Evelyne Broudoux, Ghislaine Chartron & Stéphane Chaudiron (2013), the equation that defines Information Architecture is $IA = IT + KM + UX$ (Information Technology + Knowledge Management + User Experience), with a current emphasis on graphism and an overall bias of ICS towards the user. This trend is an update of McLuhan's aphorism that "the message is the media".

16 For Digital Humanist Marcello Vitali-Rosati (2016) "curating is about choosing the way we present and structure content".

and difficult-to-apprehend content, may be described as infotainment. It is a means of communication of practical knowledge (*connaissances*) rather than of theoretical knowledge (*savoirs*) even though the difference between these two fields is not clear-cut (see Figure 2). “Knowledge books”* (*ouvrages de connaissance*) are a summary of what publisher Éric Vigne calls “a state of play on a given issue”* (2008). Publishers actually distinguish them from *livres de savoir* which propose is an “analytical breakthrough”* or a “paradigm”¹⁷. In this respect, knowledge books contribute to the socialisation of paradigms instead of their inception or of speculation about them (see the case studies on the maturation of doctoral research such as Osterwalder’s gave rise to the *Business Model Generation* book or how Borja de Mozota’s lifelong research was presented in *Design Management*).

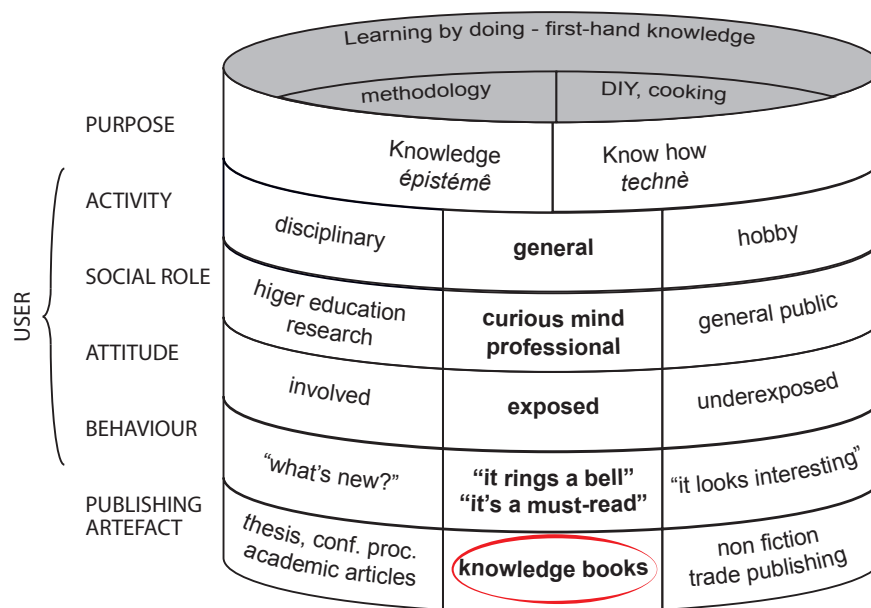


Figure 2. Typology of knowledge books versus other types of publications, CC BY-NC 4.0

For instance, “how to” books, guidebooks¹⁸, etc. are “books for action” for professionals or vocational readers; essays, conference proceedings, manuals, etc. are “books for thinking” for higher education students and academics or experts outside of their respective disciplines. Books for

17 In his doctoral thesis in Philosophy (1987), Robert Waller explained how post-war philosophers of science Kuhn defined a *paradigm* “in social terms” as a common “model or pattern” shared by a community of scholars in a mature scientific discipline. They might not start as “complete systems of thinking” but it is important that they represent a new state of knowledge “by being incompatible with their predecessors”.

18 “The advantage of a travel book approach over a ‘discourse on method’ is that it can not be confused with the territory on which it simply overlays. [...] it offers suggestions rather than imposing itself on the reader. [...] It is directed at practitioners as a how-to book, helping them to find their bearings *once* they are bogged down in the territory.” (Latour, Bruno. 2005. *Reassembling the Social – An Introduction to Actor-Network-Theory*. Oxford University Press.)

action are not necessarily incompatible with those for thinking in the Peircean sense of “thinking is behavior”¹⁹.

Knowledge books are nonfiction hybrid of textbooks, manuals and infotainment books and their motives are to inform²⁰, educate or persuade²¹:

- most textbooks are prescribed reading for learners (pupils or students). The pedagogical value of textbooks is in the logical connections they establish between component elements. They are as explicit and context-free as possible. These projects require substantial investment and expenditure on design is significant;
- manuals are adult education books mainly for job-related tasks. Since they need to engage their readers more than textbooks (reading manuals is not compulsory) they can not afford to be dull and resemble magazines for the role of illustration;
- infotainment books are bought by general readers who wish to understand how something works, or to learn a skill. These readers need to be even more engaged than manuals readers.

One of the genres which has been more affected by visualisation are the travel guidebooks²². For them as well as for infotainment books, manuals and textbooks, the basic design unit is the double-page spread (or sequence of them), and they make use of figures and images beyond their sole illustrative function. This “graphesis”²³ is a “visual form of knowledge production” which is an inversion of the classic logocentric relationship between text and image. In its most radical form²⁴ text is considered as a kind of caption related to an image which merely fills in designated page areas to balance graphic areas. Cultural critic and visual theorist Johanna Drucker claims

19 Logician and semiotician Charles S. Peirce wrote that “just as we say that a body is in motion, and not that motion is in a body, we ought to say that we are in thought, and not that thoughts are in us” (in Hoopes, ed., 1991).

20 Angus Phillips suggests that breaking down works may offer good enough content for readers who are “after the information and not the smoothness of the reading experience”. Michael Jubb confirmed this stance in his report for the AHRC “Academic Books and their Future” (2017) as he observed that “academics as readers may have different interests and perspectives from academics as authors” and that they might simply be consulting monographs instead of reading them from cover to cover.

21 In turn, for Waller their “topic structure” reinforced by their “graphic arrangement” (typography and layout) help authors order their ideas and can be indirectly considered as “knowledge structures”. In terms of readership too, a multidisciplinary audience not familiar with a particular genre can be helped by an explicit “access structure” or one that is already familiar to them (e.g. headings, glossary, index, etc.).

22 For professor of ICS Yves Jeanneret (2015), their first aspect is a “radical popularisation”*. They are a “cultural filter”* not based on a curriculum but on curiosity. By analogy it is like a map “a device to miniaturise knowledge”*. Second it is a “track of usage”* because those who recommend a place must have visited it beforehand

23 “Even though our relations to experience is often (and increasingly) mediated by visual format and images, the bias against visual forms of knowledge production is longstanding in our culture. Logocentric and numero-centric attitudes prevail.” (Drucker, 2014)

24 Yves Jeanneret chose to study guidebooks because they raise critical issues about supposedly “users’ manuals” for a cultural practice and pushes writing to its margins where “*reading/writing* goes hand in hand with *getting things done*”*. The author is critical of the “tyranny of the layout” (he quotes his fellow professor of ICS Annette Béguin-Verbrugge).

that “we need a theory of the ways interface produces subjects of enunciation”, I suggest that ICS professor Emmanuël Souchier’s editorial enunciation might be it (see my development in Chapter 7, “Understanding is learning”). In addition to a theory, a better practice of knowledge design is needed²⁵.

2. The phygital context of publishing

Probably the most dramatic factor affecting publishing is the rise of the Internet during the twenty-five years since 1995. According to the Internet World Stats, access to the Internet has grown from 16m users (0.4% of the world population) to 4.5bn (58.8% of the world population) in June 2019.

2.1. What is phygital?

In the wake of Digital Humanist Milad Doueihi (2013), digital is considered as an integrated cultural (electronic²⁶) and technological (computing) phenomenon. This integration is the essence of publishing in a digital context; i.e. how should form and function be integrated in a medium (or in the various media of a “phygital” ecosystem) for maximum efficiency? The emerging concept of phygital was first coined by Australian marketing agency Momentum in 2013. It refers to a consumer experience which, for Van Tichelen in his Masters thesis in Business (2019), satisfies the four criteria of taking place in a physical location, engaging the customer, relying on digital technology (e.g. AR or VR) and personalising the user experience; and it is part of an “omni-channel strategy”²⁷.

My definition of “phygital” is based on the same four criteria mentioned by Van Tichelen and also draws on the concept of *transmedia* which is similar to that of “omni-channel strategy”. Applied to media, the concept of omni-channel translates as transmedia, and the concept of phygital for knowledge books is defined as a mediated engaging experience designed with digital technologies (this digital throughput can materialise in digital and/or physical outputs) and enabling particular readers to choose their preferred reading mode (electronic and/or printed, and linear and/or modular). This interpretation of “omni-channel strategy” as a media process of knowledge design is based on the more interactive concept of transmedia (rather than multimedia or cross-media) on which I will elaborate in this dissertation.

25 For Design theorist Cross, particularly as innovation is concerned, “it used to be that theories were produced in academia and then adopted in industry, practice now often leads [...]. In some cases it seems that academia is not paying enough attention.” (1991)

26 By extension, a reference to an “electronic information age” could be drawn by analogy to how Jeffrey T. Schnapp and Adam Michaels referred to the “electric information age” of the 60s [and this period could be stretched until the 90s] (*The Electric Information Age Book*. coll. “Inventory Books”. US: Princeton Architectural Press, 2012).

27 Interestingly, as part of his assignment, this student created a knowledge artefact which he called the “phygital factory” in order to create a community of people interested in this concept (e.g. “professionals, sponsors, students, and so on”). The phygital factory platform was meant to be accessible thanks to SEO and to give access to a definition, a literature review, a portfolio of projects, a forum and a member’s section. The phygital factory platform was easily found on search engines, but the website was no longer accessible as of 30th March 2020.

2.2. Have books been made obsolete by digital?

From the 1990s to the mid 2000s, digital was seen as a threat to the publishing industry and more specifically to books. For example, the back-cover text of the two influential North American media experts Nicolas Negroponte (MIT) and Geoffrey Nunberg (Stanford University) published in the mid 1990s started with the following dramatization: “The book you are holding is probably obsolete”²⁸ and “Does the book have a future?”²⁹. By the mid 2000s, the debate about the obsolescence of books was less dramatic and revolved around the replacement of p-books by e-books. The strategy of one of the most important supplier in the printing and graphic art markets, Adobe, was based on this assumption. This company edged its bets and “embraced the model of cross-media publishing”³⁰. As a result, InDesign was released in 2000 as a hub “that spanned print, Web, and even wireless communications” and supported both Adobe’s proprietary page format PDF and open structured format XML.

The evolution was not the same amongst the different sectors of publishing and the various publishing formats. The tipping point between printed and e-articles in the scientific journals market was reached around 2000. By the end of the 2010s e-documents probably amounted to more than 80% of the scientific articles (but some journals have continued to offer a print edition). In the trade market, Amazon launched the first Kindle in 2007 and popularised e-reading devices for the general public. The nascent trade e-book market grew fast for ten years and seemed to have plateaued by 2015 at around 15% in the US and the UK, and at less than 5% in France (and also in Germany for example). When they have a choice, today’s users tend to adopt a strategic approach of the e or p formats (see Chapter 7, «How do p-books compare to e-books?»).

28 Negroponte, Nicholas. 1995. *Being Digital*. Vintage Books. US.

29 Nunberg, Geoffrey, éd. 1996. *The Future of the Book*. University of California Press. Berkeley and Los Angeles, CA, USA.

30 Pfiffner, Pamela. 2003. *Inside the Publishing Revolution. The Adobe Story*. Peachpit Press. Berkeley, CA

Chapter 3.

The two research questions

Since knowledge *design* is my preferred term over knowledge book *publishing*, my first endeavour should be to explain why; i.e. to define this new paradigm, and to develop how it could be fostered in order to stimulate innovation in publishing. For this, I need to propose a theory, the Knowledge Design Theory. The *raison d'être* of this explanatory framework is to understand knowledge design. But the purpose of knowledge design is to create knowledge books and the purpose of a knowledge book can be seen differently by its author(s), its readers and the publishing stakeholders.

So my second endeavour is to facilitate and enhance communication between the creators, the producers and ultimately the recipients of knowledge books. This is the purpose of the proposed Publishing Model Canvas. This canvas is a representation of a communication process. Semiotics is particularly apt at creating and manipulating such models. AI has increasingly been providing solution (unsupervised in the case of information overload or supervised by operators in the case of fake or irrelevant information) to two of the three main problems of the digital information society, but it has been unable to cope with the delinearisation of time and the necessary quality of the human experience. It is this scope that the Publishing Model Canvas is designed to address.

1. What theory for knowledge book publishing?

1.1. How can a theory help to innovate in publishing?

Publishing houses have been paradoxically rather conservative even though, as part of a creative industry, they are supposed to be continuously producing valuable novelties in order to thrive. A new paradigm is needed to think about publishing more creatively and the concept of “knowledge design” is promising. This term was forged by US digital humanists, and namely by Jeffrey Schnapp, in 2014 in the context of the “zombie” sector of academic publishing³¹ in North America.

I propose to generalise the concept of knowledge design and to design a theory of innovation around it. This theory should encompass the two features of innovation which are creativity and social utility. In terms of creativity, this theory could shed a new light on Edgar Allan Poe’s 1841 aphorism that “the ingenious are always fanciful, and the truly imaginative never otherwise than analytic”. As far as social utility is concerned, it is never a clear-cut case of innovating for the sake of innovation. An innovation theory that applies to publishing should explicitly bind knowledge and speculation, innovative abduction and analysis and disclose how they bring value.

31 Fitzpatrick, Kathleen. 2011. *Planned Obsolescence. Publishing, Technology, and the Future of the Academy*. New York University Press.

To find out more:

«Chapter 9.

The purpose of the KDT»

«Chapter 11.

The purpose of the Knowledge Design Theory»

1.2. Can knowledge design be articulated with theories of knowledge and of creativity?

The Design Theory posits that knowledge is a form as well as a content, but also that interlinking prescriptive knowledge Λ with descriptive knowledge Ω produces new knowledge (either by “exaptation”, “improvement”, or radical “true invention”). The C-K “theory of relations” focuses on a knowledge space K (which is not detailed into Λ and Ω) and describes a concept space C and the heuristic interactions between C and K that “produce new objects and fresh knowledge”^{*}.

Both these theories can be articulated with the Actor-Network Theory (ANT) in order to compose a Knowledge Design Theory that encompasses the knowledge book and all the mediators involved in publishing. The aim of these mediator-designers (designer-authors, designer-publishers, and designer-managers) is to add layers of value to knowledge design. A convenient representation of these layers is rendered by the step-by-step ascending mode of the Design Ladder; i.e. from the knowledge books themselves to the publishing house that publish them overall.

To find out more:

«Chapter 10.

The scope of the KDT»

1.3. Is design thinking a relevant approach?

The problem with the traditional publishing theory is that it tends to be descriptive, linear and product-oriented. Its first step is editing as the preparation of a book, the second is publishing as the dissemination of the book, and there is no feedback between phase 1 and phase 2. In our postmodern world and within its VUCA phygital context, design is desirable for publishing, and thinking³² about its present and future is vital if it is to endure.

Publishing is a complex industry and complexity is better handled by design, as it is fit to handle “wicked problems”. Innovative publishing of books could be fostered by design thinking. Implementing this methodology needs not come at the cost of a disruption but could be achieved through adaptation. Knowledge publishing has traditionally been the trade of “knowledge workers”³³ who “problem-solve by analysis” and who should learn to work with, and work as,

32 For professors of Design Rachel Cooper and Sabine Junginger, design thinking encompasses all the three qualities of thinking; i.e. thinking *of* “imagining, visualizing, dreaming up”; thinking *about* “to consider, to reflect, and to deliberate”; and finally thinking *through* “to understand, to grasp, to figure it out” (2009).

33 Drucker, Peter. 1996. *Landmarks of Tomorrow: A Report on the New “Post-Modern” World*. New Ed. New Brunswick, N.J., U.S.A: Transaction Publishers.

designers who “problem-solve by synthesis”³⁴. Richard Florida’s stance³⁵ is that knowledge workers will not be replaced by a spontaneous generation of the creative class, but that they could, and should, be encouraged to unleash their creativity. One of the tenets of design thinking is that “everyone is creative” (Ideo, 2015, *The Field Guide to Human-Centered Design*).

In practice, design thinking methodologies such as the Double Diamond that alternates longer period and sprints³⁶ formalised by iterative cycles of divergence and convergence help to emulate ambidextrous thinking. Design thinking also helps implementing the paradigmatic shift from the product (the book) to the user³⁷ (the reader) in order to focus on the social utility and symbolic value of this artefact without neglecting the quality of its informational content; i.e. a shift from information to communication.

To find out more:

«Chapter 8.

The framework of design thinking»

«Chapter 11.

The purpose of the Knowledge Design Theory»

2. What is the purpose of knowledge books?

2.1. Why do authors create knowledge books?

Authors write knowledge books because they wish to communicate their knowledge to other people. Some are overwhelmed by the importance of the message and tend to ignore McLuhan’s mantra that “the medium is the message”. In addition, and because it has always been a difficult achievement, some authors may care more about being published than about publishing³⁸. Conversely, other authors, who are particular about how their books are edited and designed and who have the capacities to self-publish, choose to forego publishers altogether. A minority even set up their own publishing operations.

34 Cross, Nigel. 1982. “Designerly ways of knowing”. *Design Studies* 3 (4): 221-27.

35 Florida, Richard. 2002. *The Rise of the Creative Class And How It’s Transforming Work, Leisure, Community And Everyday Life*. New York, NY: Basic Books.

36 Sprints are a popular feature of design and so are accelerations such as what Designers like Dörner describe as a “dynamics of thought” of “sudden insights” which is a “rapid and partially unconscious recombination of images” (1999, “Approaching design thinking research”) that comes “in a flash” according to Peirce in what Jürgen Habermas called *innovative abduction*.

37 “Design ethnography” is a long process of what Anthropologists like Marietta L. Baba describe as a thorough understanding of people “not simply as consumers” (2014, *Handbook of Anthropology in Business*).

38 For professor of Typography and Graphic Communication Robert Waller, many authors are “indifferent to the visual form of their work” or “capitulate to the forces of house style” (1987, “The typographic contribution to language: towards a model of typographic genres and their underlying structure”) and Publishing specialists Elizabeth Guffey, Adam Michaels and Jeffrey Schnapp reckon that most authors “don’t know what actually goes into the making of a book” (2014, *Reinventing the Paperback Book in the Digital Age*).

In any case, authors experience a shift when they are presented with the first typeset proofs. This change of representation from the linear vertical scroll of word processing software to the spatiality and recto-verso of the codex alters the perception of their work. It entices the authors to reconsider their work “with a reader in mind”³⁹.

To find out more:

«Chapter 7.

The framework of publishing»

2.2. Why do readers get, read and/or recommend knowledge books?

The three characteristics of the “client” (i.e. the reader, the payer and the promoter) can pertain to the same person at the same time or relate to different clients (e.g. textbooks would possibly be read by students, purchased by librarians and recommended by teachers). In any case, readers should be prioritised and their feedback epitomised because word-of-mouth and actual first-person accounts (and their modern equivalent of posts on social networks) are more potent contributors to the success (or not) of a book than sponsored advertising.

To find out more:

«Chapter 7.

The framework of publishing»

2.3. How do publishers value knowledge books?

Publishers are aware that customer-centric innovation (creative novelty that brings value to the users) must be the core of their strategy. As Benoit Epron and Marcello Vitali-Rossati⁴⁰ have observed, disruption—“the worst case scenario of disintermediation”^{*}—has not happened but publishers—who are not designers—need to acquire and improve editorial design skills (i.e. a mix of knowledge design, information design, experience design and graphic design).

The business of knowledge publishing is not like any other businesses: it is at the same time vocational and professional. On one side, it is based on the commerce of ideas which is geared towards the advancement of knowledge. On the other side, it is a business and, as such, it has to generate value. Publishers, who had traditionally considered that content is the main driver of their business, have pondered and reconsidered this assertion⁴¹. They have come to recognise a

39 Burdick, Anne, Johanna Drucker, Peter Lunenfeld, Todd Presner, & Jeffrey Schnapp. 2012. *Digital Humanities*. The MIT Press. Cambridge, USA.

40 Epron, Benoît & Marcello Vitali-Rosati. 2018. *L'édition à l'ère Numérique*. La Découverte. Paris, France.

41 ICS professors Philippe Bouquillion, Bernard Miège and Pierre Moeglin have shown that publishing has become “over-determined”^{*} by symbolic value. Therefore books have become *credence goods* and *experience goods* characterised by an overarching “search for novelty”^{*} (2013, *L'industrialisation des biens symboliques : Les industries créatives en regard des industries culturelles*). Professor of Sociology John B. Thompson, describes publishers as “janus-faced organizations” and it seems that, for knowledge books, competition in the *market for customers* has become more important than competing in the *market for content* (2010, *Merchants of Culture. The publishing business in the twenty-first century*).

dichotomy that is not so much between form and content⁴² than between form and function⁴³. This conundrum can be solved by the two divergent means of either intuitiveness⁴⁴ or digital literacy⁴⁵.

Knowledge books should also be infused with a communicational momentum. This “mediativity”⁴⁶ can also be understood as transmedia storytelling. In other words, the book is a medium that should be designed so that its inner content is well represented and, at the same time, the book-as-a-medium should be presented through and interlinked with other media (newspapers, magazines, catalogues, book reviews, social networks, search engine, book shops, libraries, etc.). Through them the whole story becomes greater than the sum of its parts.

To find out more:

«Chapter 7.

The framework of publishing»

2.4. How can stakeholders cooperate efficiently?

Research into how to do design well is useful. Reducing this knowledge to methodologies is useful. But teaching these techniques as if they were the essence of design, is profoundly misleading. (Faste, 2001)

42 Some, like Michael Jubb (who used to head the Arts and Humanities Research Board and is now director of the Research Information Network) report that publishers insist that *content* “is the main driver of their business” (2017, “Academic Books and Their Future”) while others, like professor of creative enterprise and publishing at the London College of Communication Franca Hall, recommend a shift towards “innovating around *form* rather than content” (italics added—2019, “Organizational structures in publishing” in *The Oxford Handbook of Publishing*).

43 Johanna Drucker insists that a book is not defined by what it is but by what it does (its function) and how well it achieves it (its form). In the same vein, Typographer Paul Stiff’s describes his publishing activity as an attempt to “materialise through the form and substance what is advocated by the text itself”* (2014, “La publication de la recherche en design : la qualité oubliée”).

44 Intuitiveness is a cultural skill facilitated by an easy-to-understand User eXperience (UX). This cognitive operation is related to what Souchier (2012) calls “the oblivious memory”* and allows readers to save a lot of psychic energy. Intuitiveness is often asymmetric and achieved through specialisation. Typically, designers would formalise an UX on a professional software developed by commercial publishers for users who do neither have capacities in design nor in development or in digital graphic creation or typesetting;

45 Digital literacy requires an effort from the user to control and manipulate media. Their underlying User Interface (UI) have to be accessible and the “infraordinary” (Souchier, *ibid.*) should be uncovered. For Design researcher and Digital Humanist Anthony Masure (2017), understanding and deconstructing digital systems is an aim in order to free digital media from economic strategies. In other words, this is hacktivism as it is practised by hackers and according to their ethics. This practice implies that both producers and users are equally skilled. For Sociologist co-authors Isabelle Berrebi-Hoffmann et al. (2018) this ideal-type is a legacy of the hackers’ history, of their coding practice, and of their “counter-cultural commitment”*, while makers are more technophile and integrated in the commercial world. But actually, hackers and makers overlap each other.

46 The communicational momentum of a narrative is what professor of ICS Philippe Marion calls “mediativity”* in his 1997 article, “Narratologie médiatique et médiagénie des récits”.

The publishing trade, publishing houses and imprints are often metaphorically depicted as a chain. But the most innovative industries and firms are often described as networks and/or open organisations that can organically adapt to their ecosystem. So, a starting assumption is that publishing houses and imprints are not yet best managed to thrive in the everchanging phigital environment; i.e. to innovate. In other words, their chains should be broken, and knowledge books should not be construed and conceived as links in a chain but rather as prototypes designed as opportunities to prosper in an ecological niche within the greater ecosystem of the publishing market.

It is paradoxically not rational to manage publishing houses rationally and expect them to become more innovative. The stakeholders' drive to innovate should not be hindered, and particularly not so by complacency⁴⁷. On the contrary, the intersubjectivity of the actors (authors, publishers and readers) should be geared towards *communicative action*⁴⁸ as an "orientation to reaching understanding [and] success" through innovation. For Innovation director Megan Neese, there is indeed a shift in what organisations focus on, and accordingly communication has become a major concern in interdisciplinary teams because "Marketing teams talk about consumers. Research teams talk about respondents. Engineering teams talk about targets. Designers talk about users"⁴⁹. In publishing houses and imprints, communication between the inner stakeholders (editors, illustrators, typesetters, designers, publishers, etc.) should be improved in order to serve their external stakeholders better (authors and readers essentially).

Stakeholder-mediator-designers follow a heuristic process and should adopt an explicit goal-oriented canvas in order to help them discuss and construct a common model of their representations and foster communicative action. They need a specific publishing model that goes beyond business models and a method to cope with complexity. My proposed method draws on the Knowledge Design Theory. Discussions amongst mediators can revolve around, and be visually formalised on, the Publishing Model Canvas. In my own experience, which has been corroborated by the cases on *Version 0* of Écridil, the Jstor Labs and Cambridge Core, creative discussions and operational negotiations are more efficient when they are framed by models (e.g. ranking of clusters, Value Proposition Model, "how to" formulation of brief, prototype).

To find out more:

Chapter 8. The framework of publishing

«Chapter 14.

The benefits and limitations of the PMC»

«3. How to use the PMC?»

47 As early as 1961, Engineer Marples noticed that "a designer is apt to become enamored of his own solution". In a similar vein, Anthropologist Simon Roberts explains that "models have a power that is akin to that of magic [because] they are technologies of enchantment" and it is therefore worth reflecting that "in pursuit of certainty in the face of uncertainty, [...] the enchanter [sometime] becomes the enchanted" (2015).

48 According to Philosopher Jürgen Habermas in his Theory of Communicative Action, "Reaching understanding" is based on the three ethical precepts of "true", "right" and "truthfully expressed".

49 Megan Neese, "How 'the User' frames what designers see: what cultural analysis does to change the frame", in Denny, Rita M. & Patricia L. Sunderland (éd.) 2015. *Handbook of Anthropology in Business*. Routledge.

2.5. What is the problem in today's digital information society?

When so much information has become ubiquitous on the Web and so many books are available in libraries and bookshops, is there still a problem to access knowledge and is there still a need to produce even more knowledge? There actually is not one problem, but a set of three main issues hindering access to knowledge: information overload, irrelevant and/or inaccurate data and possibly fake news, and delinearisation of time.

The two first issues have to do with the quantity and the quality of information. Machines have proved apt at processing huge quantity of data at amazing speed in ways that humans can not even dream of emulating. People are not out of the loop since they are still training machines and monitoring their output, and humans have proved resilient where distributed collective intelligence can be exercised, but artificial intelligence (AI) has progressed tremendously and the age of singularity⁵⁰ has been prophecised to happen in the near future. For instance, after their first reference book has been written by an AI (see Chapter 22), publisher SpringerNature mentioned that they need to work on Explainable AI (XAI) in order to understand the AI's reasoning.

Outrightly fake news are still currently checked by human moderators (with more and more documented undesirable effects on them) on social networks such as Facebook because automated fact-checking has not proved good enough. More processing power might not ever be the answer to this delicate issue. Sociologist and Anthropologist Bruno Latour has argued that "facts have become *issues*" and Digital Humanist Johanna Drucker's leitmotiv is that data are *capta*. In other words, knowledge is ambiguous and data need to be discussed and contextualized if they are to make sense.

The third issue is on one hand about the quality of the human experience of accessing knowledge which, ultimately on the side of readers, is learning. But, on the other hand, delinearisation of time also affects how authors and publishers "produce" knowledge. Data are an easy-to-mine commodity but it still takes time to refine them into something as valuable as information (for research, planning, consultation of archives, historical perspective) and even more skilled effort to make sense of them and produce knowledge out of it.

In summary, Book Historian Robert Darnton sees a future for publishers who "provide services that will outlast all changes in technology" (2009). These services would be selecting texts, editing them, designing them to be readable, and bringing them to the attention of readers.

To find out more:

«3. A model for knowledge design of knowledge books»

"Chapter 15.

The three typologies of the knowledge design of knowledge book"

⁵⁰ The age of singularity refers to the idea that intelligent machines can design intelligent machines smarter than themselves and draws on the ideas of authors like Futurologist Ray Kurzweil who published *The Age of Intelligent Machines* (1990), *The Age of Spiritual Machines* (1999) and *The Singularity Is Near* (2005).

2.6. On what principles should a publishing model be based?

How do we model and develop the tools, translational arts and techniques, the critical and curatorial practices, the modes of communication and participation that bring information to bear meaningfully on and in the world? (Schnapp, 2014)

The Publishing Model Canvas is based on five principles (innovation, communication, knowledge, visualisation, semiotics). The founding fathers of semiotics, Linguist Ferdinand de Saussure and Logician Charles S. Peirce, both stated the principle that communication can not be unmediated. The necessary book mediation is performed by reading and is essentially visual⁵¹. Representations allow the reader to imagine what the concept presented looks like and to match this symbolised content with an image in his mind. This pattern recognition is inherent to how the human brain works and is much more efficient, in terms of psychic energy, than abstracting. But, because all images are polysemic, text is needed to *anchor*⁵² the representations of knowledge.

Knowledge books usually include representations⁵³ such as diagrams. Diagrams are an example of visual thinking (amongst others like comics, sketches, etc.) which are used because they facilitate the exposure of convoluted thinking into a simpler form for authors, and also because they contribute to the symmetrical apprehension of complex concepts for naïve readers. Philosopher Jane Forsey elaborated that the indetermination of the meaning and the form in efficient representations blurs the distinction between the aesthetics and the technology of communication⁵⁴. Graphic design of knowledge does not replace writing, but it augments written arguments with another material layer of thinking.

51 Concepts can be intellectually comprehended through self-supporting descriptions and definitions but these demonstrations require an effort to be understood. An argument that would only rest on demonstrations might drain the reader of his psychic energy. In order to avoid this exhaustion, one of the principles of rhetoric is to alternate demonstrations with representations. Representations (e.g. metaphors and diagrams) draw on experience and analogies (i.e. verbs such as recall, refer, remember, remind, represent etc. are built with the prefix re- “again” and imply the mental process of comparing something that comes up, and that might not be known, with something that is already known).

52 In “Rhétorique de l’image” in 1964, Roland Barthes contended that the main function of captions is to anchor images. Anchoring is the interpretation favoured by the author, a sign of his intended control over the meaning of the image. In this case, the text does not convey information, but instructions for reading the image. The information load is carried by the image, and because the image is analogic, information is “somehow lazy”*.

53 For scientists and illustrators Felice C. Frankel & Angela H. Depace “a visual representation of a scientific concept (or data) is a re-presentation, and not the thing itself” (2012, *Visual Strategies. A Practical Guide to Graphics for Scientists and Engineers*). Digital Humanist Johana Drucker delves into visual representation, and the more specific case of diagrams which “performed the act of reasoning, they did not represent it after the fact” (2014, *Graphesis—Visual Forms of Knowledge Production*).

54 The aesthetics and the technology of communication are symbiotically related in our judgements of design in the Kantian concept of *dependent beauty*. It is “thick” because it is based on “an experience that includes knowledge of the thing in question” (Forsey, Jane. 2013. *The Aesthetics of Design*. Oxford University Press. New York, USA).

To find out more:

«Chapter 13.

The scope of the PMC»

«Chapter 15.

The three typologies of the knowledge design of knowledge book»

Chapter 4.

The disciplinary framework

Design, Semiotics and ICS have affinities because of their history but, also more fundamentally, because they consider the same objects of research and offer different perspectives to triangulate their analysis. In the literature, there is (to my knowledge) no interdisciplinary merging of the three fields of ICS, design and semiotics. Semiotics and ICS have strong links with each other, but their methodological corpuses remain distinct. In Design and ICS, researchers broadly disagree that their respective fields of research could be qualified as interdisciplines with an object (i.e. this object would be the medium for ICS and the artefact for design). Theorists acknowledge that these three disciplines borrow concepts and methods from each other as well as from other disciplines, but they eventually metabolise them into their own fields of study. The three fields of ICS, Design and Semiotics remain distinct but can be articulated by a multidisciplinary approach—consilience—in order to work on research questions centred on knowledge design and knowledge books. For instance, Digital Humanist Jeffrey T. Schnapp forged the concept of “knowledge design” (on which I will expand in “Literature review: publishing as Knowledge Design”, page 146) in order to meet the challenges of communication in a digital age (in Guffey, Michaels, & Schnapp, 2014). Along the same lines, Semiotician Bernard Darras and Philosopher and Design researcher Stéphane Vial asserted that “acts of design are in themselves acts of communication”^{*} because a well-designed artefact “speaks by itself”^{*} (2017).

Schematically, the purpose of design is to create artefacts and processes for people that combine form and function; (Peircean) semiotics strives to analyse the relationships between objects, signs and interpretants; and ICS explores the systems of mediators and intermediaries and how they communicate (or not) between themselves, with the other systems and within an ecosystem.

1. Why Design?

1.1. Artefact design of the knowledge book

The two sides of design are important. On one side it can be understood as conception⁵⁵ for the authors (writer, illustrator, editor, designer, publisher). On the other side it is affordance⁵⁶ for the readers. In both cases, they are active processes engaging the participants.

55 Design as conception refers to what Forsey (2013) calls a desirable approach to create an artefact—such as a book—that “performs its function with excellence and style” through what Faste (1994) calls “ambidextrous thinking”.

56 For Forsey design is “primarily functional, meant to be used rather than contemplated” and for Drucker the book is “produced new by the activity of each reading”.

1.2. The process of book publishing as knowledge design

Expertise in design is a fundamental requirement of a publishing business, as design adds value at all levels: at brand level by projecting values and quality; at list and series level by supporting recognition and discoverability; and at individual book level by enhancing the reader experience. (Luna, 2019)

I will draw on a layered approach of design to structure my analysis:

1. of the world of publishing and publishing organisations;
2. of book publishing and books as artefacts.

The second of the four steps of the Design Ladder (it will be explored in greater detail later in this thesis, see Figure 38) beyond *no design* (i.e. whether function or content, exclusive of each other) is *style* (i.e. formatted content—function + style). The third step, climbing up the Design Ladder, is about the *process*. The fourth and ultimate step of the Design Ladder is *strategic* innovation at corporate level.

The “global village” prophesied by McLuhan in the 60s became a sweeping fact of life with the emergence of the Web in the 90s and the beginning thereof of the digital era. This era heralded a Volatile, Uncertain, Complex and Ambiguous (VUCA⁵⁷) environment which has particularly affected the world of media. Design and semiotics share a multiscalar approach.; i.e. artefacts and processes can be studied at various scales, and these different scales are interrelated. This is my approach of the issue of publishing. I have identified four scalar levels for this complex system (see Figure 3):

1. At the largest scale, the smaller systems of publications in general and of books in particular can be studied. My particular focus is on books as “knowledge publishing projects”. By analogy books could be considered as buildings and hence publishing projects as architectural design. In this metaphor, it is also important to consider books as enclosed⁵⁸ (or finished) as buildings are.
2. In the same metaphorical domain, programs can be associated to urban planning. At the smaller scale of a town or a neighbourhood, architectural projects can be integrated, but not necessarily. Building architecture and urban planning can also be interdependent (as publications can be integrated in a series, a Web platform or a publisher’s list) or independent. At this scale, they are defined as “knowledge publishing programs”—as these programs are ongoing and meant to evolve over time, whereas book projects have a beginning and an end.

57 The acronym VUCA was forged in the military by the US Army to describe the emerging strategic world post-USSR. It migrated to the civil sphere where it was adopted by management thinkers and leaders to describe the increasingly globalised business world from the 90s under the influence of digitisation.

58 I do not intend to participate here in the specialists’ debate about whether e-books are enclosed or open (“*closure*” in French). I pragmatically observe that the bulk of the e-books on the market are orthogonal to print books and therefore closed in the same manner. In this respect, and on this specific issue, mine is not a speculative approach.

This dissertation is focused on these two above-mentioned levels and their interrelations. But it is also important to bear in mind the general perspective. Therefore, the relations between publications and/or programs with their organisation and professional background, on one hand, and with clients and the general public, on the other, have to be considered.

3. There are direct performative interactions between imprints or publishing houses and the books they publish or their platforms (e.g. Cambridge Core, Jstor Labs TopicGraph) or series (e.g. *Nature*, *Science*, *The Conversation*) that they launch and maintain. This has to do with how the projects and the teams are managed. Books, platforms, series and publishers' lists are obviously also designed to interact with clients in all their three dimensions⁵⁹ (user, buyer and promoter).
4. At the lowest scale, there are indirect interactions—influences—of the other players on the market and of the environment in general.

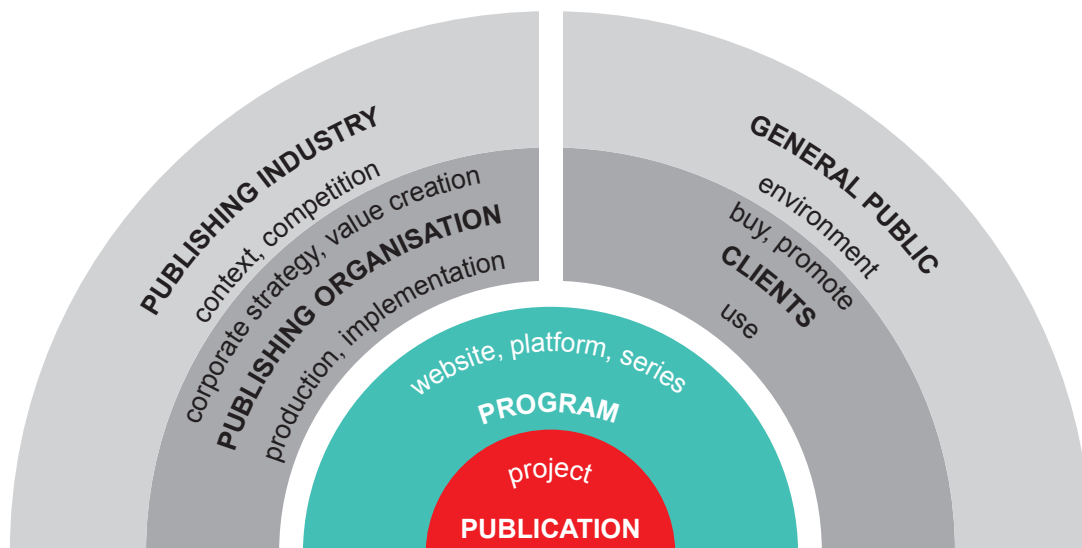


Figure 3. The design scales of the complex system of publishing, CC BY-NC 4.0

2. Why Semiotics?

2.1. The transdiscipline of semiotics

A parallel view of design and semiotics draws on their young history since World War II and on “their transdisciplinary situation” (Gonzalez, 2012). Historically the definition of semiotics can be ambiguous and drew practicing semiologist Jean-Marie Floch to ponder: “is there a dif-

⁵⁹ Users should be considered first. They are more specifically readers and contributors (and can be both simultaneously) who can have various degrees of activity and involvement—from quasi-passive browsing up to co-creation or co-operation (UGC). Users can also be buyers and promoters, but not necessarily, and these other two dimensions need to be addressed too. For example books can be bought by libraries (buyers) to be read by end-users. Another example, are teachers in France who (as promoter) chose a textbook for their class which is then bought by regional institutions for the teacher’s pupils.

ference between *semiology* and *semiotics*?”* (1990). This rhetorical question makes sense in the French context since ICS do not exist as a disciplinary field elsewhere. Semiotics was on one hand the term chosen by American logician Charles S. Peirce to describe his general science of the signs. On the other hand, R. Jakobson, C. Lévi-Strauss, E. Benveniste, R. Barthes and A. J. Greimas also chose the term semiotics (which was thought of as more international) to name the Cercle parisien de la sémiotique they founded in 1967 to promote the Saussurian legacy. For semiolinguist Driss Ablali (2007), until the 80s semiotics in the US referred to Peirce or Morris while in Europe it hinted at Greimas’ structuralism. For semioticians Karine Berthelot-Guiet and Jean-Jacques Boutaud (2015) the debate over the use of semiotics or semiology is over since they have actually been used indifferently and it is all the best for a discipline which is “arousing desire but has tended to quickly cool passion down” with unnecessary complication.

Accordingly, professor of Semiotics Michela Deni used either terms after Umberto Eco’s definition as “the science which studies all the cultural phenomena as if they were systems of signs [...] i.e. as culture fundamentally is communication”* (2015). In France, the paradox is that “semiotics as a discipline does not exist”* but ICS still needs to borrow tools and methodologies from semiotics that “are easily articulated”* along with those of other disciplines such as psychology, sociology or economics. Researchers in ICS have mainly used semiotics for purposes related to the internal coherence of systems. Semiotics is analytical and helps to understand books as systems of signs, objects of use that are aesthetically dependent.

As per Eco’s definition, semiotics is a field including all the objects *of use* but excluding those *to be contemplated*. This latter term of the definition of semiotics also hint at a Kantian understanding of *The Aesthetics of Design* (Forsey, 2013) as *dependent beauty* rather than *free beauty*.

2.2. Design is doing, semiotics is understanding

In disciplinary terms, beyond aesthetics, there also is the semantic question (i.e. of the meaning of objects). Research was undertaken at the Hochschule für Gestaltung (HfG) of Ulm under the helm of Tomás Maldonado in the late 50s in order to devise semiotic tools for the designers’ own use. Deni (2010) went one step further than the Ulm school with her similar endeavour to “translate the conceptual contribution of semiotics for designers”* in order to design “objects able to communicate efficiently”*. Designed artefacts are signs because they are “meaningful things [...] made to reflect status, personality, taste”, they are “embodiments of myths, ideas, and ideologies” (Louridas, 1999).

Some researchers in Design (Mitchell, 1993; Monö, 1997; Kazmierczak, 2003; Redström, 2006) have been influenced by the structuralist approach initiated by the Saussurean theory of a two-sided entity consisting of a signifier (the image referring to something) and a signified (the concept pointed to by the image)⁶⁰. There is a significant literature in design research about this

60 The Saussurean approach of signified/signifiers was later revived by Roland Barthes’s *Mythologies* (1957), Jean Baudrillard’s *Système des objets* (1968), and Claude Lévi-Strauss’ analogy between an image as a concrete object, and a concept as an abstract entity.

“dual vision of objects as a sign with a symbolic part” (e.g. Cockburn, 2000) which, for professor of ICS Annie Gentès, are “similar to Greimas’ actancial model”^{*} (2008). The debate in the design community is less about the relevance of semiotics than between structuralism on one hand (i.e. “the dual vision”^{*}, Gentès, 2008) of Saussurean semiotics, and generativism on the other hand (i.e. “the three-way relation” between the sign, its object and its interpretant, “the syntactic, pragmatic, and symbolic dimension of the Peirce model of semiotics”, Borja de Mozota, 2008, see Figure 4A).

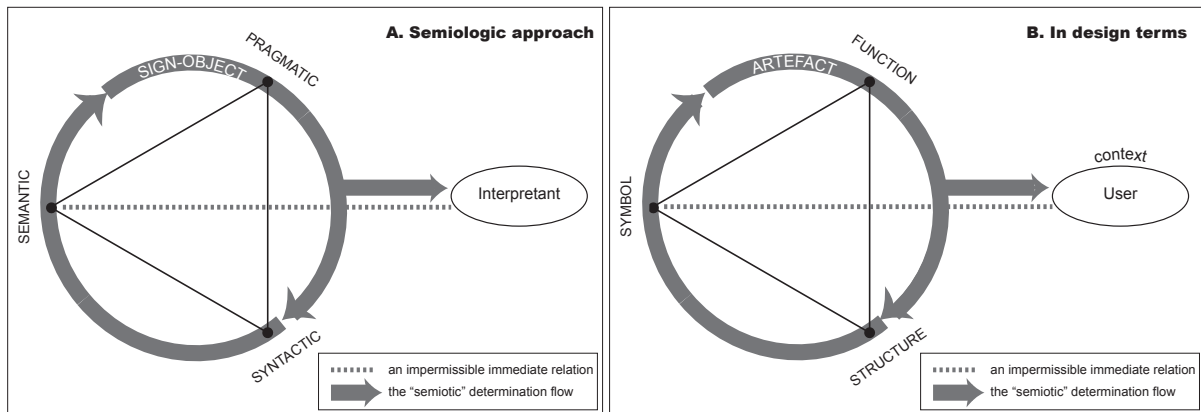


Figure 4. From object to system: the sign-object in semiology and the design artefact, CC BY-NC 4.0

Books being objects, another relevant parallel between design and semiotics can be drawn from the following analysis of semiologist Roland Barthes. In his view (*L’Aventure sémiologique*, 1985) the word “object” has three connotations. First it has *existential* connotations as an inhuman thing which “stubbornly exists”^{*}; but the object also has an *aesthetic* connotation involving “a kind of essence to be reconstituted”^{*} or an absurd “sense of nonsense”^{*}; and finally this man-made thing has a group of *technological* connotations (i.e. something functional “that serves a purpose”^{*} and “is used to communicate information”^{*}). In design terms, the aesthetic connotation would translate as *form* and the technological connotations as *function*. But since “everything that used to be an object became a system”^{*} (Morin, 1985), the design artefact is better apprehended by Gestalt as a system. A system in which the user understands and interacts with the artefact according to its three dimensions of structure, function and symbol (see Figure 4B). In a Peircean semiotic perspective, the sign-object is interacting with the interpretant through the material medium and vice versa. In terms of design, there is a similar two-way interaction between the user and the artefact through the material medium.

3. Why Information and Communication Sciences?

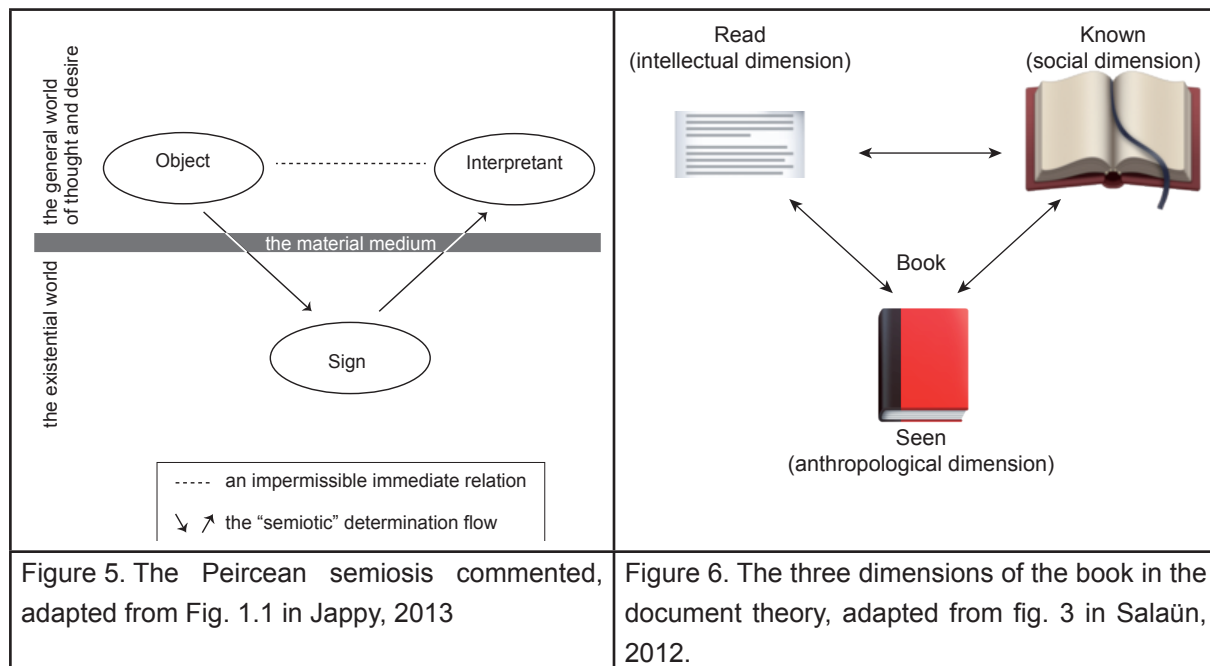
3.1. Information science

Reading a document is etymologically⁶¹ almost a tautology of being taught (i.e. “prepared for a situation” by “teaching”). For professor of Information Science Jean-Michel Salaün a document has three dimensions (see Figure 6). Its social dimension can be defined as acknowledging a “reading contract”*, its intellectual dimension is an interpretation (in order to get *ready* to acquire knowledge), and its anthropological dimension can be traced to a written track⁶² (the social and anthropological dimensions of the theory can be linked to the work of professor of Social Anthropology Tim Ingold).

There are similarities between the intellectual dimension of Salaün’s document theory and the Peircean semiosis (see Figure 5). In both theories, the point of view is the receptor’s (the reader in the document theory and the interpreter in the semiosis). What is shown in the representation of the semiosis is that there is no immediate relation between the object and the interpretant and that the meaning is conveyed through the signs in the material media. The diagram of the document theory shows one such explicitly mediated (anthropological) relationship between the intellectual and the social dimensions through the medium of the book, but it also shows another relationship between these two dimensions. This second relationship can appear to be direct, but it is actually mediated, only it is not explicitly mediated by the medium of the book itself but implicitly by other media (e.g. social media). So, all the relationships between the three elements of the diagram of the document theory should be understood as mediated.

61 Reading (eth. the Anglo-Saxon *ræd* “giving advice or counsel”; for Ingold someone who is *ready* is “prepared for a situation by virtue of having ‘read’ it properly”) a document (eth. *documentum* in Medieval Latin “official written instrument, authoritative paper”; for Salaün what was emphasised was *docere* “transmission, teaching”*)).

62 Ingold explains that the verb “to write” comes from Old Saxon *writan* “to scratch, tear, or score”. In early medieval times, writing was “things incised, scratched, cut, or torn—things like animal tracks, split wood and ploughed furrows”. (2018, “Surface Textures: The Ground and the Page”. *Philological Quarterly* 97 (2)).



In a way, three main issues can be related with Salaün’s argument in *Vu, Lu, Su* (2012; see Figure 7). There are three dimensions to a document, 1. the *anthropological* dimension of reading as apprehending (etym. to “seize *with* the mind”) but it is also grasping and physically manipulating a “material medium” (see Peirce The Peircean semiosis commented, adapted from Fig. 1.1 in Jappy, 2013); 2. the *intellectual* dimension of reading as “getting it”—comprehending (etymologically to “seize *in* the mind”); and 3. the *social* dimension of discussing what was read and thus known (etym. “perceive or understand as a fact or truth”, with the sense of “to experience” as opposed to believe). The experiential part is important as it refers to embodied knowledge which complements the aforementioned intellectual dimension and also connects to the anthropological dimension of the relationship between humans and artefacts. The three dimensions are described as: *seen*: form (i.e. book as an artefact); *read*: text & images (i.e. book as graphically processed information); and *known*: medium (i.e. book as a medium).

Figure 7. An approach of the three problems of media by the document theory

The three problems of media	Document theory		
	Approach	Dimension	Function and form
information overload → cognitive overload	apprehension of the material medium, editorial enunciation	Anthropological (seen)	Creation → formal artefact
fake and/or irrelevant data → cognitive uncertainty	discussion	Social (known)	Transmission
delinearisation of time → splintering of attention	comprehension	Intellectual (read)	Memory → content: text & illus.

3.2. Communication science

Shannon's information theory of the late 1940s translated in book terms as "the message is the content or the text; the channel is the book" (Bhaksar, 2013). There are three problems with this definition. First it does not define "content", secondly it only hints at the necessity of a so-called "channel" without defining what it is, and thirdly it overlooks the form of the book and anything that is not purely "text":

- media theory developed by Philosopher Marshall McLuhan in the 1960s and 1970s posited that the content of a medium is another medium. Anthony W. Hodgkinson's review of *The Medium is the Message* in *AV Communication Review* (1967) went a step further suggesting that "McLuhan is becoming the medium". In other words, the author of "the message is the media" had been *massaged* into the book produced by Agel and designed by Fiore and (a case study is devoted to it in this thesis). Thus, media theory constructs a system of embedded media or boxes-within-boxes. The author would metaphorically be the inner Russian doll, the written text the median doll, and the book the outer visible doll.
- Publishing expert Michael Bhaksar elaborated on the second point—"the channel of the book"—when he wrote that "content only becomes communication with a further intervention; publishing itself". For him, book publishing turns its information content into something more through communication.
- Professor of Sociology John B. Thompson gave a comprehensive threefold definition of a book as "at once a medium of expression, a means of communication and a work of art" (2010). I have already touched on the first characteristic of "medium of expression" in McLuhan's media theory; in point 2 it has been noted that Bhaskar assimilated publishing and communication in the book context; and this third item is Thompson's reference to the form of the book as "a work of art". This last item could be construed as a needed supplement to Shannon's theory on the issue of the form of information that he had, by and large, ignored.

The information theory was a useful abstraction which heralded powerful applications in what MediaLab founder at the MIT Nicholas Negroponte described in the 1990s as the exponential "change from atoms to bits". But this abstraction has its limits when it comes to efficient interpersonal communication. In the introduction to his book *Being Digital* in 1995, he felt compelled to conclude by the following question: "why an old-fashioned book [...] especially one without a single illustration?". His answer for this paradox was threefold. First, "the current interface [of computers] is primitive" and there are not enough digital media in the hands of "those who most need to understand this radically new culture" (e.g. executives, politicians, parents). Second, in terms of content, his experience as a columnist for the magazine *Wired* suggested that "there is a large audience for information about digital life-styles and people, not just theory and equipment". Third, in multimedia representations "less and less is left to the mind's eye. By contrast, the written world sparks images and evokes metaphors that get much of their meanings from the reader's imagination and experiences."

The blind spots of Shannon's theory and the self-admitted shortcomings of digitalisation as dematerialisation by such proponents as Negroponte fifty years later show that information sci-

ence should be complemented by the contributions of communication science, and possibly be paired with it.

3.3. Information and Communication Sciences

Knowledge books are better apprehended by both the information science and the communication science combined; i.e. the French integrative academic discipline of ICS. In their collaborative work on the dynamics research in ICS⁶³, a representative institution of the discipline counted ten domains which became as many chapters in the book. This thesis is directly concerned with five of these domains—strategies, systems and uses of digital; information, documents and writing; design; knowledge organisation; knowledge mediation, education and training—and it draws on ICS research on the following instances and trends:

- Digital literacy and digital culture and their relationships with the bookish culture. The combination of the semiotic complexity of graphic design with the polyphonic enunciation of digital systems;
- The refocusing of information science towards document analysis in its cultural and functional dimensions and the distinction between information and knowledge (information is a pattern, a form of knowledge representation). The domestication of the mind (*raison graphique*) of, and through, writing means that the shift from the material to the digital production and use of content has implied a reshaping of knowledge through the reconfiguration of all the information systems, and of the publishing system in particular. ICS are a potent way to think about this shift through their focus on the technical provisions, semiotics, and social circulation of texts; e.g. the triadic approach of the document as a form, a meaning and a medium (see Figure 6);
- The recognition of the designer as a mediator and the growing importance of design (and of its characteristics of innovation, social utility, etc.) have placed design at the core of ICS. The aesthetical, technical and use dimensions of design are studied as design is construed as communication. The design process itself is an object of study as a social mediator interlinking the stakeholders (e.g. iterations, recursions, feedbacks, co-operations) and, at its higher dimension, as a signifying process. Inventing artefacts can be interpreted as a constructivist epistemology of problem solving and of learning by doing, and design is construed as the project discipline of design thinking. There is a particular connivance between design and semiotics—as design is assigning signs to objects (eth. Latin *de-signare*) and semiotics is a theory of signs. The phenomenological problem of information overload highlights the importance of experience design and of knowledge design. Research on design thinking in the field of ICS are growing as the complexity of the contemporary world has unfolded and they intertwine efficacy, efficiency, technical performance and meaning in order to develop a desire to innovate for the common good;
- The very definition of knowledge (contrasted with such terms as data and information) is an object of study, and so are the processual dimensions of knowledge management and knowledge engineering. In particular, there is a focus on tools to visualise information, on graphic design

63 Walter, Jacques, David Douyère, Jean-Luc Bouillon, & Caroline Ollivier-Yaniv (éd.) 2018. *Dynamiques des recherches en sciences de l'information et de la communication*. CPDirSIC (Conférence permanente des directeurs de laboratoires en sciences de l'information et de la communication).

methods to represent information, and on the informational abilities of users to understand representations;

- The study of knowledge mediation draws on various disciplines such as Education science, Psychology, Sociology, Economy or Computing science which are articulated by the three social, technical and semiotic dimensions of ICS. They also borrow from innovation and design methods such as UX design or design thinking, their focus on the end-users and the involvement of the latter in co-creation. Their objects of study encompass a wide group of concepts; for instance, hybridisation, gamification, digital humanities, scientific communication and popularisation, hierarchy of knowledge, scientific myths, the injunction to innovate and its impact on economic performance.

Books in the digital environment are books-as-media and “the staying power of the old-fashioned codex illustrates a general principle in the history of communication: one medium does not replace another” (Darnton, 2009) because “with every media shift, you gain certain things; you give up others” (Schnapp in Guffey, Michaels, & Schnapp, 2014).

Chapter 5.

My methodology

When I started this research, as a practitioner (with over twenty year of publishing experience) and a consultant (for more than a decade), I started this thesis as an “expert” with what Simon calls “sudden flashes of ‘intuition’”. I acknowledged more or less consciously that I did not precisely know where I was heading. The whole point of undertaking a doctoral research being to learn new things, this heuristic approach meant that I had to leave room for serendipity. As Peirce warned, an abduction “is an act of insight, although of extremely fallible insight.” So, because I started with what Habermas calls “innovative abduction” (typical of an expert) I had to complement these “flashes” with scientific methodologies in order to demonstrate my worth as an aspiring researcher. In a way, I knew that what I did not know was more important than what I knew (or thought I did). But I also knew that the purpose of research is to create knowledge. This was a first “wicked problem” (see definition in the literature review) and a designerly approach helped to overcome it. For my purpose—akin to innovation—, design thinking was necessary but, even construed by Simon as a “science of the artificial”, I was aware that design thinking is not scientific enough to defend a thesis in ICS.

In reality, the plan of this dissertation is neither diachronic nor synchronic. I was faced with a second wicked problem; i.e. how to structure this thesis? Should it be presented as a deductive analysis (cases first, theoretical framework second, and model third) or as inductive (theory first, then model, and eventually cases framed through the model)? In reality, what happened could be more adequately termed as creative abduction. I actually went back and forth between the KDT, the PMC and their application to the case studies on numerous occasions. But, since it was impossible to represent this thought process in a comprehensible form (see Figure 38, the “Design Squiggle”), I decided to blend the scientific inductive approach and the design practice of test and learn in what could be called a generative and pragmatic manner. As a result, the cases are presented after the theory and the model, and the PMC has been applied to each case (except one). In a nutshell, the Knowledge Design Theory was conceived by inductive reasoning, mainly based on two existing theories (the Design Theory and the C-K Theory), and the Publishing Model Canvas is the result of deductive reasoning based on case studies and action research.

1. A diachronic description of my research work

The actual starting point of this thesis was a personal fascination for the *Business Model Canvas*. As a design consultant and as a coach I had experienced its cognitive potential, and as a publisher its success was extraordinary. I wanted to figure out how the simple 9-block canvas artefact could fit into a transmedia ecosystem (website, courses, conferences, workshops, discussion in an active community of practitioners) articulated around a methodologically inspiring book. What I discovered is that the model and the artefact were based

on a theory⁶⁴ proposed by their author, Alexander Osterwalder, in his PhD thesis *The Business Model Ontology. A Proposition in a Design Science Approach* (see «Chapter 15. “Business Model Generation”»).

My learning process as a reader was the symmetrical opposite of the author’s (see Figure 133), and my educated guess was that this inversion was probably a feature of the design of a good knowledge book. So, I decided to look for other knowledge books which either emulated this pattern or could be construed as counter-examples. Around this time, I started to wonder whether these patterns could give rise to a model and I looked in the direction of systemic thinking and semiology to try and structure my research work. Before I had the premises of a model, I also started to sketch knowledge representations and to look for action research opportunities in order to learn by doing⁶⁵. In a typical design thinking fashion, I have gradually and iteratively prototyped and tested a model until the current state of the PMC.

Part concurrently and part sequentially (after testing), I have looked in the research fields of ICS, Publishing Studies, Design and Semiotics for an epistemological theory and a model of design thinking for knowledge books. My research questions are about publishing (knowledge design) and (knowledge) books. Those objects of research are at the intersection of media, communication and cognition. They are amongst those which have been of the highest interest for ICS, Semiotics and Design and have therefore be well-studied. I have drawn upon these researches to propose an original theory of knowledge design; i.e. the KDT.

There has been a growing interest in ICS and Semiotics for the emerging field of Design which, in turn, has given media greater consideration. Media in general, and books in particular, are well-studied objects of research in all these three disciplines. My model of thought (see Figure 8) hinges on consilience between Design, ICS and Semiotics. It is based on an iterative process. It starts with Design to explain how it works. Design is intentional: it is a creative act. Knowledge design is an original structuring (form) of references (content) that makes sense (function). The resulting artefact (e.g. a knowledge book) is communicated to readers who apprehend its workings and its structure. This apprehension can be studied as a mediation in the field of ICS. But, at the same time, readers can not help but to make sense of what they perceive, of what is behind what they apprehend. They get a comprehension of what the artefact is for, what the authors’ intention was. This comprehension can be described by Semiotics either in the Saussurian tradition—as the uncovering of the signifier behind the signified—, or as a Peicean semiosis. In turn,

64 In philosophy, an ontology (“the study of the most general features of what there is”) is a theory (eth. from Greek *theōrein* “to consider, speculate, look at”) in the sense of observing things and reasoning about them in order to conceive “an intelligible explanation”. Other theories can be based on logic as “the study of the most general forms of thought or judgment” or based on epistemology as the study of knowledge. In a nutshell, ontology studies the real things, metaphysics studies the real rules, and epistemology studies the interaction of human consciousness with reality (how we know what we know).

65 “How is it that designers can begin designing with incomplete information and before all the relevant information is available? Indeed, because design is an exploration process” (Gero, John S. 1990. “Design Prototypes: a Knowledge Representation Schema for Design”. *AI Magazine* 11 (4)).

authors (writers, illustrators, editors, designers, publishers) would get a better understanding of what readers understand of their work. With this feedback, authors should be able to better design subsequent artefacts. Hence, in a virtuous circle, readers would better apprehend and comprehend those enhanced artefacts; i.e. they would make better sense for readers.

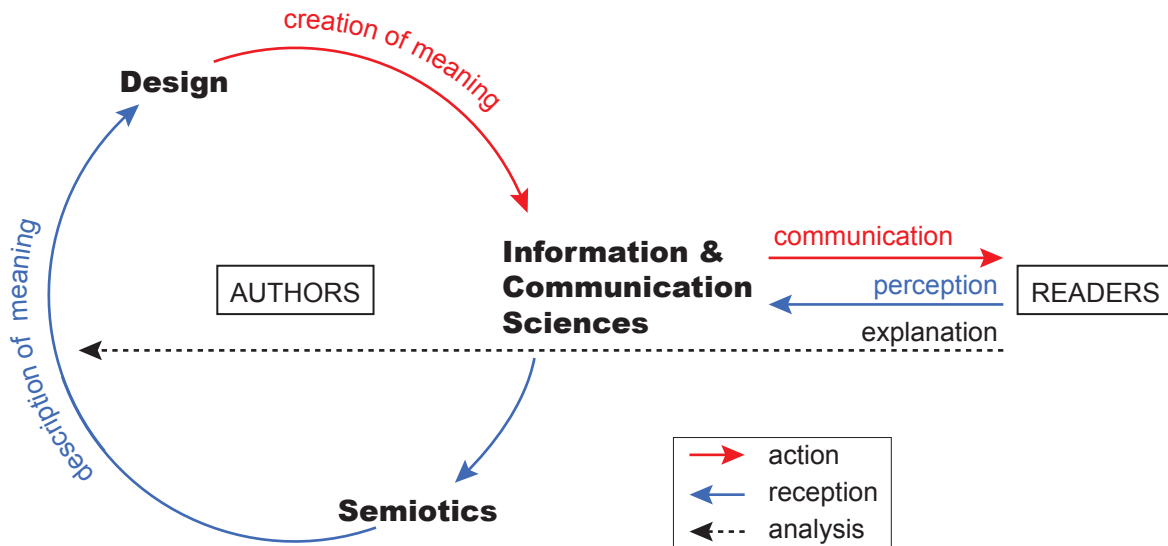


Figure 8. My model of thought of the circulation of meaning through Design, ICS and Semiotics, CC BY-NV 4.0

2. Interweaving design thinking and publishing

Metaphorically, I would like to think of this research work as a fabric. Its weft would be the theories of complexity and innovation and the three warp threads which are interwoven with it are theories and models spun from the disciplines of Information and Communication Sciences and associated fields (e.g. Publishing Studies and Media Studies), Semiotics, and Design. In other words, this fabric can be understood as a canvas based on consilience. This is the reason why I call one of the outcome of my research the Publishing Model Canvas, and the other outcome—the Knowledge Design Theory—has been composed with consilience from theories from different fields of research.

A comprehensive bibliography will be supplied at the end of this dissertation. At this point, I wish to pay a special tribute to the seminal and most influential sources. The general references have contributed to my understanding of the overall context. In the three main disciplines on which I draw, references were identified to defining the objects of research (knowledge books and knowledge design) and finding solutions to the two main research questions: what theory for knowledge book publishing? and what is the purpose of knowledge books?

Broadly, the overall theoretical weft of this research is made of the three threads of: 1. pragmatism and experiential learning (Peirce, Morris, Dewey, Goody, Damasio, Sarasvathy, Steyaert, Baccino, Dehaene, Lemoigne) as contrasted by disembodied rationality (Descartes) and structuralism (Lévi-Strauss); 2. complexity and system thinking (Simon, Morin, Latour, Lemoigne)

and digital (Doueïhi); 3. communication (McLuhan, Habermas) and innovation (Lévi-Strauss, Alter, Christensen, Hatchuel).

The three warp threads are schematically: 1. the concepts of ICS, the history and theories of media and publishing studies (Bachimont, Bhaskar, Chartier, Darnton, McCloud, Marion, Quinton, Souchier, Bomsel, Bouquillion, Chartron, Fitzpatrick, Miège, Moeglin, Phillips, Sallaün, Schnapp, Sousanis, Thompson, Wolton, Zacklad); 2. the Semiotic framework, from the founding fathers to the specialisation of the discipline, and my more specific fields of interests of design and media (Saussure, Peirce, Bertin, Barthes, Floch, Badir, Eco, Beayaert-Geslin, Deni); 3. the creative methods of Design, visual thinking and aesthetics, conception (Marples, Asimow, Bousbaci, Buchanan, Cross, Dorst, Faste, Findeli, Kress, McKin, Rittel, Waller, Borja de Mozota, Brown, Kelley, Martin, Oxman, van Leeuwen, Depace, Drucker, Forsey, Frankel, Johansson, Leifer, Meinel, Platner, Schneider, Stickdorn, Vial).

The emergence of the concepts and theories that are mobilised can be traced over five periods in a chronological index (see Figure 9):

- before world war 2: rationality, mind and knowledge, aesthetics, pragmatism, semiotics, art theory, learning by doing, Gestalt;
- after world war 2 and before 1968: structuralism, bricolage, media theory, graphic semiology, visual art, perception, engineering design;
- post modernism and before the Internet: technology of the intellect, communicative action, complexity, sciences of the artificial, bounded rationality, attention economics, myth, rhetoric, semiotics and communication, wicked problems, visual thinking, typography;
- the rise of the Internet from the 1990s to the 2000s: social innovation, disruptive innovation, cognition, concept-knowledge, composition, actors network, effectuation, entrepreneuring, editorialisation, knowledge engineering, book history, comics art, mediageny, designs as communication, editorial enunciation, semiotics of media, reception, serendipity, design management, design thinking, ambidextrous thinking, design as applied aesthetics, visual design, the thinking eye;
- the fragmentation of the information and communication landscape and the rise of the Gafam in the last decade: reading, learning, digital, human experience, publishing protocols, industrialisation of culture, information, obsolescence, publishing studies, document, knowledge design, unflattening comics, publishing business, communication, information design, collaborative transactions, semiotics of design, graphesis, aesthetics of design, graphics for scientists, design thinking, service design.

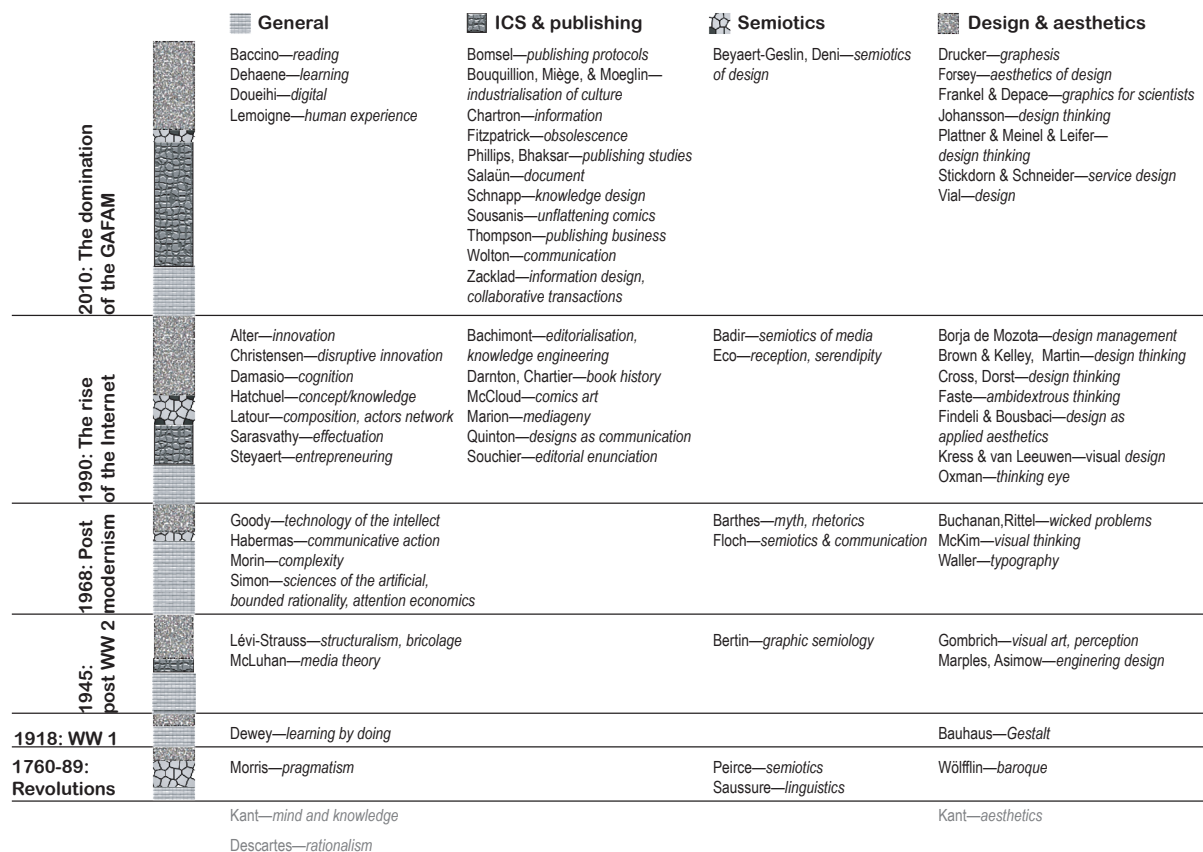


Figure 9. Drill core of the main bibliographical references, CC BY-NC 4.0

3. Case studies and action research

ICS and Semiotics lineage can be partially traced back to literature studies and linguistics. Corpus analysis is the bread and butter of these two disciplines and it has remained an essential element in ours. So, analysing documents appears to be a legitimate disciplinary methodology. But the question remains of what the corpus is and how to make sure it is relevant, both in terms of size (breadth and width) and of topic. In qualitative research, and particularly in Design research, the concept of “saturation” is used to assess how much research and testing is needed. This is a pragmatic assessment by which if an additional case or an additional test does not provide any new insight, it can be inferred that what was to be learned has, and the sample is “saturated”. This is what I have done with my corpus of six case studies. I had actually started to work on additional cases but, since they were redundant, I decided not to proceed. Because this research is not only about artefacts but also about processes the corpus analysis of secondary sources needed to be complemented with primary sources of first-hand observation. The preferred observation method for design thinking is ethnology, but I decided to assess whether it was the most appropriate for my research. So, I have looked into other fields and found that similar challenges have to be addressed in Information Systems Research (ISR).

Another commonality between ISR and ICS is that they share an object of research (i.e. information). So, I will draw on ISR experience of how to do action research. In the late 1990s, action research in this field was more precisely defined as either “participatory observation” for the data collection technique, or “participant observation” for the research method. Since the data in ICS are usually related to documents and the corresponding methodology is corpus analysis, participatory observation is not practical in this context, but participant observation is more interesting for the purpose of this research. It is defined as “culturally immersive research methods like [...] ethnography” (Baskerville & Wood-Harper, 1998, “Diversity in Information Systems Action Research Methods”). The methodological structure of participant observation has to be “fluid” because human interaction in social settings can not (and should not, for fear of interfering too much) be controlled. “Messy” problem situations indeed call for fluid loosely defined structures which leave the various activities relatively undefined. This process is essentially iterative. The typical involvement of the researcher with the project or the organisation is characterized by a “joint insider-outsider problem-solving team” where he is an “equal co-worker with the study subjects.” In my two participant observations (for Cumulus and for Écridil), my main goal was to gain *scientific knowledge*⁶⁶. The structured three-step practical approach involved problem setting, uncovering tacit knowledge (i.e. “the unconscious categories, schemas, patterns and other rules that form knowledge”), and making this tacit knowledge explicit. This is a characteristic of reflective ISR to focus on “the distinction between theory-in-use versus espoused-theory.”

By the beginning of the 2000s, the context had changed again and the focus shifted towards less stable and more innovative organisations and systems. For example, Markus et al. (2002) studied “emergent knowledge processes”. They defined them as “business processes that involve intellectual activities, expert knowledge, and diverse people in unstructured and unpredictable combinations.” The role of Information Technology (IT) as problem-solving tasks was recognised, but so were its limitations. For instance, problem-finding increasingly needed to be addressed in a “fuzzy” context. Problems could no longer be tackled by technology alone and a wider “socio-technical redesign” perspective needed to be considered. The characteristics of this emergent redesign are that it is a flexible process which continuously needs to address new unpredictable needs. Hence, knowledge processes are “untidy” and imply diffuse deliberations rather than an orderly sequence of activities.

This untidiness is also due to the fact that knowledge workers have had an increasing degree of autonomy and have proved able and willing to resist the imposition of standard routines (e.g. IT workers, and more specifically highly-skilled developers are given a high degree of autonomy by agile methods which have by and large replaced waterfall developments). Instead, they have developed their own blend of knowledge as a “community of practice” *situated* in practice. A problem is that this “shared framework of knowledge” can become closed to new ideas. In order

66 The other forms of action research, apart from those with the goal of scientific research include *organizational development, system design, and training*.

to overcome this undesirable social stasis, contradictions and dilemmas need to be expressed and both sides could eventually be incorporated in the final product.” (Markus & Gasser, 2002, “A Design Theory for Systems that Support Emergent Knowledge Processes”).

By the mid 2000s, more flexibility in ISR had led to a more open and transdisciplinary approach. This discipline being at the intersection of knowledge of the properties of machines and knowledge of human behavior, its commonalities with other design and applied disciplines led to a wider view of the required body of knowledge and to the internalisation of references⁶⁷ from natural science, social science and design science (e.g. Cross, 2001; Hevner et al., 2004; March & Smith, 1995; Simon, 1996). “Logical positivism”⁶⁸ was increasingly giving way to the “intepretivist tradition” of “understanding the complex world of lived experience from the point of view of those who live it” and trying to grasp the actor’s definition of a situation. In this context, IS researchers, such as Gregor, recognised Actor-Network Theory (ANT) as a “high-level Type II theory” (i.e. a “structuration theory, an understanding of the world as reciprocal relationships between action and social structure”, Giddens, 1984). ANT, which was incepted by Latour at the beginning of the 1990s, provides “an understanding of inanimate objects and material systems as actors or co-agents of human intentional actors ” (Gregor, 2006, “The Nature of Theory in Information Systems”).

The Sociologist Bruno Latour suggests that ANT should be used when other social theories, organisation studies, information studies, management studies, etc. do not apply (i.e. “in most ordinary cases [...], the ‘pre-relativist’ framework is perfectly fine”); but, when “things are changing fast” and where “boundaries are so terribly fuzzy”, the ANT is needed about “*how* to study things, or rather how *not* to study them—or rather, how to let the actors have some room to express themselves.” In this context, Professor Latour’s advice to a doctoral student at the London School of Economics, which he published in 2004, was: “writing texts has everything to do with method. You write a text of so many words, in so many months, based on so many interviews, so many hours of observation, so many documents. That’s all. You do nothing more.” With ANT, Latour’s claim is that “[modern] sociology could finally become as good as anthropology.”

Even though publishing is complex and its context is uncertain and ambiguous, I have not been entirely comfortable that the radical methodology of ANT could apply to my work. So, for my two participant observations at Cumulus and Écridil, I adopted loosely structured approaches

67 In a similar vein than Latour’s Compositionist Manifesto, IS has even redefined itself not by how it differs from other fields such as “the natural sciences, the social sciences, and the sciences of the artificial”, but instead as how it integrates and is integrated in “the mix [the composition] of theory types in which IS has a strong interest” and that is precisely why it gives it “a distinctive character.” (Gregor, Shirley. 2006. “The Nature of Theory in Information Systems”. *MIS Quaterly* 30 (3)).

68 “Logical positivism was developed in Europe after World War I by what was known as the Vienna Circle. At the base of logical positivism is the famous Verification Principle: only assertions that are in principle verifiable by observation or experience can convey factual information.” (Gregor, Shirley. 2006. “The Nature of Theory in Information Systems”. *MIS Quaterly* 30 (3).)

with an insider-outsider reflexive perspective and did not completely abandon hope of proposing a practical model and an interpretative theory.

4. Sketches and diagrams

Why would this thesis include over 200 figures? This significant quantity of figures reflects the importance of visualisation and diagrammatic thinking in my style of research. There are two main reasons why it is so.

The first is that visualisation is intermeshed with design and innovation, and my purpose is innovation by design for publishing. This concern is similar, for instance to “visual perception” which is central in Psychologist James J. Gibson’s concept of “affordance” (e.g. 1978, “The Ecological Approach to the Visual Perception of Pictures”; 1979, *The Ecological approach to Visual Perception*) or in the similar concept of “emergence” in design and architecture (e.g. Oxman, 2002, “The thinking eye: visual re-cognition in design emergence”). In other words, sketches are endowed with a performative power.

The second reason is that diagrammatic thinking provides a framework for analysis. This line of thought was advocated by Peirce who asserted that a diagram is mainly an icon. Because the form of an icon is also its object, icons are requisite for reasoning and, logically, so can diagrams be. In the beginning of the 2000s, semioticians such as Stjernfelt noted a renaissance in concepts like “schema” and “gestalt” in the description of “signification processes” and drew on Peirce’s concept of diagrammatic thinking as “experimenting upon this image in the imagination” (this concept was itself inspired by Kant⁶⁹). Peirce’s view that diagrams are possible “iconic representations of logic” and, to some extent, heuristically superior—because, by their contemplation, more can be learnt than lies in the directions of its construction—influenced their theoretical approach (Stjernfelt, 2000, “Diagrams as Centerpiece of a Peircean Epistemology”). Diagrams allow deductive reasoning because their conception is based on deduction. Stjernfelt go as far as claiming that “every deduction is diagrammatic of nature”. This is congruent with Peirce’s aim to go beyond making reasoning easier (e.g. with Euler circles and Venn diagrams), but instead to improve the analysis of reasoning by modelling “existential graphs” as “the operation of thinking”. For Johnson-Laird, Peirce’s realisation that a graph is analogous to what it represents (i.e. a model of the objects that differs from them as it is being “stripped of accidents”) makes his “existential graphs” precursors to recent systems of diagrammatic reasoning” (2002, “Peirce, logic diagrams, and the elementary operations of reasoning”). In my experience, reasoning was made easier by sketching and adopting diagrammatic thinking. My more modest hope than Peirce’s (with his existential graphs) is that the numerous figures and diagrams (e.g. inclusive Venn diagrams) are also making this thesis easier and more accessible for its intended readers.

69 The Kantian view is that an object can only be approached by a pincer movement with the two flanks of concepts and intuitions respectively. And concepts without intuitions are empty; intuitions without concepts are blind; the two might only meet in schemata.

5. The designerly framework of the Knowledge Design Theory

This thesis is *about* design (as a practice) *for* books (which can be assimilated to the subfield of interaction design) and not *in* design (speculative). In order to situate this work in the wider field of design research, I have used two disciplinary models (Fallman’s and Oxman’s) to highlight my theoretical background. In Fallman’s threefold model of interaction research (see Figure 10), I am primarily interested in design practice (to be used in this work). I have no pretence that this work would contribute to a paradigm of design research neither in terms of exploration nor of studies. For similar reasons, I am more focused on what designer and researcher at the MIT Media Lab Neri Oxman’s calls *affirmative design* as “practical” (i.e. offering “utilitarian, solutions that can be rapidly deployed”) than on *critical design* as “speculative” (i.e. “devising unforeseen strategies that challenge preconceived assumptions”). My design focus is more practical than paradigmatic because design is an object of this work, not its subject.



Figure 10. The model of interaction design research in its most basic form (Fallman, 2008)

According to Oxman’s model, I am focusing on the aspects of design relating to production, behaviour, and utility (including economy⁷⁰). She hijacked the 9-step Krebs cycle of “cellular metabolism”⁷¹. Her resulting model—the Krebs Cycle of Creativity (see Figure 11)—is an *instrument* which attempts to “represent the antidisciplinary hypothesis” where knowledge is *entangled* in a holistic “cartography of the interrelation” between the four domains of Science, En-

70 According to Sociologist Norbert Alter (2000), for Schumpeter innovation is the placing of inventions on the market and/or their integration in a social environment. It represents the articulation between the universe of discovery and the rationale of the market and/or of social use; i.e. the means to exploit inventions.

71 The original Krebs cycle of “cellular metabolism” (aerobic respiration) originally is a representation of a one-way chronological process of a complex system of “good metabolism [...] that first generates, then consumes, then regenerates” (a cell in a multicellular organism). Oxman used it to build her metaphoric model of creativity. In her modified version, it is both “a map” and “a clock” that can “bend”, “be reversed”, “be foreshortened” and “you can skip domains”.

gineering, Design and Art. It is also a *machine*⁷² (see Figure 10) for it is endowed with *creativity* (i.e. *poïesis*).

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Perception & nature

Figure 11. Krebs Cycle of Creativity (Oxman, 2016)

A visualisation of the design scope in this thesis is obtained by overlaying Fallman's and Oxman's models to materialise a perimeter (see Figure 12). This perimeter encompasses applied design activities—including design thinking and design management—but it is less concerned with fundamental design that is a theoretical questioning of art and science.

⁷² For Simondon, an *instrument* is “a technical object which can prolong and adapt the body to get a better perception”* (1958). Instruments and tools are mere appendices (a *tool* is “a technical object which can prolong and arm the body to make something”*). For Morin “all physical beings which actively works, transforms, produces can be thought of as a machine”*. In this sense, living being are “self-poietic existing beings” endowed with “organisational autonomy and energetic generativity”* which is not only “*machinal* (‘mechanical’, repetitive), [but] also *machinant* (‘engineering’, inventive)”*. The machine is “not mechanical, but *praxis*, production and *poïesis*. (1985).

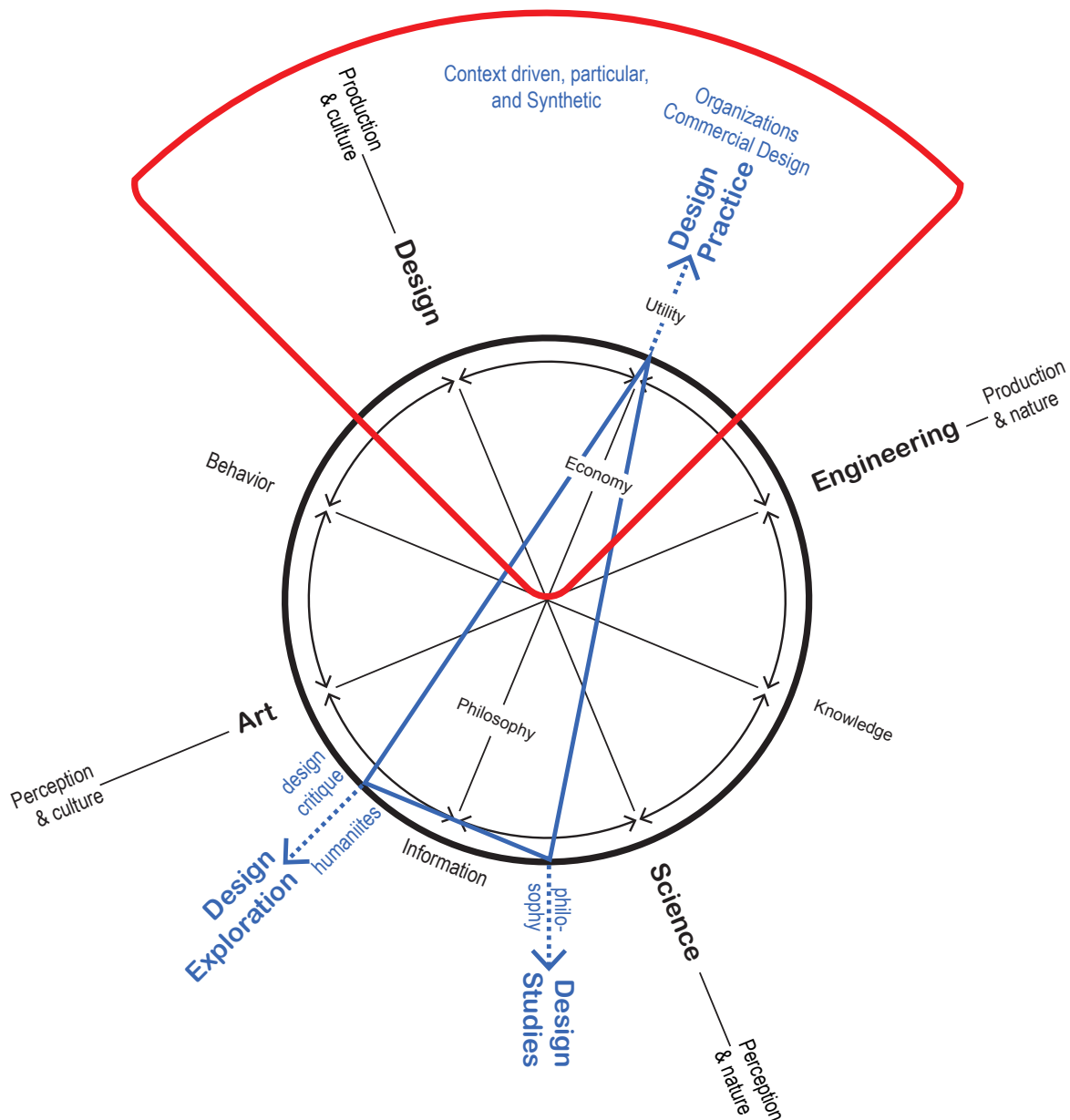


Figure 12. The design perimeter of the Knowledge Design Theory, CC BY-NC 4.0

The Knowledge Design Theory is a framing generalisation of theories of knowledge and theories of design (see Chapter 10) for knowledge books (see Chapter 11). It draws on the Design Theory forged in the field of Design Science Research, on the paradigm of the C-K theory (between the theory of knowledge and the theory of creativity), on design thinking methodologies and tools (e.g. the Design Ladder), and on the “compositionist” approach of the Actor-Network Theory (ANT).

6. The Publishing Model Canvas has been built iteratively

My research process for the Publishing Model Canvas could be summarised as the three ideal-typic steps of:

1. From case to cases: *representativity*. The starting point was the inspiration from the *Business Model Generation*. I found successful books such as *This is Service Design*

*Thinking*⁷³ which reflected similar experiences, but it appeared that design thinking as a discipline was too narrow a field to provide enough examples, and that I should also not only conduct my research work on published books but also on publishing books and on how book publishers work. The aim was to achieve sufficient representativity for a model to make sense;

2. From cases to a model: *consistency*. There are numerous models that can be implemented in publishing to address a wide array of problems, and there are theories that specifically describe publishing. They provide valuable means of interpretation but lack what I have come to realise that I was looking for: a model *for* publishing. Even though I have had to extend the scope of this research beyond design thinking books, I was still looking for a design model for publishing projects and for designing good enough books. One of the basis of design thinking is the principle of learning by doing or prototyping and testing. In design science, researchers call a model a prototype and this is how I have designed the Publishing Model Canvas as a series of prototype-instances. Gradually, the features of the original design emerged and a first structurally consistent “pretotype” got composed;
3. From the Publishing Model Canvas to cases: *relevance*. The pretotype was tested on the cases and its features had to evolve again in order to fit with the “reality” of the cases until it reached a sufficient level of robustness.

73 Stickdorn, Marc & Jakob Schneider. 2012. *This Is Service Design Thinking*. Amsterdam: BIS Publishers B.V.

Chapter 6.

An overview of the plan

1. Introduction, theoretical framework and literature review

In the introduction, the context of this thesis (my experience as a publisher and a design thinker, and the overall digital environment), the two research questions («What theory for knowledge book publishing?» and «What is the purpose of knowledge books?»), and the methodologies (mainly Design, Semiotics and Information and Communication Sciences) have been summarily described. Part One: A cross-cutting approach, is an analysis of the research questions in the light of the existing knowledge. A cross-cutting approach that I have found to be the most relevant to work on knowledge books and knowledge design is adopted.

This epistemological endeavour can be conceptually represented as a three-dimensional Venn diagram (see Figure 36). The first dimension of the material document is studied in the field of ICS in order to assess how to optimise its cognitive and social efficiency. The cognitive efficiency of a book is related to its understandability, and its social efficiency is a matter of how much its social impact can amplify its message⁷⁴. In the field of Design, the second dimension of the book as an artefact—an object-system—is manipulated in order to emulate innovation⁷⁵. The third dimension of the book medium is Semiotic and is considered in its supporting or conflicting environment, and as a host or a guest media. This study is performed with a choice of relevant semiotic tools (i.e. the analysis of myths and the Greimas square).

The three dimensions of the book—**document, artefact and medium—overlap. The first overlap—the weaving of document and artefact—can be analysed in terms of genre and style. I will more specifically draw on Waller’s contribution on typographic genres and it should be noted that *style* is an interesting concept for its connotations as “formal tags” in computing languages and softwares (e.g. HTML, word processors and typesetting programs) and “manner or technique” in aesthetics. There is a second interaction—between media and document—which stresses the rhetorical and communicational characteristics of the book⁷⁶. Books, contrarily to**

74 The amplification refers to the publishing theories of Bomsel’s *Editorial protocols* and his notions of “utility” and “exposure”, and to that of Bhaskar’s as “amplifying” in the *Content Machine*. The message refers to McLuhan’s aphorism “the medium is the message”

75 Innovation is defined by Sociologist Alter as the creativity that generates social value and, for design thinking, it sits at the intersection of design desirability, technological feasibility and economical sustainability.

76 In his approach of the “media narrative”* professor of Communication Philippe Marion created the neologism “mediagenic”* (1994 & 1997). He defined it as a fit between a medium and a narrative. It is a relationship, an interaction and not merely a content. Its pragmatic effects, compared with the inertia of their horizon of expectations—its “imaginary” media—, can be weak or strong. On one hand “mediativity”* is the communicational momentum of a narrative coupled with the technical capabilities of a relational device and the performance of its inner semiotic settings. And on the other hand, media strategy should mix emotion and information, affect and cognition. According to Semiologist Roland Barthes, rhetoric is doing just that: “two slices of emotion are framing a demonstrative block”* (1985).

other digital documents⁷⁷, are primarily published for humans to read. Those digital documents, which are not necessarily or primarily destined to be read by humans, should be tagged and structured to optimise Search Engine Optimisation (SEO) and other automated bibliometrics and impact factors, while books should be presented to appeal to human beings. In the third interspersing—between artefact and media—, the book is considered as a meta-system of object-language, a User Interface (UI). The core of this thesis is an analysis of the throughput of publishing (as a set of socio-cultural practices) and of the book (as an UX output). My perspective is user-centric and cares more about what a book does than what a book is. In other words, the focus is more on the dynamics of publishing than on its structures.

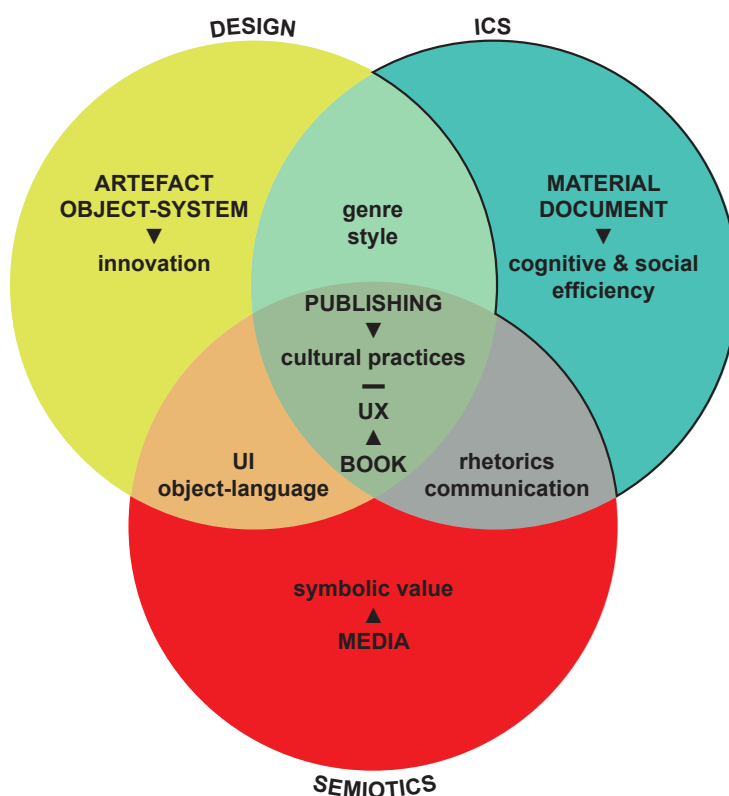


Figure 13. “Introduction” and “Part One: A multidisciplinary theoretical framework” , CC BY-NC 4.0

2. A knowledge design theory and a publishing model

The proposal of Knowledge Design Theory (KDT) and the presentation of the Publishing Model Canvas (PMC) are the methodological core of this thesis. The focus is on what a book does (versus what a book is), and the model is more generative than analytical. Simply put, their purpose is to help publish better and more innovative knowledge books in order to let them adapt to the ever-changing environment.

⁷⁷ In 2016, it was estimated that more than 50 percent of web traffic is made by robots (Adrienne Lafrance, “The Internet Is Mostly Bots”, *The Atlantic*, 31st January 2017)

The KDT draws on the digital humanities concept of knowledge design as an alternative to considering publishing. It was pioneered by the director of the metaLAB at Harvard Jeffrey Schnapp. The concept, and the theory I am proposing, is meant to overcome the shortcomings of the “zombie” system of academic publishing of monographies by fostering innovation by design. In this overhauled system, the knowledge workers of the publishing industry are considered as author-designers, editor-designers and publisher-designers. These new roles go hand in hand with new attitudes and expectations to unleash their creativity. They are supposed to write, edit, design and publish with a reader in mind. In order to meet these new challenges, upskilling in design thinking and systemic thinking is suggested.

The PMC is a communication tool that is meant to be used by all the stakeholders of book publishing—internal (editors, designers, typesetters, illustrators, publishers) as well as external (authors and readers). Its expected outcomes are threefold: fostering innovation, maximising cognitive and social efficiency, and generating symbolic value (see Figure 13). Why do I consider these three outputs to be desirable and how can these objectives be met (see Figure 14)? First, the kind of favoured innovation is a matter of deontology in the applied sense of how the business is run in order to innovate. For instance, does the project team working on a knowledge book agree that the reader should be considered as a consumer whose needs should be fulfilled or as a learner who should comply with an existing model of learning? Another instance is whether a knowledge book is published to generate profit, or should its costs be minimised in order to comply with the budgetary constraints of a not-for-profit activity? Second, efficiency is equated with diffusion, which is at least partially digital (even if it is complemented by a physical aspect for phygital p-books). The choices to be made there pertain to how the users should be addressed. Eventually, the third expected output is symbolic value which is a compound of how the producers of knowledge book write, edit, design and publish.

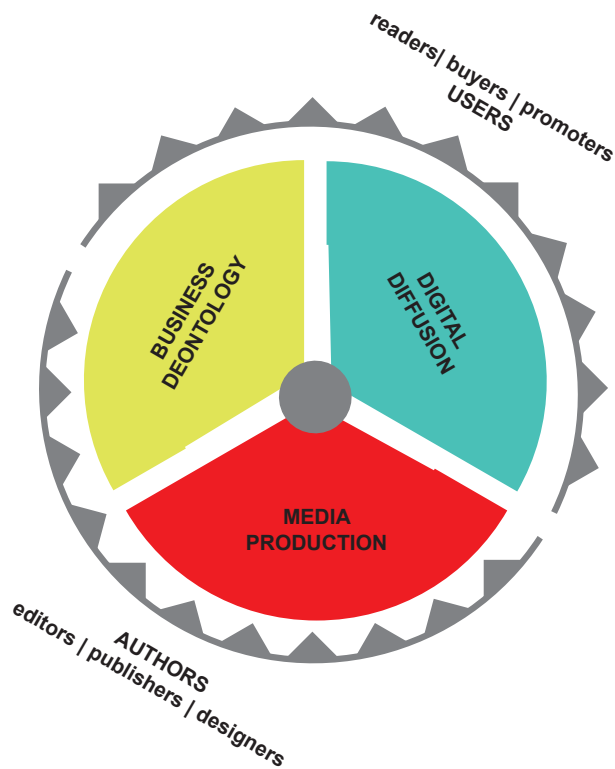


Figure 14. Part 4 the three topics of “the Publishing Model Canvas”

In the PMC, it could either be the case that the positions of all the stakeholders in the three dimensions are aligned. In this case, the publishing and editing strategies correspond to ideal-types and should be pretty straightforward. Logically, the worth of the book (the output) will be a function of the good execution of the process (the throughput). For Philosopher Jane Forsey in *The Aesthetics of Design*, it can be judged by readers to be good (meaning it is good *for them*), it can be appraised by the cognitive judgement that “an object fulfills its purpose without wanting the thing for ourselves” (hence *perfection* is “an objective concept, wrapped up [in] the particular pleasures that we get”). Or it could be the case that the stakeholders’ expectations are misaligned. At this stage of what Semiotologist Michela Deni calls “the metaproject of the project” in her article “L’intervention sémiotique dans le projet : du concept à l’objet”, it is necessary to acknowledge the deviance (i.e. the creativity in sociological terms) and initiate an innovation process, at least within the project team and preferably cooperative⁷⁸ (i.e. with internal and external stakeholders).

3. The nine cases

“It used to be that theories were produced in academia and then adopted in industry, practice now often leads [...]. In some cases it seems that academia is not paying enough attention.” (Cross & Dorst in Cross et al. 1991)

⁷⁸ Professor of ICS Manuel Zacklad describes various kind of possible arrangement in his semiotics of cooperative transactions. For a detailed ontology, refer to his article “Diversité des ontologies de la communication et de l’action collective”.

When I started working on this thesis, I figured that it was important to go back and forth between theory and practice. What started as a guiding principle has become ingrained in my research work. An unexpected side effect has been the gradual realisation of the beneficial contribution of researching on my teaching activities and on my professional practices as a coach, a consultant and a publisher. It has been a transformational experience from teacher-practitioner to aspiring teacher-researcher. I mention this personal experience because it also is a founding principle of design thinking to blend theory and practice⁷⁹ and concept and knowledge⁸⁰. This also justifies why I resorted to action research and to a blend of different observation methodologies (ethnography, semiotic tools, qualitative analysis, etc.).

The nine cases are grouped into two different parts in order to differentiate between the five one-off projects of book publishing and the four programs which aim to publish series or collection of documents on an ongoing basis.

The first three cases are based on the analysis of the knowledge books *Business Model Generation*, *The Medium is the Massage* and, jointly, *Unflattening* and *Understanding Comics*. Those four books are exemplary for their success in terms of audience and because, thanks to their design, they “perform their function with excellence and style”; i.e. those books are “*better than the norm*” (Forsey, 2013). It is also worth noting that two of these books are either adapted from a thesis (*Business Model Generation* is a popularised sequel of *Business Model Ontology*) or an adapted thesis (*Unflattening* is a comics-form thesis). The “Design Management Series” case is based on interviews and working sessions with her co-author Brigitte Borja de Mozota. What is of particular interest is to study why a recognised author of academic articles, monographies and handbook has strived (but not yet managed) to publish a knowledge book. And the last case studied is *Version 0*. It is a curious book which could be presented as non-proceedings of the Écridil conference or as a “catalacte”. My perspective is more engaged in this case since this is a publishing project in which I participated, an action research.

I had conceived the Cumulus design conference in Paris as a similar opportunity as Écridil for action research. It turned out that this was a missed opportunity, but insights could be derived from this failed attempt. I found that the two emblematic journals *Science* and *Nature* are also iconic examples of knowledge design and knowledge publications. Their study also questions the future of knowledge publishing as possibly (or not) being machine-assisted or performed by more or less self-reliant AI. My on-site observation, interviews and the analysis of *The Conversation* France with the PMC shows that it is the most innovative knowledge design experience that I have come across. It has also proved to be a sustainable enterprise and I explain why. The last case is the innovative program Jstor Labs which was launched by the Jstor publishing organisation and has, in turn, contributed to both redefining how this organisation operates overall

79 “It used to be that theories were produced in academia and then adopted in industry, practice now often leads [...]. In some cases it seems that academia is not paying enough attention.” (Nigel Cross, Kees Dorst, & Norbert Roozenburg (Eds), 1991, *Research in design thinking*, proceedings of a workshop meeting held at the Faculty of Industrial Design Engineering, Delft University of Technology, the Netherlands, 29-31st May 1991).

80 For further reference, see Chapter 12, «3. The design theory of knowledge and creativity: C-K».

and how new knowledge projects are designed (e.g. TopicGraph). The study of the Jstor Labs was completed by an interview with its director.

A synoptic grid with two different perspectives for the ten cases (see Figure 14) is displayed hereafter. The first characteristics are based on the three dimensions (depending on their emphasis on one or more dimensions of Design, ICS and Semiotics) described in parts 1 and 2 (see Figure 13): *innovative* relates to the implementation (and the result) of a publishing model; *popular* is a mix of the genre of the knowledge book and of its transmedia dissemination (within the community or towards a wider audience); and *visual* is an appreciation of the relative content of illustrations versus text and of the “image of the text” produced by typography. The second point of view is an indication of what was learned in each case in terms of: first *input*—the elements of a knowledge publication and how they are arranged; second *throughput*—how knowledge design unfolds; and finally *output*—how knowledge publications can be assessed.

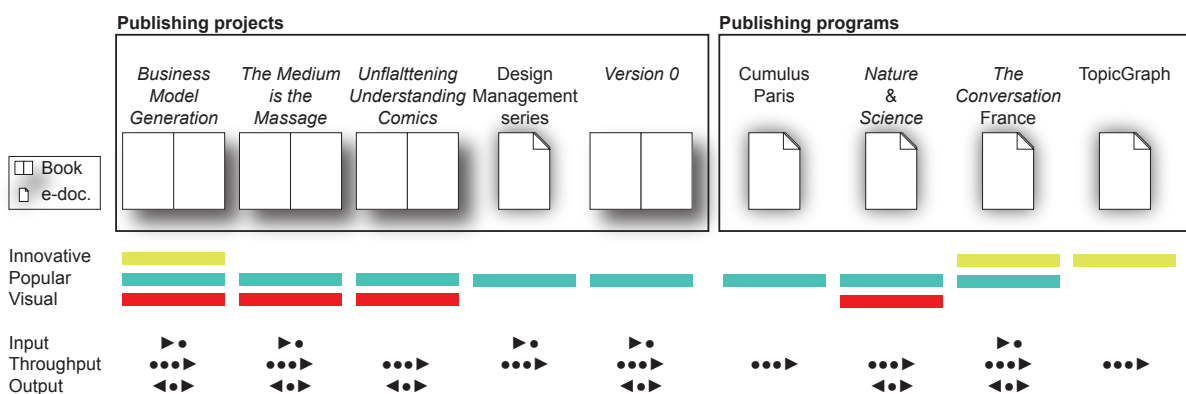


Figure 15. “Part
Case studies of knowledge design series and programs”.

Five:

Part One:

A cross-cutting approach of publishing by
design thinking

Chapter 7.

The framework of publishing

This is a paradox that, in order to succeed in publishing, one has to know this industry and this activity, but should at the same time let aside what one knows in order to embrace uncertainty and strive to innovate. Innovation is vital in this “industry of prototypes” where one has to accept a glorious uncertainty, and which is based on the concept of originality (this is the founding principle of the copyright legal system). If the concept of prototype with reference to originality applies to the books themselves, and innovation pertains to the activity of publishing, the main point I wish to stress is that, beyond artefact and process, publishing is foremost a human and therefore a social business. This is why I propose to examine the ecosystem of books and publishing through the mind’s eyes of those who write them, who make them and, hopefully, who read them.

1. What is publishing?

The activity of publishing applies to different industries such as software, music, gaming, magazine, book... It is beyond the scope of this work to define these activities, but the common point between these industries is about creating and disseminating content which is mediated through various and changing genres and formats.

Publishing is concerned with flow and stock. This work is focused on flow and publishing is considered as a processual activity that adds value. Publishing is also about stock (for example list building can be seen as a activity akin to capital accumulation). This capital accumulation is of a particular kind, it is immaterial and based on Intellectual Property (IP). For example, Phillips considers that the three drivers of the book industry are “authorship, readership, and *copyright*” (italics added, 2014, *Turning the Page: The Evolution of the Book*). Book publishing has traditionally been subject to two different legal systems. In a nutshell, the UK and US apply copyright law and France favours author’s rights (*droits d’auteur*). Copyright is based on a compromise between fair use by the users and the right for the authors to be fairly remunerated. Authors’ rights grant the authors a moral right which can never be relinquished, largely ignore fairness, and also provide that authors must be paid proportionally to the commercial success of their work (a percentage of the revenues). One of the consequences of the digital emergence has been the creation and development of a new positive and universal source of law—Creative Commons (Lessig, 2002).

The focus of this work is book publishing. But book publishing itself is diverse (there are three main sectors of: scientific publishing, education publishing and trade publishing). So, for a comprehensive definition of publishing, reading the manual coordinated by Bertrand Legendre *Les métiers de l’édition* (5th ed. 2012, Éditions du Cercle de la Librairie. Paris, France) and *The Oxford Handbook of Publishing* directed by Angus Phillips & Michael Bhaskar (2019, Oxford University Press, Oxford, UK) is recommended. Professors Legendre and Phillips are each director of the most influential Masters in publishing in Paris and in Oxford and are recognised

for both their expertise of the field and their capacity to teach the trade to publishers-in-the-making.

2. A complex ecosystem of stakeholders

Publishing is a plural, variegated entity, not just an industry but a set of industries and industries within industries. (Bhaskar & Phillips, 2019)

According to Simon, complexity can be defined as a system of boxes-within-boxes. If publishing is defined as “a set of industries and industries within industries” it can logically be referred to as complex.

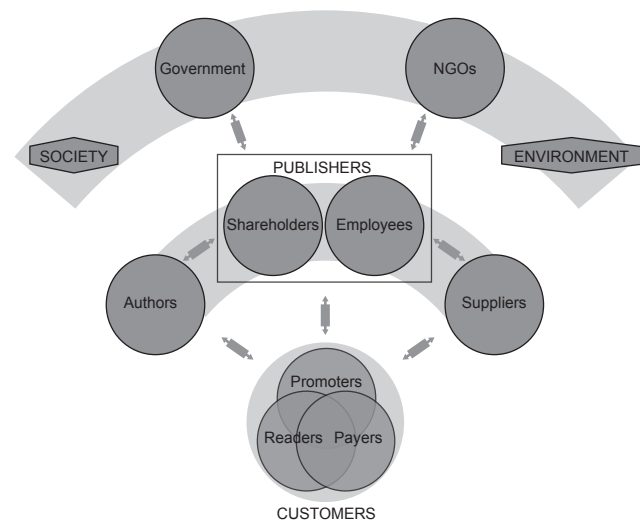
Around the turn of the twentieth century the publishing industry arguably shifted from being product led to market led [...] publishing moved from being supply to demand driven. (Bhaskar, 2013)

It is proposed to go one step further than a supply-driven system to study book publishing from a customer-centric perspective (see Figure 16). It is a radical turn from what Schnapp calls “a century of industrialized print culture” that *foregrounded* the labor of authors and “*backgrounded* other forms of mediated labor (designers, publishers, typographers, printers, and the like)” (italics added, Schnapp in Guffey, Michaels, & Schnapp, 2014). In my view book customers (i.e. readers, promoters and payers) are the central stakeholders; the second circle encompasses authors, publishers and other suppliers (e.g. freelances such as designers, typesetters and so on according what functions each individual publisher subcontracts); and an outer more general circle, i.e. which is not publishing-specific.

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Figure 10.1 Map of the stakeholders of a publisher (The Oxford Handbook of Publishing, 2019)



Customer-centric Stakeholder Map of Publishing (publisher's view)

Figure 16. Stakeholder maps, publisher- and user-centric perspectives, CC BY-NC 4.0

3. Readers' perspective

3.1. What do customers want?

Cultural Economist Olivier Bomsel considers that, for readers, *utility* is “not so much the issued thing [...] but the sense of the received thing”* (2013). For example, Amazon is focused on “the customer experience” and found that the three things that mattered most to book-buying customers were *selection* (matching the marketing feature of customer as promoter), *convenience* (customer as user) and *price* (customer as buyer). Similarly for e-books, participants interviewed for a JISC¹ survey Collins & Milloy, 2016) declared that “the three strongest points in favor of e-textbooks” are *convenience*, *searchability*, and *cost*; and the 1,505 students surveyed in the 2011 Book Industry Study Group (BISG) Report reckoned that “the most important e-textbook features” were, in descending order, *affordability*², *readability*, *acquisition*³. However, “most students (75%) still preferred printed textbooks”: the *look and feel of print*, the potential for permanent *ownership* of the book, and the opportunity for *resale* (O’Hare & Smith, 2012). Researcher Michael Jubb argued in the report *Academic Books and their Future* (2017) for the Arts and Humanities Research Council (AHRC, UK) that academics have different attitudes towards academic books. Academics *as readers* may consult or read sections or chapters “rather than reading them from cover to cover” while academics *as authors* undertake initiatives designed to “stimulate new forms of engagement” between researchers and readers and “are recording and presenting their research findings in innovative ways”. In other words, they wish to read the traditional way but to write in innovative ways.

3.2. Reading is understanding

Understanding is less important than getting it. “Getting it” in design can be compared with telling a joke. If people are told a joke and they don’t understand it, they will ask to have it explained. After the explanation they will understand it, but they won’t laugh. (Faste, 1994)

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- 1 The Joint Information Systems Committee (JISC) is the UK higher, further education and skills sectors’ not-for-profit organisation for digital services and solutions” (www.jisc.ac.uk/about/who-we-are-and-what-we-do, viewed 25th February, 2020).
 - 2 Overall, book value in monetary terms is decreasing. Books in Europe have lost 20% of their value in the last decade and 40% in the US. The average price paid for a book on both side of the Atlantic is now below \$10 or €10. Three factors are pushing book prices down. One of them is the change in the product mix of books sold with the emergence of e-books and the growing share of pocket books and paperbacks. Another one is the fiercer competition on price of highly discounted hardbacks (sometimes below cost) in markets with no price agreement (e.g. the US and the UK) under the pressure of retail chains and e-tailers (mostly Amazon). And a third factor is self-publishing with authors selling their books for a nominal price sometimes below \$1 or €1.
 - 3 “Discovery services and delivery systems are not currently well-attuned to the needs of readers, or to new kinds of digital ‘books’.” (Jub, 2017)

With Magnetic Resonance Imaging (MRI) the zone used for reading called “the mailbox” has been located in the left hemisphere. Other zones such as the early vision areas which are the fastest to react to visual stimuli are also solicited, and so are zones associated with spoken language for accelerated and enhanced “parallel processing” of reading. About half the cerebral cortex is dedicated to visual processing. For Baccino and Draï-Zerbib (2015), it is a clear sign of “the importance of this sensation for the human species”.

Baccino and Draï-Zerbib gave a synthetic account of the current physiological, psychological, and theoretical and empirical knowledge of reading as a set of systematic cognitive processes. They are defined as “transforming the visual information of the words of a text into a cognitive representation”. This representation simultaneously includes what is read and what has already been memorised by the reader. The reading process is threefold (see Figure 17) and depends upon Event-Related Potentials⁴ (ERPs):

1. visibility at the physical level is studied by neurobiology as depending on the quality of the exogenous stimuli and on the state of the sensory receptors;
2. legibility at the syntactic (i.e. algorithmic) level depends on one hand on the exogenous visual features of the document—the surface structure is both linguistic (lexical and syntactic information) and para-linguistic (punctuation, material formatting, etc.)—, and on the other on the cognitive activity and the emotional state of the subject;
3. readability is a more complex process of understanding at the intentional or semantic level (purpose of reading, point of view, and mental representation of the content). It depends, amongst others, on style, vocabulary, etc. and is affected by gestalt (how elements are organised and interact between themselves). A well-structured document should follow a principle of sobriety (i.e. the Ockham’s razor). But reading is an iterative integrating process. It is affected by cognitive strategies pertaining to prior knowledge, and it is also subject to teleological considerations. Proposals are read and stored in the working memory in order to assess their referential consistency with forthcoming propositions in the text. Cognitive strategies are implemented in order to build a consistent network of propositions (a coherence graph) which represents the content of the text (a text base). This integrative process is used to build a situation model (also called a design model) that brings consistency to the text base. It can then be modelled as frames and stored in the long-term memory (knowledge base). This integration depends on the domain knowledge (expert or novice) and on the reading purpose (“read to do” or “read to remember”). This is where the integrative theory of affordance (Gibson, 1966, 1979) comes into play. Perception is considered as a call to action and conversely action is a component of perception. The mental structure constructed by the reader simultaneously represents the status and result of the understanding.

4 ERPs represent change of psychological processes related to cerebral activation.

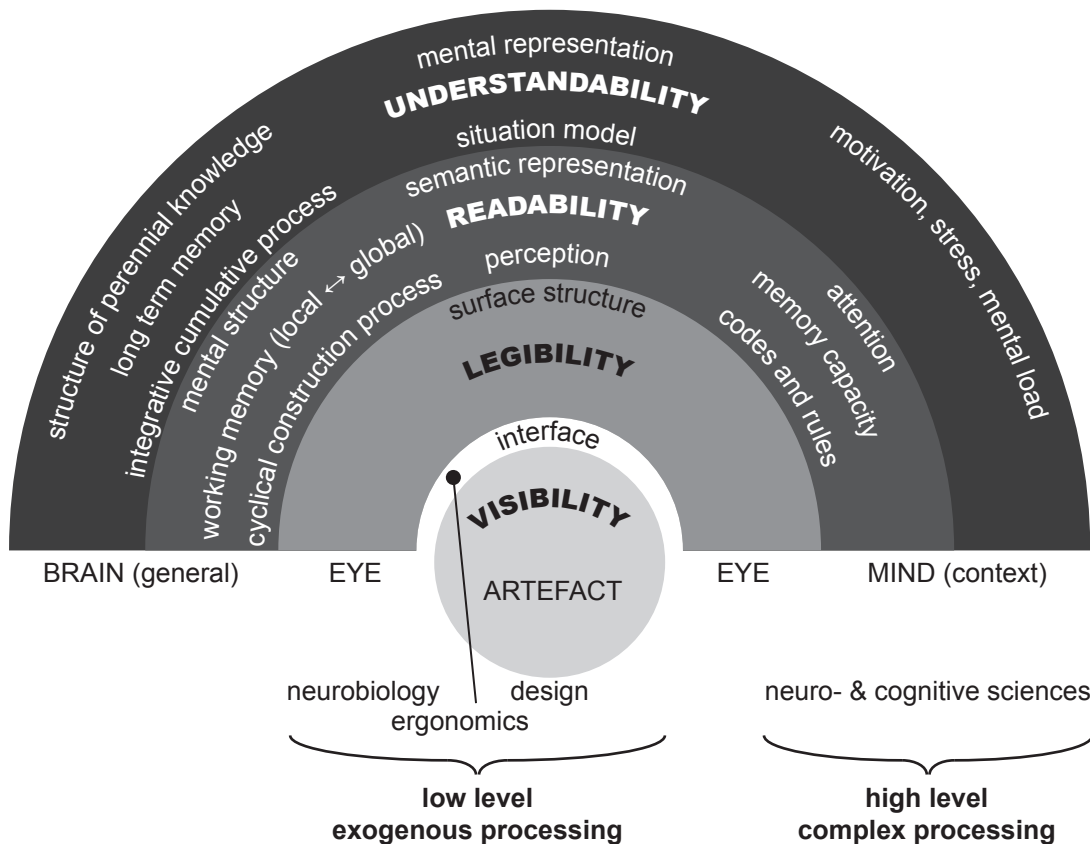


Figure 17. The threefold cognitive process of reading, CC BY-NC 4.0 (adapted from Baccino, Thierry, & Véronique Drai-Zerbib. 2015. *La lecture numérique*. Presses universitaires de Grenoble, coll. “Sciences cognitives”. Grenoble, France)

In short, for Baccino and Drai-Zerbib “understanding is establishing an ongoing relationship between the material format, the text content and the reader’s knowledge”*.

3.3. Understanding is learning

Waller elaborated an “applied psychology of typography” and developed the concept of “literacy” which is similar to the threefold reading process described by Baccino and Drai-Zerbib. He claimed that there is “overlap” in well-designed texts” between the three domains of legibility (the psycho-motor domain), typographic cuing (the cognitive domain—enhanced by the use of typography to signal the important ideas in a text), and atmosphere value (the affective domain). What Waller adds to the cognitive approach of the reading process is the influence of the affective domain on literacy. This aspect has also been emphasised by neurologist António Damásio for whom *Descartes’ Error* (1994) was to dissociate “Emotion, Reason and the Human Brain” (as per the subtitle of his book *Descartes’ Error*). In other words, we think what we think because we are what we are (see Figure 18) and it contradicts Descartes’ thesis of “mind-body dualism”. Life is a complex process in which the brain is “body-furnished” and the mind is “body-minded” (*Looking for Spinoza: Joy, Sorrow, and the Feeling Brain*, 2003).

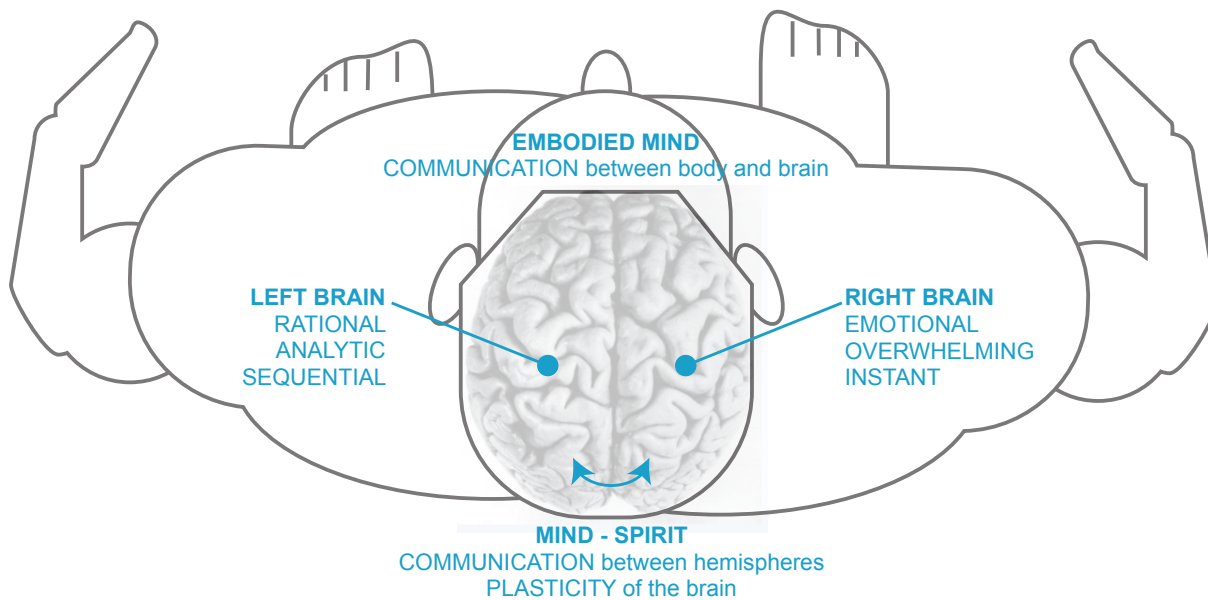


Figure 18. The brain and the body, CC BY-NC 4.0

For cognitivist psychologist and neuroscientist Stanislas Dehaene, cognition (humans' ability to learn) is made possible by brain plasticity. And the cognition process becomes optimal with play and metacognition. Metacognition is the process of trying, getting feedback, comparing expected outcome with reality, and experiencing again. It is essential to “fix” a knowledge or a know-how (e.g. a kid piling building blocks up learns how her prediction about the stability of the structure are verified). Hence the optimal “four pillars of learning”⁵ (Dehaene, 2014): 1. getting attention (eliminating false or unnecessary assumptions to concentrate on what is relevant); 2. engaging actively (body and mind are not disconnected and cognitive effort is paradoxically more efficient if both are engaged); 3. getting feedback (the brain works iteratively by inferring and comparing inference with feedback—positive and social reinforcement is desirable); 4. consolidating (transfer from explicit to implicit; i.e. automation). This last stage of explicit to implicit is akin to the third stage of the reading process when some propositions temporarily stored in the working memory are selected and processed as frames to be stored into the long-term memory of the reader. Metacognition and reading are active processes involving mind and body. This is at this intersection between “read to do” and “read to remember”—between *technè* and *épistémè*—that the knowledge books are located (see Figure 2).

3.4. Mediageny and editorial enunciation

Books are particularly mediagenic for particular types of content and story, and they afford media comfort (as they are barely perceived and thus lay at an infra-ordinary level). In order to think “the technologically and sociologically determined combination of the means of transmission and symbolic circulation”^{*} the neologism *mediology* was created by philosopher Régis

5 Dehaene, Stanislas. 2013. « Les quatre piliers de l'apprentissage, ou ce que nous disent les neurosciences ». *Paris Innovation Review*, 2013.

Debray in 1991. His aim was to “think the unthinkable of thought”*. Marion equated this approach with “unburying media occultation” because—according to the mediological principle of “media comfort”—a good media tends to become transparent as if it warranted “the feeling that the ‘real’ world could reach us unmediated” (1997). This is a concept similar to professor of ICS Emmanuël Souchier’s “infra-ordinary”* which he developed in his theoretical framework of “editorial enunciation”* (1998); i.e. an efficient media remains hidden. This paradox is exemplified by the omnipresence of typography which makes it disappear as “it erases its sense and function”*. Typography “serves the verb apologetically for also being an image”*. Later, Souchier found in neuroscientist Lionel Naccache’s work on perception and his findings on “unconscious cognition”* a confirmation of “the necessity to unthink the material and formal media”* which he called “the oblivious memory”* (2012). Thus, in the same manner that people read without paying attention to typography, they write efficiently because they do not focus on writing. Interpretants⁶ (readers in book terms) need to unthink their experience to access content efficiently (read books) even though they actually access books in the existential world and are therefore influenced by the book medium. The paradox is that good design (editing) of the content-cum-container (books) should make them transparent to the users (readers) while publishers and researchers need to be aware and pay attention to the editorial enunciation (the infra-ordinary dimension of the media).

Intuition for Souchier is a “memory of the oblivion [...] the basis of reading efficiency, as of all human activities which require the implementation of routines” which “allow for huge mental energy savings” (2012). For Jérôme Guibourgé and Audrey Moutat (2017) intuition has to do with learning (it refers to Karl Polanyi’s concept of “tacit knowledge”). *Intuitiveness* is on the user’s side and draws on professor of cognitive science Donald Norman’s concept of “affordance” in *The Design of Everyday Things* (1988); i.e. the object is expressing its ability to present the interactions it is allowing. For the book to convey intuitiveness, the designer needs to fine-tune the intuitive communicational system of design, this “grammar of factitivity” previously learned by the user from past experience. Intuitiveness for the user is when he can “recognise the uses of an object without knowing them”.

Intuitiveness is a prerequisite for facilitating the user experience of books (printed or digital). But *if* intuitiveness is a *necessary* condition, is it *sufficient*? Following Kant⁷, Charles S. Peirce recognised that “the mind has three fundamental faculties, the feeling of pleasure and pain, volition and desire, and cognition”. If an analogy is drawn with the knowledge books I am focusing on, it can be inferred that book users (different readers or the same reader in different situation) might desire three distinct kind of interactions (see Table 1): an intuitive experience (e.g. brow-

6 Interpretants for Peirce are the conjunction of interpreters with their experience of the world and their experience of language.

7 “In the introduction to the *Critique of Judgement*, Kant offers an overview of his entire architectonic. All ‘faculties or capacities of the soul’, he writes, ‘can be reduced to three: the *faculty of knowledge*, the *feeling of pleasure and pain*, and the *faculty of desire*.’ Knowledge requires a mental representation that we have (based on our sensory experiences) and a concept that determines what that representation is of” (Forsey, 2013).

sing), an utilitarian experience to find some relevant content (e.g. searching for reference), and a learning/cognitive experience (e.g. active reading/writing of an essay or a textbook).

Table 1. The three levels of reader involvement with a book

	User Experience		
	User Interface		
	User Perception		
“Faculties or capacities of the soul” (Kant)	feeling	faculty of desire	faculty of knowledge
Faculties of the mind (Peirce)	feeling	volition	cognition
Stages of human development (Piaget)	body-centered	visual	symbolic
Interactions with the book	intuiting	searching	learning/knowing
Experience of the book	intuitive	utilitarian	cognitive

The first of these three instances—intuitiveness—has been discussed. The second instance—searching—has been greatly enhanced by digital tools such as search engines; machine intelligence has proved particularly efficient. For Morin (1985) artificial machines should be distinguished from tools and instruments which are “pure appendix”* (e.g. the pen with which we underline text in books), machines have to be conceived as “praxis, production and poësis”*. And a key to understand the “intelligence” which has been associated with machine is its etymology; i.e. it was composed with *inter* (between) and *lego* (chose), and “choosing between” is a synonym for “searching” (seeking carefully and thoroughly).

Rolf A. Faste who, in his own words, “has spent over twenty years thinking about how to best foster creativity in the university setting” contributed to a better understanding of the third instance—learning/knowing—with his famous article “Ambidextrous thinking” (1994). He referred to the three stages of human development described by Piaget: a body-centered stage, a visual stage and, beginning at age eleven or twelve, a symbolic stage. He argued that the problem-solving process goes in the opposite direction of the human development. If a problem can not be solved at the third stage of symbolic thought, people will try to solve it visually (e.g. sketching), and if it still not enough, they will resume to the primal body-centered stage (e.g. materially modeling and “playing” with the model). Along the same lines of thought—and drawing on cognitive science, critical theory, and aesthetics—applied to books, Digital Humanist Johanna Drucker proposed a “model of the phenomenal codex” which is not a “static artifact”, “an inert thing”, but is “produced new by the activity of each reading”. This idea also resonates with the Peircean conception that “just as we say that a body is in motion, and not that motion is in a body, we ought to say that we are in thought, and not that thoughts are in us”.

4. Authors' perspective

4.1. Why do authors write?

Goody showed that oral cultures tend towards stifling collective “cultural homeostasis” because speaking is a “now or never matter”⁸. Thus, ideas stick according to their *utility* and “there is no chance that [the speaker’s] discovery will be acclaimed at a later date”. In written culture “the very knowledge that a work will endure in time [...] encourages the recognition of individuality” (Goody, 1977).

In the short history of thought of oral and written culture proposed by Waller⁹, there is an underlying tension between the unstoppable linearity of the written flow and the interactions allowed by oral conversations. Marion (1997) brought a nuance with his definition of a heterochronous context of the written form in which “the time of reception is not programmed by the medium”* (e.g. book) and readers are allowed the “media freedom” to go back and forth to the texts. This is why Fitzpatrick (2011) considers that *content management* (i.e. “highlighting and remixing significant ideas in existing texts”) is one of the most important work, rather than producing more “ostensibly original texts”. Waller optimistically pointed out that the modern genre of typographically organized and illustrated book has eventually regained “more affinity with medieval books than with the typical products of the first few hundred years of printing”.

4.2. Transmedia and design

On the one hand, knowledge forms are migrating to digital platforms, where models of publication are, by their very nature, iterative; on the other hand, we are now printing more books than ever before and these books now live multichannel lives, raising a tangle of questions about the boundary between the world of information and the world of objects (not to mention the physical and social spaces in which they circulate). (Schnapp, 2014)

In a way the paradoxical relationship between the world of information and the world of objects has to do with transmediageny—the “appreciation of the transmediatic distribution capabilities of stories”* (Marion, 1997)—and with transmedia storytelling—“the whole [story is] greater

8 Oral culture was defined by Marion in 1997 as an *homochronous* context; i.e. “incorporating the time of reception within the enunciation of the message”*.

9 Waller started with a contemporary of Goody, Havelock (1976), who concurred that creative expression and individual interpretation were strictly limited in ritualized oral culture. Saenger (1982) commented that the inception of university texts in the Middle Ages made possible “a form of memorization based on the retention of the visual image of the written page” (a mental map of the text as a physical object). The moveable printing press invented by Gutenberg brought significant changes. On one hand, in terms of book illustration, it changed the book “from a colored artefact to a monochrome one” and pictures and words were disconnected “the graceful lines that linked text to marginal decoration were severed”. On the other hand, Cherry (1966) argued that “typographic structuring”—compared to unsegmented written text (which gives the reader little option but to start at the beginning and continue reading until the end)—turned text into a co-operative medium (since typography and punctuation is seen by discourse analysts as the graphological equivalent of paralanguage).

than the sum of its parts” (Bhaksar, 2013). From the perspective of readers, recent surveys show continuing evidence of “a preference for print” (Jubb, 2017) “print is still (indeed, increasingly) [...] preferred by readers for sustained reading” (Deegan, 2017) and “printed books remain the preferred format for 65% of book readers in the U.S.” (Yucesoy et al., 2018).

McLuhan described the psychological process of regarding all phenomena from “a fixed point of view” (1967) which derives unconsciously from print technology. In the same vein, but from an historical perspective, Goody showed that printed book allowed individuals “a private, fixed point of view” and the associated literacy conferred the power of “detachment, non-involvement”.

Authors care about being published but not about publishing. They are generally not aware of the process. Publishing a book is often considered as good enough and they do not get much feedback from publishers. For Waller, many authors are “indifferent to the visual form of their work” or “capitulate to the forces of house style”. It feels like authors draw a distinction between their *substantive* work (their text) and *accidental* features (artefactual) which is the editor’s deed. In design terms, they dissociate function and form, and form literally comes second. But still, book designer Paul Luna reminds us that “books are ‘designed’ by their authors and publishers long before any typescript, electronic copy, or cover blurb arrives on the desk of someone whose job title is ‘designer’”. And Waller found that not only the way we express our thoughts, but the way we think is graphic. He also uses the metaphor of “language as a grid” which is also found in Saussurean linguistics (words relate to other words both horizontally—syntagmatically—, and vertically—associatively).

From the perspective of authors, as Burdick et al. experienced when they were working on their book *Digital Humanities* (2012), making the shift from the linear vertical scroll of word processing software to the spatiality and recto-verso of the codex “altered the rhythm and organization of the text”. It made them work “with a reader in mind” and “write to the design”. As Drucker suggested in 2008 the problem of the digital future of the book must be considered as how the book *works*¹⁰ rather than how it *looks*. For example designer Fiore described (in Schnapp & Michaels, 2013) working on *The Medium is the Massage* as an experimentation of “book-as-performance”, “films between covers”, “part book, part magazine, part storyboard” and, indeed, part advertisement”. This *framing* of the book “as screen, windshield, lithographic plate” was congruent with McLuhan’s long-stated claim that “my books constitute the process rather than the completed *product* of discovery” (Schnapp & Michaels, 2013). In other words, a knowledge book is “a site of social exchange” “across a stream of exchanges and debates” (Drucker, 2014).

From the perspective of authors the digital book is an artefact “‘complete’ for only the briefest of moments”, “layered”, “intertwined” (Mod, 2011). For Philips, one of the disadvantages

10 “Many animals in the Arctic have white fur. We usually explain this by saying that white is the best color for the Arctic environment, for white creatures escape detection more easily than do others. This is not of course a natural science explanation; it is an explanation by reference to purpose or function. It simply says that these are the kinds of creatures that will ‘work’; that is, survive, in this kind of environment.” (Simon, 1969)

is that the author may forgo the relief of “a fixed and final point to a book [...] free from the curse of constant updating” (2014). For authors and editors, the book had become a digital file since the hidden revolution of the early 2000s. According to Thompson, ebooks highlighted by default a characteristic of the book as an “elegant union of content and form in a particular physical object” (2010) and digitisation made things *more complex*.

4.3. Authoring as a job: self-publishing and designing

Professors of ICS Philippe Bouquillion, Bernard Miège and Pierre Moeglin described a “culture of amateurs”^{*} in which “users-contributors become media”^{*} (2013). Researchers involved in digital humanities reckon that “an increasing number of scholars take a do-it-yourself approach to publishing” (Fitzpatrick, 2011) by “self-authoring their work” (Burdick & Willis, 2011). Beyond self-authoring their own work, scholars publish the works of others. Such an example of hybrid knowledge book is the “*catalacte*” *Design et innovation dans la chaîne du livre* (Vial; i.e. a *catalacte* is an hybrid of art exhibition catalogue and conference proceeding—*actes de colloque* in french) which is one of the cases studied in this work. In short, it is a common trait of disruptive innovation, for professor Clayton Christensen who coined the term, that it is coming from outside of the industry. In this case, the form of the disruption would be self-authoring and self-publishing. In a read-write culture¹¹ it has actually become increasingly difficult to disentangle authors from readers as they have become users-contributors, and publishers might be disintermediated by this entanglement.

Can designing supersede authoring? As e-books will not replace printed books, designing will not replace writing. But it can add layers to it, augment it. Hence curating and composing might be as important, or even more so, than producing original content. With desktop publishing, writing and editing could be joined with typesetting and layout design in the hands of one person and, for Schnapp and Michael, “this era spawned the concept of the designer as author”.

5. Intermediaries’ perspective

5.1. What do editors and publishers value?

Experts agree that publishers can draw on four things: 1. the track record of the author; 2. comparable books; 3. the author’s platform; 4. what other people think¹², and publishers insist that *content* “is the main driver of their business” (Jub, 2017).

11 Souchier, Emmanuël, Yves Jeanneret, & Joëlle Le Marec, éd. 2003. *Lire, écrire, récrire. Objets, signes et pratiques des médias informatisés*. Bibliothèque du centre Pompidou, coll. “Études et recherches”. Paris, France; Dacos, Marin, éd. 2010. *Read/Write Book : Le livre inscriptible*. Traduit par Virginie Clayssen. Read/Write Book. Marseille: OpenEdition Press.

12 [1] the ‘track’ [...] Thanks to Bookscan, the sales history of any book published after 2000/1 is now public knowledge [2] ‘comps’ [...] essentially an exercise in building best-case scenarios by analogy [a way] of hedging the indeterminacy in order to attach some value to the new book in advance of knowing what the real value is. Thinking by analogy [3] the position from which an author speaks—a combination of their credentials,

From their perspective, digitisation urged publishers to be more inclined to “confuse the telecommunication economics with media economics”*; i.e. to favour the “purely technological use of convergence” over the symbolic value and capital of an “economy of sense [and] signs”* (Bomsel, 2013). For Bhaksar it entails that publishing is more service driven than product driven and it “reflects the evolving nature of framing in a digital world”, i.e. “the shift in value to the tools and services to package content, rather than the act of packaging itself”. This has caused confusion between process (software publishers) and content (book publishers). For instance academic publishers’ perception of their activity has led them to change their strategy to become more information specialist than content packagers. This trend has doubled with another one from ownership to (preferably free) access (see for instance Rifkin, *The Age of Access*, 2000 and Anderson, *Free*, 2009) that has incentivised them to evolve gradually from the traditional publishing model of selling content, to selling access to content, to allowing free access to content but charging for producing structured content and for providing value-added services linked with content.

5.2. Can designing supersede publishing?

Some designers have gone beyond the mere exploration of publishing and have become publishers. Their first reason to do so was to design a content true to its form and maintain control over its production, and the second was to organize their work in a designerly fashion:

- For example, in 2014 typographer Paul Stiff described his publishing activity in design research as “design for reading”* and as an attempt to “materialise through the form and substance what is advocated by the text itself”*. His colleague Edward Tufte founded Graphics Press because “a full control of designing and publishing was an obvious and necessary intellectual choice” in order to enable him to do what he wanted to achieve in terms of design (that no economically rational publisher would ever have allowed). For Michaels, designing books is political, it is “related to general questions of labor and leisure—the sense that people who spend most of their lives working may not be inclined to come home at night to further labor away through reading long, densely written theoretical books”. So, a reader should be able to quickly skim the book (as aided by various typographic devices), as well as closely read it through cover-to-cover, but it shall remain his decision.
- At Hyphen Press, Robin Kinross describes how small teams of author, designer and editor are informally gathered around and dispersed after each project. Their roles are well defined and he describes each of them as “book designers with an opinion on the content of the book”*.

6. The publishing revolution or evolutions in publishing?

The shift to digital is accelerating; more material than ever before is available free of charge to end users; and technology companies large and small are challenging the business models of the last 500 years. (Philips, 2013)

visibility and promotability, especially through the media [...] the milieu in which an actual or potential author [...] demonstrates their ability to reach an audience [...] is particularly important for non-fiction books [it] creates a pre-existing market for a book [4] what other people think” (Thompson, 2010)

In the 2013 annual report of Cambridge University Press (the oldest still operating publishing organisation in the world), its chief executive Peter Phillips expressed his concern (above). In other words, this is a Gutenberg moment and publishing has been confronted with Schumpeterian creative destruction. Bouquillion, Miège and Moeglin (2013) express it as a dual movement of industrialisation of culture and culturalisation of industry.

New promising approaches have emerged such as Bhaskar's "frames" (2013) and Bomsel's "publishing protocols" (2013). As Frania Hall (2019) advised in her chapter "Organizational structures in publishing", the Druckerian concept of "knowledge workers" (1996) and the "value chain" by Porter (1985) need to be revisited. I suggest they should be reconsidered and augmented with the three concepts of 1. the "creative class" (Florida, 2002), 2. the diagrammatic model of a new generation of business model canvas (Osterwalder and Pigneur, *Business Model Generation*, 2010), and 3. the integrative approach of value in design thinking represented as the intersection of the three dimensions of desirability (design), feasibility (technology) and sustainability (business) in a Venn diagram by the iconic Californian design studio Ideo.

6.1. Book mediation is in a crisis

Intermediation can be problematic because the stakeholders have different interests. But they do not necessarily have to be conflicting. As Jubb observed, "the journey of a text from author to reader" indeed "involves a complex array of players" but the main problem is not complexity in itself. What is undesirable is the "lack of understanding of the activities and roles of the different players". Although nobody knows what the future of the books (academic and the rest) will be and what "layers of complexity need to be preserved for the future", the "discovery services and delivery systems are not currently well-attuned to the needs of readers" and therefore informed dialogue should be encouraged between the many different players.

Disintermediation is not a solution. In the current context of "the mass amateurisation of publishing" (Bhaskar, 2013), the distinction between authors and writers has been blurred. But this much larger pool of potential authors act as their own editor, designer, and promoter "because of circumstance more than choice"¹³ (Schnapp & Michaels, 2013). For Guffey, Michaels, & Schnapp (2014) a problem is that most authors "don't know what actually goes into the making of a book". In the field of scholarly publishing a problem remains that "in general, author experience of publisher services on their last learning resource publication was not particularly positive" (Collins & Stone, 2019). In addition and across all fields of publishing "the vast majority of writers do not earn enough money to support themselves" (Phillips, 2014).

Publishing experts on both side of the Channel (e.g. Vigne, 2008 and Thompson, 2010) concur that book mediation is currently undergoing a crisis at its periphery. Those are the two areas where personal contact and relations of trust are vital: first the editorial organisation which

13 Respondents seek "services in the form of editorial support, design or production." (Jub, 2017)

interacts with authors and agents upstream¹⁴, and second press, distribution, marketing and publicity downstream. Publishers are “janus-faced organizations” which compete in the *market for content* and in the *market for customers* (Thompson, 2010). But it can also be argued that the general media ecosystem which publishing is part of—the so-called information society at large—and the core of publishing itself are affected.

An illustration of how the issues facing publishing in the digital era have evolved in the last decade is given by the two books *L'édition électronique* (Mounier & Dacos, 2010) and *L'édition à l'ère numérique* (Epron & Vitali-Rossati, 2018) in the collection “Repères”¹⁵. Both books are state of the art presentations of digital publishing for non-specialists. In 2010, Marin Dacos and Pierre Mounier quoted the famous book historian Roger Chartier and considered that digital text has at once been challenging “the three historical revolutions which constituted the book as we know it”¹⁶. Less than ten years later, Benoît Epron and Marcello Vitali-Rossati reckoned that “the ‘digital revolution’ has not really happened”*. Instead the digital culture is a continuation of the pre-digital culture “more in a matter of degree than in a matter of quality”*. Hence the semantic drift between the titles of these two books from an all-encompassing *Electronic publishing*—which was supposed to absorb all pre-existing forms of publishing—to *Publishing in the digital era*—which leaves room for “pure” electronic publishing and the de facto hybrid digital-and-print publishing.

Mounier and Dacos were not trying to give a definition of publishing but they wanted to describe what electronic publishing was. They proposed three stages of electronic publishing (i.e. *numérisation* “digitisation”*, *édition numérique*¹⁷ “electronic publishing”*, and *édition en réseau*¹⁸ “web publishing”*); for them “the worst case scenario of disintermediation has not happened”*. Thus, the mediating function of the publishers has not disappeared. Epron and Vitali-Rosati agreed to define publishing as a “mediating process”*. They also borrowed Bolter & Grusin’s (1998) concept of “remediation” (a media imitating the typical features of another media) to define the nature of this change. For example, “pages” displayed by digital media is

14 “Most of the major houses in New York and London will no longer accept submissions from authors who don’t have agents [they] don’t want to negotiate financial and contractual details with authors. They prefer to differentiate between the creative process of writing and editing [...] and the business aspects [...] editors have, in effect, outsourced the initial screening process to agents.” (Thompson, 2010)

15 The series “Repères” is hosting “rigorous synthesis” written by experts and researchers for students, fellow researchers from other disciplines and the general public. French publisher La Découverte presents its collection of pocket books of less than 128 pages as *accessible* both in terms of format and of price at less than €10 (page viewed on 21st August 2019, <https://www.collectionreperes.com/maison/index.php?id=20>).

16 The book today is defined by three features: “a codex in which text is organised into pages, a *libro unitario*, in which each work is associated with a distinct physical object, and text materialised in print”* (Mounier & Dacos, 2010)

17 “Digital publishing corresponds to a second age of electronic publishing in which text editing is digitally native but is not yet specifically designed for use in a network.”* (Mounier & Dacos, 2010)

18 Text 2.0 is the result of “a very powerful mediation”* which traditional players are not used to. It is expressed by “[1] the design of computing platforms; [2] the definition of writing and reading rules; [3] community management; [4] data processing algorithms” (Mounier & Dacos, 2010)

a graphic remediation of print media, and conversely our contemporary reading experience of print media is deeply influenced by our digital culture. The concept of “editorialisation”, coined by Bachimont, and developed, amongst others, by Vitali-Rosati, further helped and describe the differences between our digital experience and traditional publishing as summarised by the three issues of the technological change; the difference between an edited object and an editorialised object; and the open nature of the editorialisation process.

Another difference between the two books was the importance given by Dacos and Mounier to the development of digital publishing “defined by the economic and legal environment”*, whereas Epron and Vitali-Rosati were more concerned with overall political and intellectual dimensions affecting access to knowledge which could “possibly reconfigure the sources of authority and power”*¹⁹.

6.2. How do p-books compare to e-books?

The general assumption is that, with a few exceptions, any new models for the book will be digital. [...] an enduring attachment to print that is neither sentimental nor habitual: print just happens to do some things particularly well, and will no doubt continue to do so. (Deegan, Marilyn. 2017. “Academic Book of the Future Project Report”. London, UK: AHRC & the British Library).

Bouquillion, Miège and Moeglin warn that simplistic notions of “digital and non-digital should not be opposed”* (2013). Digital technologies should instead be considered in terms of *systemic relationships* between use, technology and content. So, the *complex* relationship between print and digital technology must be considered.

Books have been born digital for almost forty years. The iceberg metaphor is apt at describing the book publishing activity which bulk is digital (with the overwhelming importance of digital technologies) and tip is printed-and-bound artefacts and/or brick-and-mortar distribution. The meaning of “digital technologies” that I favour draws on one hand on digital humanities academic Milad Doueïhi’s 2013 definition of *digital* as both a cultural experience (user interface as man-machine and man-machine-man interfaces, and digital-only or hybrid digital-and-physical user experience) and a technological (computing) phenomenon, and, on the other hand, I also take into account that ICT “must not only be considered as media for practices or vectors for contents and the (somehow systemic) relationship between practices, technologies (or media) and contents must be emphasised”* (Bouquillion et al., 2013). There is a rich bibliography about this phenomenon (e.g. Negroponte, Nicholas. 1995. *Being Digital*. Vintage Books. US; Nunberg, Geoffrey, éd. 1996. *The Future of the Book*. University of California Press. Berke-

19 Intellectuals and publishers André Schiffrin in the US and Éric Vigne in France amongst others observed that the publishing industry was conservative. In the english-speaking countries, it used to be considered a “profession for gentlemen” with “primarily white, middle-class employees” (Schiffrin, 2001). And the prevailing “editorially correct”* attitude did not allow these book people to “understand the new relationships in this force field”* (Vigne, 2008).

ley and Los Angeles, CA, USA; Pfiffner, Pamela. 2003. *Inside the Publishing Revolution. The Adobe Story*. Peachpit Press. Berkeley, CA; Cope, Bill, et Angus Phillips, éd. 2006. *The Future of the Book in the Digital Age*. Chandos Publishing. Oxford, UK; Dacos, Marin, et Pierre Mounier. 2010. *L'édition électronique*. La Découverte. Repères. Paris, France; Sarzana, Jean, et Alain Pierrot. 2011. *Impressions numériques. Quels futurs pour le livre ?* Cerf. Paris, France; Robin, Christian. 2011. *Les livres dans l'univers numérique*. La documentation française. Paris, France; Benhamou, Françoise. 2014. *Le livre à l'heure numérique*. Seuil. Paris, France; Phillips, Angus. 2014. *Turning the Page: The Evolution of the Book*. 1 edition. Abingdon, UK: Routledge; Cahier, Marie-Laure, et Elizabeth Sutton. 2016. *Publier son livre à l'ère numérique - Autoédition, maisons d'édition, solutions hybrides: Le guide de l'auteur-entrepreneur*. Eyrolles; Epron, Benoît, et Marcello Vitali-Rosati. 2018. *L'édition à l'ère Numérique*. La Découverte. Paris, France). Since I do not presume that I can add anything original to what has already been written by competent authors, I will not elaborate further on this issue.

What is of interest is not so much that books are born digital, but WHAT HAPPENS TO DIGITAL BOOKS WHEN THEY GROW UP? I do not know if e-books are still in their infancy or if they have reached their adolescence, but I do argue that they have not reached their adult age yet. Book historians (e.g. Robert Darnton, Roger Chartier) have shown that printed books have coexisted with manuscripts for decades (at least two centuries) and that their modern form has slowly evolved and stabilised in the 19th century. As *The Economist* put it in their 2018 paper “The future of the book”: books “are a technology in their own right, one developed and used for the refinement and advancement of thought. And this technology is a powerful, long-lived and adaptable one.” So even if there is an accelerating pace of history at our period, it is doubtful that the form of e-books could have stabilised in less than three decades.

In this work, e-books are considered as they are and not how they should be. If not otherwise stated, it means that when I refer to e-books, I mean orthogonal e-books (i.e. the equivalent electronic edition to the printed book's as produced by crossmedia). A recent report by research firm Enders Analysis predicts that in a few years' time “we will look back at e-readers and remember them as one of the shortest-lived of all consumer media devices”. Furthermore, the increase of the sales of e-books has been exponential since they took off two decades ago. But they have tended to plateau since 2017-2018. It has yet to be seen that they have grown out of their eruptive crisis.

WHY ARE BOOKS STILL PRINTED? Possible explanations are twofold and drawing on cognition and design.

First, in cognitive terms, Baccino & Draï-Zerbib explain that reading on screen is 25% to 30% slower than on paper and less efficient for specific tasks (e.g. correcting mistakes). A paradox is that “freedom of navigation” in, and between, electronic documents is misleading for the reader. Hypertext documents lack visible pattern and allow numerous exploration strategies (e.g. scanning, browsing, searching, exploring, wandering). With so many choices at hand, it proves

difficult for the reader to maintain a consistent strategy,. And without a consistent strategy understanding becomes very difficult or even impossible. This creates an anxiety which results in a memory overload causing a 30% loss of the reader's workforce.

Readers don't want bells and whistles but a good story, well told, with no distraction. There is a good argument that print production values become more, not less, important in digital environments. (Bhaksar, 2013)

Second, another paradox unveiled by book designer Paul Luna is that the ease of electronic access and so-called responsive design can be detrimental to the "visual enhancement of text" and the integration of illustrations with consideration for their content or significance to the text. Established book typographic standards are indeed a form of good design as they are presenting language in a logical way so that the visual presentation "reflects the underlying semantic structure of the text" and illustration elements "guide the reader and enhance meaning". The design of printed books is simply better than the design of e-books (double page spread, thickness, touch and feel, etc.). Compared to print books, electronic devices deprive readers of their haptic senses. Metaphorically speaking, losing one page out of two is like losing one eye. It deprives people of perspective since they need their two eyes to get a sense of 3D. In a way, losing one page (compared to the double page spread of the codex) is flattening our reading perspective (see our case about *Unflattening*). We are trapped on the page with no visible escape, no "vanishing point" to simulate our sense of perspective (as in the pictorial technique invented in the 15th Century in Florence). And maybe one of the big differences between reference and knowledge is perspective. This is an aim of knowledge design (Schnapp) to take us from where we stand—a point where we do not know—to make us live an experience of learning through which we will hopefully reach another point—a point where we have been taught.

6.3. The knowledge economy has become a creative economy

Writing was described as the most important "technology of the intellect" (Goody, 1977), that later made publishing possible (amongst other things) but was initially designed for bookkeeping. So in return it seems only logical that a key element of the book business is capitalisation. And, indeed, for Bhaksar publishers were "proto-capitalists" from their historical inception; i.e. "venture capitalists" of textual production (advancing funds to authors and bearing the monetary risks of publication). Publisher and philosopher Gérard Wormser also described the publisher as the "symbolic banker"* of the writer. As a matter of fact, the worth of an imprint has largely been associated with his catalogue²⁰, his backlist which translates as a major asset in his balance sheet. In other words, for Goody (1977) knowledge accumulation was a cultural process "from generation to generation" perceived by historians of culture as "the growth of knowledge" with knowledge understood as *content*. In this perspective the process of content

20 « Un élément clé de ce qui a fait le livre jusqu' alors : la capitalisation » « pour l'éditeur la marque de son savoir faire, ses papiers d'identité professionnelle en quelque sorte : un catalogue [...] bilan d'un chemin déjà parcouru et l'esquisse d'un avenir à tracer. » (Vigne, 2008)

accumulation in a knowledge economy is similar to the traditional approach of capital accumulation. In addition, the value of each book is also linked to its sales potential as “its capacity to generate economic capital” (Thompson, 2010). Phillips also emphasises that “publishing is part of the knowledge economy”.

But the capitalistic value of publishing is not merely perceived as content (as accumulated knowledge) which is a tangible booked asset, but increasingly as symbolic capital (i.e. the sum of the quality of the books published) which is goodwill—an intangible asset. For Bouquillion, Miège and Moeglin, in today's cultural industries use value and exchange value have actually become “over-determined”* by symbolic value. The three characteristics of these symbolic goods are their “imaginary coefficient”* as *credence goods*; the claim of a “symbolic profit”* for the consumers (or “prosumers”²¹) brought by these *experience goods*; and the overarching “search for novelty”*. According to the sociologists of creative industries (e.g. Jenkins’ theory of *affective economics*) these features constitute the asset of brand value “resulting from sophisticated symbolic differentiation and networking”*.

Bhaksar has argued that “change is the norm” and accordingly the ongoing *hybridisation* of the products of publishing should continue crossing different areas of knowledge and activity (symbolic, economic, technological, object-based). It would mean that publishing is part of a creative economy²². Even though Bhaksar pays a tribute to the notion of content with the title of his book *The Content Machine*, he is keen to consider that publishing capital is subject to the disruptive effect of Schumpeterian “creative destruction” with fortunes made and lost much quicker than in a more generationally stable knowledge economy.

Would *The Rise of the Creative Class* (Florida, 2002) imply a decline of the “knowledge workers” (Drucker, 1959, *The Landmarks of Tomorrow*)? Since the early 2000s, societies and most of their institutions (including universities and scholarly publishers) have been under paradoxical injunctions to innovate²³. It does not necessarily imply that knowledge workers will be replaced by a spontaneous generation of the creative class²⁴, but it means that knowledge workers should be more creative.

21 “The value in the system, which users are willing to pay for, is the means of interacting with the content, rather than the content itself. Scholarly publishing itself appears to be in a similar circumstance [as Flickr]; its content is primarily ‘user-generated’ and is made precisely to be shared [...] the audience is composed of the same people who are producing the content in the first place” (Fitzpatrick, 2011)

22 This term appeared in the eponymous John Howkins’ book *The Creative Economy* (2001).

23 “Creativity and knowledge are fast becoming powerful means of fostering development gains. In this context, the interface among creativity, culture, economics and technology, as expressed in the ability to create and circulate intellectual capital, has the potential to generate income, jobs and export earnings while at the same time promoting social inclusion, cultural diversity and human development” (*Creative Economy Report 2010*, New York: United Nations, 2010).

24 “Richard Florida’s descriptions of the emerging ‘creative class’ in society, [...] includes people in science and engineering, architecture and design, education, arts, music and entertainment whose economic function is to create new ideas, new technology or new creative content” (UN, 2010).

WHY HAVE KNOWLEDGE BOOKS NOT DISAPPEARED? The web was initially based on hypertext and has intrinsically evolved into a semantic network. In semiotics term, it is based on signifiers but is weak on signifieds. The web is not anti-semiotic, but it is a-semiotic. It is not self-sustaining since it needs users—who also are contributors. For instance, Wikipedia thrives on unpaid labourers who voluntarily toil and produce free User-Generated Content (UGC). Wikipedia is part of the web by design, while books are stand-alone by design. Wikipedia articles are connected to each other while books can potentially be connected to other books, but not necessarily. More generally, the question of whether e-books will replace p-books seems to be foregone. Users such as students in information science whom Tracy calls “strategic e-book users” (2020) make “strategic choices among different e-book and print formats based on their tasks” (see Table 2). Even though most of them prefer p-books (“more reliable and convenient”), they appear to be “pragmatists” (i.e. they “make do” with multiple ebook formats broadly and freely available in academic environment). In this context, the question is not so much “are users ready for e-books?” but instead “are e-books ready for users?”.

Table 2. Strategic users of e-books

		Use	
		low	high
Awareness & satisfaction	high	“efficient users” ^a “pragmatists” use e-books when convenient ^b	“satisfied users” ^a “technophiles” prefer e-books ^b
	low	“learners/lurkers” ^a print-focused “book lovers” ^b	“browsers” ^a “printers” are challenged by the usability and accessibility of current interfaces ^b

Typologies of e-book users (^a Martin Borchert, Clare Tittle, Alison Hunter, & Debby Macdonald, “A Study on Student and Staff Awareness, Acceptance and Usage of E-Books at Two Queensland Universities,” presentation at 14th Australian Library and Information Association’s Information Online Conference and Exhibition, Sydney, Australia, January 20–22, 2009; and ^b Aaron K. Shrimplin, Andy Revelle, Susan Hurst, & Kevin Messner, “Contradictions and Consensus—Clusters of Opinions on E-Books,” *College & Research Libraries* 72, 2, 2011: 181-90).

Chapter 8.

The framework of design thinking

Design thinking is geared towards innovation for and by designers and non-designers together. Because design is a synthesis of form and function involving ergonomics and artistic appreciation, and designing is an experiential process, they are complex to explain and to assess. A short history of design and of design thinking could contribute to a better understanding of these fields, of how they model and are modelled by the successive ages and different cultures in which they have thrived. Design being cultural, the question of the value it creates is ambiguous. It has always been and still is a controversial issue and revolves, amongst other considerations, around good design and/or designing for good. Design and publishing epitomise human activities (involving different stakeholders) for humans (comprehending functional and emotional needs and aspirations) by humans (AI has not proved to be a viable alternative), and increasingly with humans (i.e. collaborative).

1. A diachronic perspective

1.1. The meaning of design over time and places

This is a short history of design²⁵ from the 15th century in three periods. The three steps in the history of design should be considered as cumulative rather than successive. Design has become increasingly complex by first proposing to model complex objects (such as buildings); second by thinking reflexively about the process of designing complex artefacts as a scientific theory of art; and third by striving to combine a science of the artificial and the social and natural worlds of humans and their environment. In other words, it is a teleological evolution from good design, through good design process, to designing for good. As always with history, it is not consistent with a predetermined religious doctrine of so-called “intelligent design” but it has more to do with serendipity and heuristics.

There is a general agreement in the literature that the original context of design at the Renaissance was architecture (“architectural origin” in Vial, and “linked first with architecture” in Murphy). By the sixteenth century, the verb “to design” reflected two core senses: “to plan or intend something; and to draw or trace out forms” (Murphy, 2016). American anthropologist Keith M. Murphy believes that the “the two senses were not necessarily combined” (2016) while French philosopher Stéphane Vial (2013) claims that (in the context of Florence circa 1420) they were associated (e.g. by the architect Brunelleschi “in order to simultaneously separate and unite two essential steps of creation applied to erecting buildings”^{*}). Two colleagues of Vial at the Université de Nîmes, Alain Findeli and Rabah Bousbaci (2005), proposed an epistemological approach of design in the 19th century. They offered definitions of aesthetics as

25 For more details see for example *Design : introduction à l'histoire d'une discipline* (Midal, Alexandra, et François Laurent. 2009. Paris: Pocket).

a “science of art”^{*} and of technology as an applied science and thus considered design as “applied aesthetics”^{*}.

The dictum *form follows function* was coined by the American architect Louis Sullivan in his article “The Tall Office Building Artistically Considered” published in 1896 and was somehow repeated in a text by the Bauhaus director Walter Gropius in 1926²⁶: “the Bauhaus seeks—by the means of systematic theoretical and practical research into the formal, technical and economic fields—to derive the form of an object from its natural functions and limitations”. The post- or neo-Bauhaus approach of the late 1950s—with the reestablishment of the Bauhaus tradition in Ulm, Germany—strengthened the bias to consider design as a science, or the urge to design scientifically and rationally.

In reaction to this “Planning Mania” (Lindinger in Bousbaci, 2008), Simon introduced the concept of “bounded rationality” in 1969 in his influential book *The Sciences of the Artificial*. Another effect of the “functionalist dominance” of design education since the 1950s meant that students were too seldom reminded that the *raison d’être* of design is to make “products meaningful to their owners and users” (Michl, 1995). A reaction to this self-centered “scientific” approach came in 1976 when Victor Papanek published his *Design for the Real World* in which he accused designers of “catering to the small percentage of consumers who have everything” (Vogel, 2009). It paved the way for a more people-focused design and the next phase of the Findeli and Bousbaci model (see Figure 19) with its eventual focus on the actors “the ‘object model’ is theoretically dominated by aesthetics, the ‘process model’ by the philosophies of science and technique and the ‘actor model’ by ethics and phenomenology” (Lécho Hirt *in* Nova, 2015). This is a multidisciplinary approach where “knowledge comes from social sciences, sociology, anthropology, ethnology, and user observation” (Borja de Mozota, 2008). Eventually, “emerging design disciplines of the 21st century are more concerned with the immaterial; with systems, processes, organisations, interfaces, experiences and relationships. Similarly, in the business and management sectors focus has shifted from production and distribution to reception and ongoing interaction” (Stewart, 2011).

26 Frank Whitford, 1984, *Bauhaus*, Thames and Hudson, coll. “World of Art”, London



Figure 19. Philosophical interpretation of the typologic model, fig. 8 in Findeli & Bousbaci, 2005.

The Latin *de-signare* (“mark with a sign”) which is to be found in *di-segno* (draft) in Italian and *de-sign* in English, design is to be apprehended, as a project in methodological conception, as an anticipation through signs (from French *dessin* “drawings”)* (Vial, 2013)

The term “design” is polysemic. From its origin in the 15th century it has “two core senses” which are on the one hand associated with “to plan or intend something”, “to conceive”, “a project”; and on the other “to draw”, “aesthetics”, “signs”. Another issue is that “design” (the English word) is not translated into the various languages of the different countries where it is used. It does not imply that it is understood in the same manner by everybody and everywhere. In addition to national discrepancies, professional backgrounds also make a difference. For example in Anglo-Saxon countries *to design* is to conceive and “the exclusion of delight is particularly apparent in Engineering Design, where it is often seen as superfluous—a trivial distraction” (Glanville, 2009) whereas in France “the vision of the Académie des Beaux-Arts draws on industrial aesthetics”* (Cazaux, 2013) and “in a country where the written culture is predominant, design belongs to the artists’ field”* (Gamba, 2016). This relationship with art is linked to the appreciation of design was initially as an “applied art” with ties to industry. So, it seems that the different interpretations are not only geographical and language-based, but also deeply rooted in the populations of designer *versus* non-designers.

1.2. A short and illustrated history of design thinking

The history of DT written by academics of the field started at the post-Bauhaus period in the United States and runs parallel to the history of design (see Figure 20) with the founders of American industrial and graphic design who worked in corporate and consulting firms during the 1920s and '30s (e.g. Harley Earl, Henry Dreyfuss, Walter Dorwin Teague, and Donald Desky, and Raymond Loewy). They developed methods by which design thinking began to serve the needs of emerging US corporations.

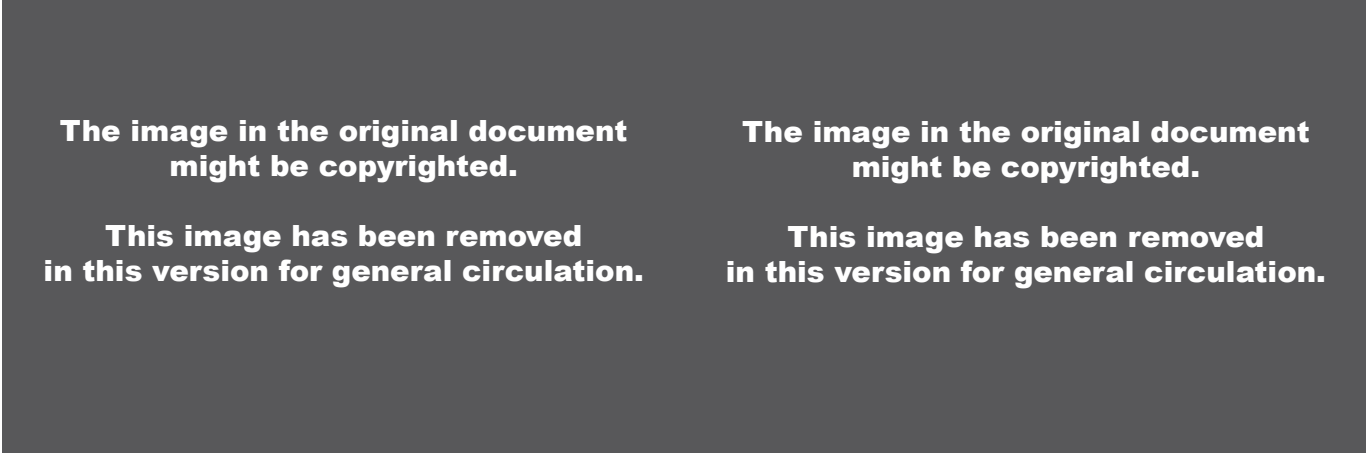


Figure 20. Some landmarks in the evolution of design thinking in Bousbaci, 2008, fig. 1

Design in British and American handbooks of the 1960s was acknowledged as “the essential purpose of engineering” (Asimow, 1962) and presented in a straightforward manner “as a sequence of decisions leading from the original statement of the requirements to the specification of the details of the ‘hardware’ to be manufactured” (Marples, 1961). In this context DT had to be a rather linear logical sequence of events, a logic tree (see Figure 21), arising from the recognition of a need by marketing specialists to the manufacturing of a product under the supervision of engineers. The “problem formulation” was a top-down given, usually understood to be provided by engineers.



Figure 21. The top-down design process in Marples, 1961, fig. 9

Since the early 1980s, research in DT had explored issues related to designers themselves as “reflective practitioners” (Schön, 1983) who are dealing with “wicked problems” (Buchanan, 1992). This post-rationalist model of the designer has been “a move from the realm of ‘technical rationality’ to a rationality of reflection-in-action” (Bousbaci, 2008). In the post-Bauhaus functionalist approach corresponding to the second step of the Philosophical interpretation of the typologic model, a key social challenge for the “actors” at the level 3 of the Philosophical interpretation of the typologic model was to foster “more cooperation and mutual benefit [...] between those who apply design thinking” (Buchanan, 1992). For director of the Design Division at the Mechanical Engineering Department of Stanford University Rolf A. Faste, one issue was that engineers *objectified* people (i.e. “they become comfortable treating them like billiard balls, containers to be filled, or products that can be run down assembly lines”²⁷). His criticism of the engineering culture of the time and subsequent design of more solution-centered courses (see Figure 22), was inspirational for the future “empathic blend” of DT to be unveiled by Tim Brown and David Kelley at Ideo and the d.school in the 2000s.

27 Annie Gentès in 2008 showed that the text produced by a team “evacuated all subjective marks and offered a general objectified transcription”*, hence “characters became less individuals than ‘agents’”* with no interest for “their psychology, profession or skill”* and these “‘actors’ are described by their moves and gestures in a kind of living mechanism”* (“Design et médiation créative dans les technologies de l’information”. *Hermès, La Revue*, 50: 8389).

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Figure 22. The creativity kernel, website of the Faste Foundation [viewed August 2017]

A shift occurred in the 2000s in California in a way that is more inspired by their professional practice than by the academically published design research: “the books and papers [Tim Brown (2009) and Roger Martin (2009)] that have done most to popularize the idea of design thinking mostly ignore this literature” (Kimbell, 2011). It was a conceptual shift from “those who apply design thinking” towards people considered as subjects rather than objects. Co-founder of Ideo Tim Brown (2008) has coined it as “the full spectrum of innovation activities with a human-centered design ethos” (Brown & Wyatt, 2010). A challenge is “to move from designing ‘things’ (objects) to designing Things²⁸ (socio-material assemblies)” (Bjögvinsson et al., 2012). In order to understand users better, designers are thus expected to widen their skillset to encompass ethnography. Ideo in California was moving “from designing consumer products to designing consumer experiences” and needed to brand their new practice to prospective customers. They started with “design with a small d” but Kelley (also the founder of Stanford University’s Hasso Plattner Institute of Design, aka the “d.school”), noticed that “he found himself inserting the word ‘thinking’ to explain what it was that designers do” (Brown & Wyatt, 2010). American designer Christiane Drews noted in 2009 that design thinking was not satisfactory because it may be ambiguous, and most of the designers she interviewed had found their own term, such as “open thinking” or “concept thinking”. British designer McCullagh (2010) observed that the concept is “hazy enough”:

design thinkers published books that expanded on what they meant; business leaders started to pick up the idea, while at the same time many design managers started to drop it.

Both professionals and academics such as professor in Design Management Hilary Collins (2013) have expressed a need to “develop a common understanding and language”. Her fellow Kees Dorst of the Faculty of Design, Architecture and Building at the University of Technology Sydney was alarmed (2012) by “the general confusion”. Despite all its flaws, and with a sense of controversy, Vial acknowledged that “the very worth of the Design Thinking concept is that it might be the only current design concept that designers were able to produce to define and

28 “Originally, ‘Things’ go back to the governing assemblies in ancient Nordic and Germanic societies. These pre-Christian Things were assemblies, rituals, and places where disputes were resolved and political decisions made.” (ibid.)

explain what they do”* (Cazaux, 2013). Despite the controversies in the design communities—both professional and academic—, DT has been thriving in the business world.

People will be referred to as “users” in Ideo’s blend of DT and User Centered Design became such a successful practice as an industry standard that it has been enshrined by an ISO standard (ISO 13407—User Centered Design, revised in 1999 as ISO 9241-210—Extended human-centered design process).

The dramatic shift—from products to users—was sudden and the ability of designers to balance this new skill with ethics is questionable.

On the one hand, designers are positioned as key interpreters of what end users “need”. They are expected to do this by using ethnographically-inspired techniques that help them understand the user’s perspective and situated actions. On the other hand, in practice this process shows little of the reflexivity of the social science traditions (Kimbell, 2011).

The concern for ethics is indeed deeply rooted in anthropology due to its problematic “past ties to colonialism”. Design history as a “handmaiden of industry” has only recently engendered self-reflection which “have converged to raise environmental issues and rampant consumerism as serious concerns” (Miller, 2014). Anthropologists Rita Denny and Patricia Sunderland (2014) acknowledged that the integration of ethnographic practices in the design process via companies like E-Lab, Ideo, and SonicRim in the 1990s had a significant impact on design firm process. There were intertwined trajectories with Europe at about the same time in the form of “participatory design”. Fellow Keith M. Murphy of the university of California (2016) discussed the rise of “design ethnography” in the business world since the 1990s as “an interdisciplinary methodology for accessing what people do, what they say, and what they think” and how “as an alternative to methods derived from cognitive psychology, ethnography allows businesses to understand people not simply as consumers”. This kind of thorough understanding does not only require skill and practice but also enough time and adequate funding. The problem is that “clients are unwilling to fund field research” (Miller, 2014). An unintended consequence is that design ethnography contributed to the “commoditization of ethnography as a service” (Baba in Denny & Sunderland, 2014).

There is a consensus in the literature that observation is important, for example because “people often can’t tell us what their needs are, their actual behaviors can provide us with invaluable clues about their range of unmet needs” (Brown & Wyatt, 2010). But anthropologists are adamant of the oversimplification of ethnography (as designers are of non-designers self-appointed “design thinkers” of all stripes). They warn that “many, including designers, see ethnography as synonymous with observation: a method that can be equally well executed by a social psychologist, sociologist, design researcher, or professional moderator” (Neese in Denny & Sunderland, 2014).

In the emergent subfield of “design anthropology”, a shared set of interests in material culture, human behavior, and social values encourages anthropologists to collaborate with designers on projects blending creative skills with an anthropological sensitivity to people’s lived experience (Murphy, 2016).

Anthropology and design differ on how they observe and on their respective focus. Anthropology is focusing “on human subjects and their interaction within and with the environment” while design is more interested by “the production of material culture and creation of the built environment” (Miller, 2014). Where anthropologist would “conduct a rigorous holistic study of the context and individuals involved [...] to develop *findings* that would then be used to inform decision making”, designers approaching the same problems would “generate *insights* that inform the design of prototypes” (ibid.). This “dynamics of thought”, this “rapid and partially unconscious recombinations of images, may result in ‘sudden insights’ and shouldn’t be disturbed by attempts to verbalise” for “it is not always beneficial to put ideas into words” (Dörner, 1999). According to professor Nicolas Nova of the Geneva University of Arts and Design, user-centred design is perceived as a deceit by some in the design discipline for two main reasons. First, “it deprives the designers of their initiative and responsibility”. Second, because of “the appropriation of ethnographical tools and vocabulary that have now become so common and sometimes so loose”. Communication has become a major concern in interdisciplinary teams: “Marketing teams talk about consumers. Research teams talk about respondents. Engineering teams talk about targets. Designers talk about users” (Neese in Denny & Sunderland, 2014).

Research into how to do design well is useful. Reducing this knowledge to methodologies is useful. But teaching these techniques as if they were the essence of design, is profoundly misleading. (Faste, 2001)

From the 1960s to the mid 2000s, models of the design process have gradually evolved. In his article published by *Design Issues*, Barry Wylant (2008) suggested an horizontal left-to-right chronological representation (see Figure 23) rather than the previous top-down *hierarchical* flow charts (see Figure 21). Another change is that the *logical* shape of the logic tree was replaced by a step-by-step approach that is less deterministic and more generative, as the “or” *exclusive* forks are replaced by the “and” *cumulative* arrows. The entry and exit points were also very different. The starting point was the more complex “design brief” versus the “problem formulation” and it was also a liberating “problem definition” versus a “problem formulation”. The outcome of the design process too was very different for it used to be a “solution” and became “design specification”. It can be interpreted as a change from a subordinate position to an intermediary one and a less hierarchical relationship between engineers and designers.

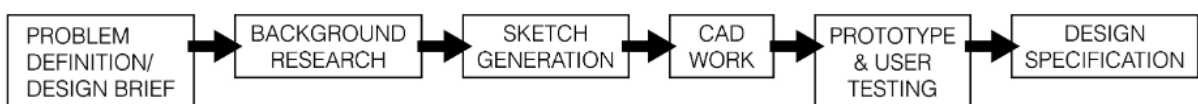


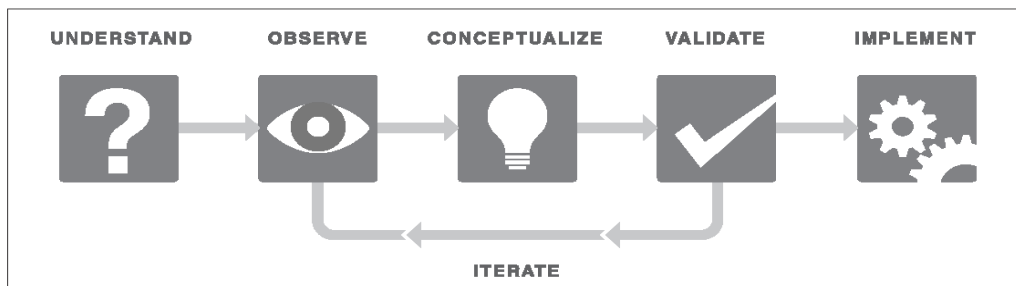
Figure 23. A suggested Process for Design, fig. 2 in Wylant, 2008

Managers, especially in the US, have been enthusiastic proponents of DT as is illustrated by this quote from the business magazine *Fast Company*: “Whether the protocol is outlined in a seven, four or even three stage process (see Figure 24) [...] it all comes from the same place a proven method that always delivers” (DeConnick, 2006).



Figure 24. The Design Thinking Innovation Process in Coakley, 2014, fig. 1

Kevin Clark and Ron Smith of IBM Marketing and Communications division endeavoured to propagate their firm’s blend of DT in the *Design Management Review* in 2008. Their mantra was “Design methods are orderly. Design methods are inclusive. Design methods are innovative.” The use of icons in the professional context (see Figure 25) also facilitated the appropriation of the method for non-designers—and possibly these drawn pictures are a trace of some designers’ involvement to produce images of DT. These images are also much richer than mere arrows for they would qualify as *symbols* which is the more elaborate of the three subclasses of signs in the Peircean semiotics (icon, index and symbol²⁹). They have also introduced another change with right-to-left arrows meant to figure iterative loops—compared to the previously one-direction (vertical or horizontal) linear models.



The experience design method IBM uses to explore problem solving involves observational research into spoken and unspoken client wants and needs and creating new concepts with validation and iteration phases before a product or service is released into the marketplace.

Figure 25. Experience design method IBM in Clarck & Smith, 2008

The design community had integrated the idea of feedback loops since the 1960s. Design has for example been described as “a cyclic feedback process that is fundamentally iterative” (McKim (1980, see Figure 26) “a process of *iterative* understanding” (Louridas, 1999) or a system which achieves goals “through *iterative* processes” (Dubberly & Pangaro, 2015). This view was originally developed by cybernetics—or “systems thinking”.

29 “A symbol is a sign which refers to the Object that it denotes [...] in the possibly imaginary universe to which the symbol refers” (Charles S. Peirce, 2011, *The philosophical Writings of Peirce*, edited by Justus Buchler, Dover Publications)



Figure 26. Express-Test-Cycle, fig. 20-2 in McKim, 1980

In this cybernetic view, the designer could be considered as a “machine being” (Morin, 1991) endowed with an internal cognitive model. In other words, he is at the same time a creative and a reflexive person, a dialectic individual. The designer does not have to be schizophrenic since he is not having “the exploration of problem-and-solution together, using ‘languages’ of drawing and modelling” (Cross in Cross et al., 1991) as a conversation with himself, but instead as “a reflective conversation with the situation at hand” (Louridas, 1999). He does not have to be a genius either (with the sometimes associated symptom of mental imbalance of the “mad genius”) because “the figure-concept back and forth process is no less systematic and logical than any other rational dialectic process” (Goldschmidt, 1994). “The phase of elaboration will often assume (and should assume) the form of a dialectical process.” (Dörner, 1999). There is a consensus in the literature that the process is not only iterative and dialectic; it is also heuristic, i.e. “it is unknown beforehand whether a particular of sequence of steps will yield a solution or not.” (Rowe, 1987) so “the outcome of this behavioural interaction is unpredictable (see Figure 27) and beyond what can be achieved by one participant alone” (Glanville, 2009). Design is generative, not descriptive. Designers “do not know what exact shape will emerge” but we shall add that one of their skills is that “they do know how to manipulate shape ambiguity and transform images in order to obtain a desired form” (Oxman, 2002).



Figure 27. The designing of an adjustable slide projector support , Fig. 1 in Dörner, 1999

Design thinking deals primarily with what *does not yet exist*; while scientists deal with explaining what *is*. That scientists *discover* the laws that govern today's reality, while designers *invent* a different future, is a common theme (Liedtka, 2004 in Martin & Christensen, 2013).

The turning point of DT as an icon of management was the famous article “Design Thinking” by Tim Brown (2008) in the influential *Harvard Business Review*. The illustration (see Figure 28) was printed on a double page with the text of the article flowing around it. The use of circular shapes of various surface (instead of standardised boxes), of double-pointed curved arrows (instead of one-direction straight ones), of pictures (instead of icons), and of colours (instead of black and white) completely changed the visualisation of the DT process by conveying a more “baroque” style compared to the previous “classical” more orderly compositions (as per the innovative sense given by Heinrich Wölfflin in his 1888 *Renaissance and Baroque*: “each innovation is a symptom of the nascent baroque style”³⁰). As Bruce Nussbaum wrote in *Fast Company* in 2011, framing of DT has become a key business issue “packaging creativity within a process format” expands “impact, and sales” [of DT]. Ideo has successfully packaged itself since the mid 2000s and established its blend of DT as a generic for the corporate world. It has disseminated it widely and smartly. For example, in order to increase its reach, Ideo has produced free “how to” brochures under Creative Commons, financed by sponsors and aimed at different communities such as educators (*Design Thinking for Educators*, 2012) or librarians

30 A parallel can be drawn between DT and baroque (which had largely been seen as decadent before Wölfflin). Briefly said, classic art was orderly and governed by rules pertaining to a higher order of things, a more natural than spiritual order. Important rules were perspective, the Golden Ratio and the Fibonacci Sequence. A master like Leonardo da Vinci was interested in art and engineering and, amongst his masterpieces and inventions, created the Vitruvian Man, an influential model of man. Artists of the following generations knew the works of their predecessors and the rules they had formulated. As creators, they were faced with the rather usual challenge of walking down the same path as their masters—striving to achieve virtuosity—or to explore different roads. Some of them decided on the second option and did not embrace the same project to achieve harmony. Instead they wanted to create maximum impact on their viewers, to appeal to their emotional senses. In other words they created discordance making use of harmonic rules, and in some instances bending them on purpose. For an example of this endeavour, we refer to the *Ecstasy of Saint Teresa* by Bernini and its discussion by Wölfflin. Amongst other historical paradox, baroque art was subjective and centered on man and emotion, at the same time as science and philosophy became less self-centered and emotional—as Galileo proved that we were not the center of the universe and Descartes wrote *Le Discours de la méthode (Discourse on the Method)* eloquently subtitled “*Pour bien conduire sa raison, et chercher la vérité dans les sciences*” (for guiding one's reason and searching for truth in sciences). Coming back to our parallel between DT and baroque, we hold the view that DT is not decadent engineering design. First, it is not decadent because it does not ignore the skills of the trade. On the contrary, it has elaborated on people's practice and training in engineering and in design or on group of people trained in either of these disciplines working together. Second, it does not have to be deemed decadent because it held a different view of man and of the world than the fields of engineering research or design research at the time. We share Bousbaci's opinion in his article (2008) on the “models of man” that the teaching of design theories “imposes the need for professors to explain some of the underlying philosophical roots and assumptions of the theoretical discourses to their students”.

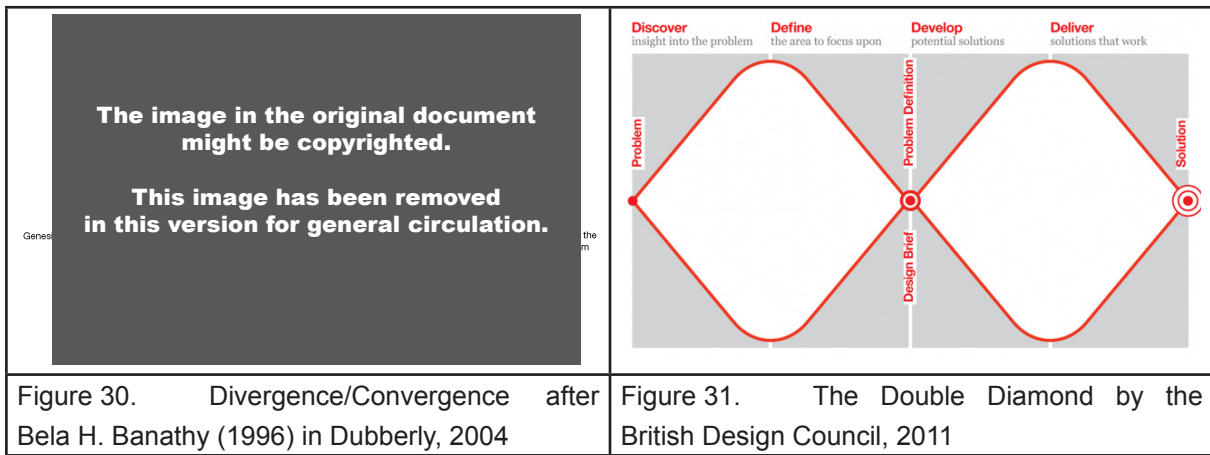
(*Design Thinking for Libraries*, 2015). Ideo’s communication strategy has been effective if it is to be assessed by how often Tim Brown, David Kelley and Ideo have been quoted in business journals and magazines worldwide for DT. An alliance between Ideo, Stanford University and the Hasso Plattner Institut has also helped with skills and fundings to ameliorate the DT process. It has materialised in the “Understanding Innovation” series published by Springer.

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<p>Figure 28. Design Thinking [simplified] in Brown, 2008</p>	<p>Figure 29. Introduction of temporality in Tim Brown's formalization in P��ch�� et al., 2013</p>

Even critical authors of DT such as Swedish designers Bj  gvinsson, Ehn, and Hillgren or French management professors Jean-Patrick P  ch  , Fabien Mieyeville and Renaud Gaultier could not help but refer to Ideo. “To us this perspective sounds like good old Participatory Design³¹, although we have to admit it has a better articulated and more appealing rhetoric” (Bj  gvinsson et al., 2012). When P  ch   et al. wished to discuss DT as a project management tool and suggested how to enhance the model (see Figure 29), it was based on Brown’s model. This figure both refers explicitly to Ideo’s founder and is a visual implicit reference to Ideo’s playful rounded style of representing the DT process.

Another representation of the DT process came from the British Design Council, i.e. the “Double Diamond” (see Figure 31). In this divergent/convergent model (see Figure 30) the process has hence become more than iterative or circular, it is dualistic. Its graphic design is also much neater, almost minimalist in essence, and does not give any explicit indication of sense as direction. It is simply implied that it should be read from left to right by the western world convention, but no arrow tells us which direction to follow.

31 “Participatory Design, seen as design of Things, has its roots in the movements toward democratization of work places in the Scandinavian countries. In the 1970s participation and joint decision-making became important factors in relation to workplaces and the introduction of new technology.” “Participatory Design, as it emerged in the 1970s, might theoretically and practically be seen as a ‘modern’ example of Things (or rather ‘thinging’, as Heidegger would call it). Latour has called for a thing philosophy or object-oriented politics.”



The “loop” (see Figure 32) is a synthesis of Ideo’s round shapes and of the Double Diamond. Drawing on existing representations has endowed IBM with the status of a follower (another hint was the issuing of a *Field Guide* in 2017 on a similar model to Ideo’s 2015 *The Field Guide to Human-Centered Design: Design Kit* and is probably an admission that it lost the first battle for the “framing of Design Thinking”... and yet another attempt to stay in the race. From a more general perspective, the infinity loop connotes a scientific approach as it resembles the ∞ sign. It also represents a never-ending process with no outcome or an outcome as a new beginning. This negative image of a circular rat race was avoided by Ideo (Figure 28).

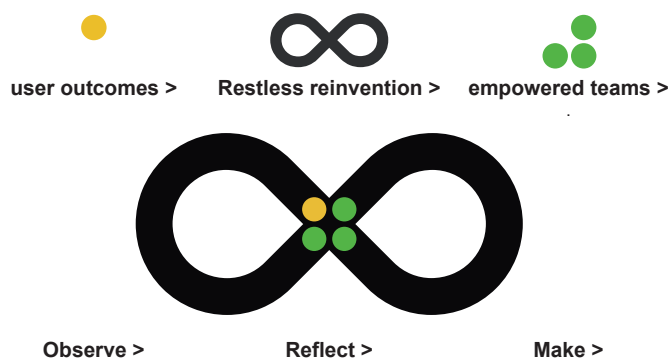


Figure 32. The IBM “loop”, Field Guide Editor: Seth Johnson, © IBM, 2017

According to Bruce Nussbaum (2011), the success of Ideo’s DT, the British Design Council’s Double Diamond and the IBM loop was a problem in itself: “Design Thinking has given the design profession and society at large all the benefits it has to offer and is beginning to ossify and actually do harm”. In order to become compatible with the **organisational culture of business**, DT has thus been “reduced to a simple process modeled like *Lean* or *6 Sigma*”, it has been “striped off disorder, conflict, failure, blur zones and feedback loops inherent in the creative process”* (Gamba, 2016). “As ‘sense-makers’ our use of models is typically to reduce that cognitive burden for others” (Roberts, 2015). “DT made simple” is pervasive and has gone beyond the business world to be part of our everyday life through implementation in the public services. For example, in 2017 Design for Europe was advocating *Designing for Public Services* in a bro-

chure coedited by Ideo and Nesta (UK), and French Secrétariat général pour la modernisation de l'action publique (SGMAP) has issued its own guidelines (see Figure 33).



Figure 33. Guide de conception des services publics, SGMAP website, 2017 [viewed August 2017]

In some recent representations, DT has almost acquired a performative power that could be compared with prehistorical hunting scenes on the Lascaux cave. “Our models are not neutral. They embody and represent theories and ways of making sense of the world. In creating models we make theoretically informed choices. In that sense, models are performative” (Roberts, 2015). Another trend is the use of icons to signify actions (see Figure 34) in a similar fashion in which hieroglyphs conveyed sense and mimicked nature. There was a claim that DT can do so almost instantaneously “in a day”, like a kind of magic. In this respect, I tend to agree with UK anthropologist Simon Roberts’ (2015) comment:

models have a power that is akin to that of magic [because] they are technologies of enchantment [...] it’s worth reflecting on the sometimes restrictive and constraining power that our models might exert over their creators. In pursuit of certainty in the face of uncertainty, is it not sometime the case that the enchanter becomes the enchanted?





Figure 34. IDEO, Design Thinking in a Day—Library, 2014

2. Design thinking rather than designerly thinking

Engineering design has chronological precedence over design thinking. In his 1962 handbook, professor of engineering Asimov mentioned that “engineering design responds to economic forces and technological advances.” In the 1990s, Design researcher Richard Buchanan added the dimension of marketing to economy and technology because “what is contingent in the changing attitudes and preferences of potential users”. In the 2000s this threefold business-oriented approach converged with non-commercial considerations about people who are not

only customers but also social actors and citizens. Tim Brown of Ideo eventually added a new layer of intentionality by implying that these states lead to “innovation” (see Figure 36) and are “desirable”³² (see Figure 35) rather than merely “preferred”.

	
<p>Figure 35. Definitions of Design Thinking, Brown, 2008, IDEO blog “Thoughts by Tim Brown” [viewed August 2017]</p>	<p>Figure 36. Design Thinking, Brown, 2009</p>

UK professors of the Design Management Institute Rachel Cooper, Sabine Junginger and Thomas Lockwood elaborated (2009) that dictionaries equate the activity of *thinking of* with “imagining, visualizing, dreaming up”. In contrast, to *think about* something is to “consider, to reflect, and to deliberate”. Finally, to *think through* something is “to understand, to grasp, to figure it out”. Design thinking seems “to encompass all three of these qualities”. Nigel Cross (1982) pointed out that “scientists problem-solve by analysis, whereas designers problem-solve by synthesis”³³ and, with Kees Dorst, he later (2001) developed the idea that problems and solutions co-evolve. So, they have suggested to problem-solve by abduction, including what Habermas called *innovative abduction*³⁴; i.e. problem-solving by test-and-learn.

In a “six minute read” for the business readers of *Fast Company*, design thinking was presented as “always linked to an improved future” (DeConnick, 2006) and Youngs & Inglewood wrote in the British report about *Designing the digital economy* (2015) that design thinking is “just what should happen, it’s common sense”. Those are examples of injunction which sometimes tend to be used in place of definition. Design researchers, such as Jan Schmiedgen, Holger Rhinow, Eva Köppen, and Christoph Meinel at the Hasso Plattner Institut in Postdam and at Stanford

32 “Without design sensibilities, design thinking runs the risk of addressing only functional concerns and falling short in issues of desirability” (Suri & Hendrix, 2010 in Martin & Christensen, 2013)

33 “By analysis, you actively dissect the object of your thinking into parts. [...] By synthesis, you actively combine two or more unlike ideas into an entity as in an invention. [...] By induction, you move from particular observations to a generalized concept. *Deductive* thinking operates in the opposite direction, from the general to the particular” (McKim, 1980).

34 For Habermas, innovative abduction typically comes to us “in a flash” and, according to Peirce, it is “an act of insight, although of extremely fallible insight”.

Design Thinking Research Program (2015), have indeed noted a widening gap between *pre-scriptive* discourses “in which facets of the concept are presented in terms of a process, toolbox and method for management” and *descriptive* discourses which “in contrast, look at designerly thinking as an academic construction”.

3. Design values

3.1. Qualitative value

In 1992, professor of Design and Innovation Richard Buchanan suggested that the value of design—being judged “by society”—is *social*. Design generates value at three levels: product, organisation, brand (differentiating factor between organisations). Professor of Innovation Roberto Verganti’s theoretical approach of the value added to products by design (see Figure 37) shows the overarching value of meaning over function. It is not unlike the rhetoric value of books in which content and functional values are over-determined by symbolic value. In addition, the concept of *classic*, as in “business classic” above, also translates well in most fields of publishing as long seller.



Figure 37. Radical innovation of meanings and the creation of business classics, fig. 5.5 in Verganti, 2009,

Since design studies emerged in the 70s, work on “the impact that design had on industrial value creation” has been carried out. Some feel that the value of design has been “tested and

evidenced” by researchers in the 2000s³⁵ (Borja de Mozota & Valade Amland, 2019) as was illustrated by the “Design Ladder” introduced by the Danish Design Centre (see Figure 38).

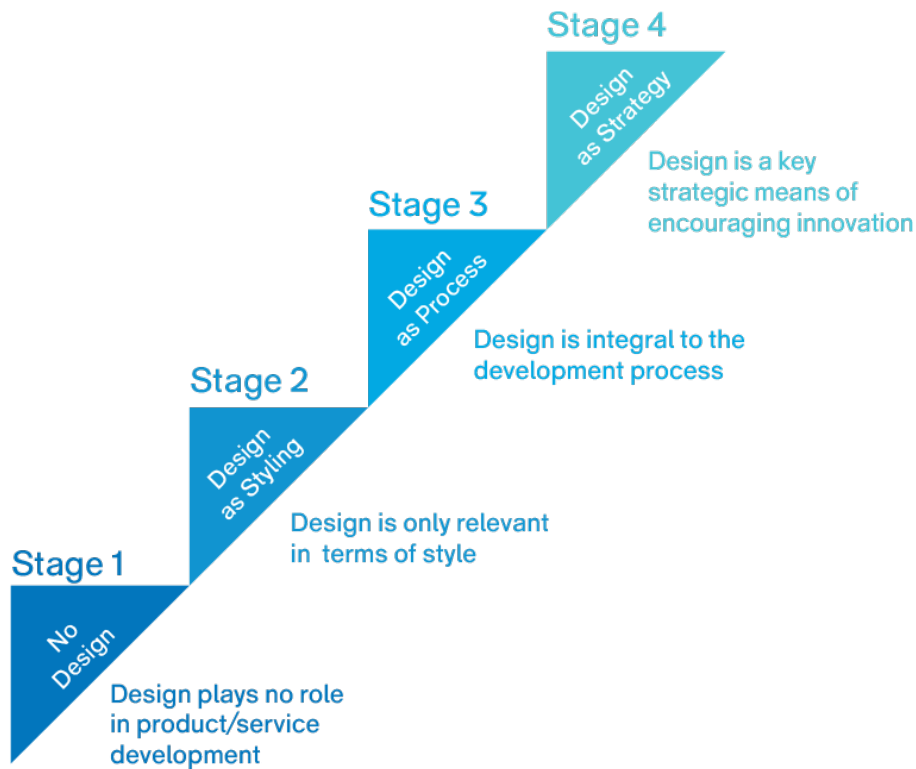


Figure 38. Design Ladder [viewed on the website of the Danish Design Center in September 2017]

A measure of success is popularity³⁶, and so is the adoption of DT by companies. In their 2011 paper *Evaluating Design: Understanding the Return on Investment*, Whicher et al. presented a Danish study of the percentage evolution of local companies which had climbed up the Design Ladder to reach “design maturity” between 2003 and 2007 (there was a whopping 10% increase—45% in 2007 vs. 35% in 2003 of companies at stage 3, i.e. which declared that “design is integral to the development process”)—with a return on investment of 250% for “companies that invested in design” versus companies that did not.

35 “The only way to demonstrate design value is to explain how design knowledge transforms these social science methods and management concepts into knowledge useful to [...] the value management framework in management science, although within this, value for the firm may be either substantial or financial: 1. The substantial value of a firm creates customer, performance, and strategic value. 2. The financial value of the firm creates shareholder value” (Borja de Mozota, 2008). Peter Zec, the director of the Red Dot Institute wrote along similar lines that “return on ideas is a motto for success and describes the development and realization of innovative ideas that ultimately result in business success—the quest for a new quality that ultimately results in increased quantity” (2011).

36 “Judging by the amount of focus on design in business newspapers and magazines, in management books and even at hard-core business events like World Economic Forum, one could claim that at least the business community makes a whole-hearted attempt at growing awareness and an understanding of the value of design” (Borja de Mozota and Valade-Amland. 2019).

Beyond academics, understanding and explaining the value of design remains difficult. Professor in Design Management Hilary Collins (2013) found that designers struggle with the challenge of explaining design's value to business and two in five designers still *feel* “they don't explain the value of their services well” (Design, Council, 2017). Symmetrically managers *perceive* design thinking as “hard to measure”, most do not measure it and some use “vaguely coherent metrics” (Schmiedgen et al., 2015). These perceptions by managers and feelings by designers are difficult to express, they are the submerged part of the iceberg (see Figure 39) below their conscious level of awareness. In order to emerge consciously, they would need to be supported by visible “changes in hard measurable outcomes” on the emerged part of the iceberg. User perception remains a key element of the appreciation of products and services. The problem for enterprises is that their customers' perception is inversely proportional to their traditional value chain (see Figure 40).

<p style="text-align: center;">The image in the original document might be copyrighted.</p> <p style="text-align: center;">This image has been removed in this version for general circulation.</p>	
<p>Figure 39. Different levels of design thinking's impact (adapted from Liedtka et al., 2013, p. 207) in Schmiedgen, 2015, fig. 19</p>	<p>Figure 40. Investments by the enterprise vs. Customer perception in Cité du design, 2015</p>

3.2. Quantified value

If understanding the value of design has been difficult, measuring it used to be an almost intractable challenge. There were various reasons: “evaluation is costly” (Whicher et al., 2011); the value of design has “no direct relationship with performance” (Wattanasupachoke, 2012); and it is hard to correlate outcome with design activities because they “cannot be isolated from other parameters” (Rauth et al., 2014). But above all, the two main problems were the absence of a conceptual framework of what to measure and the lack of available data because most design thinking projects until the mid 2000s were scattered and experimental.

The challenge of measuring the value of design has been academically pursued, for example by Institutes in Stanford (US) and Postdam (Germany) sponsored by SAP founder Hasso Plattner. They aim to uncover “metrics that determine the success of challenges approached with design thinking methods” (Meinel & Leifer in Plattner, Meinel & Leifer, 2015). Public actors such as the UK Design Council and Design Europe are also promoting research in this area. Some issues to assess the value of design have been identified:

- quantify comparable financial value: for example, the Red Dot Institute for Advanced Design Studies use Earnings Before Interest and Taxes (EBIT) as a key economic figure;
- set clear target event though “many of the objectives were intangible” (Whicher et al., 2011);
- implement and monitor management tools to assess result versus target: the problem remains to correlate business performance with DT (e.g. “no company in our sample has a robust method for assessing design’s impact on performance”, Micheli, 2014).

Measuring innovation has also been a hot topic³⁷ (in which design is included as being one of the three levers of innovation with business models and technology³⁸) and a lot of reports and figures have been published since the mid 2000s by, to name a few, institutions like the European Commission (*Innobarometer*), the OECD, the World Economic Forum, World Intellectual Property Organization (*The Global Innovation Index*, coedited with Insead); universities such as the Institute for Manufacturing at Cambridge University; and private consultancies like McKinsey (*Global Survey Results*), BearingPoint, etc.

In the mid 2010s after the first decade of implementing design projects amongst a variety of industries and in a growing number of institutions on a large-scale comparable metrics became more widely available. For example a study by the Design Council in 2017 focused on the substantial value and indicated that, in the UK rapidly growing businesses are nearly six times as likely as static ones to see design as integral (see stage 3 of the Design Ladder in Figure 38) and that for every £100 a design-alert business spends on design, turnover increases by £225. A report by consultancy Forrester for IBM shows that 53% of the projects carried out by their design thinking practice performed better than average. Representatives of the clients declared to Forrester consultants that project teams “doubled design and execution speed” and “leveraged better designs and user understanding” resulting in a Return On Investment (ROI) of 301%.

According to the British Design Council (2017) the financial value of a portfolio of shares in “design-led businesses” has outperformed the FTSE 100 by more than 200% over the decade

37 The users’ opinion has been reinforced by media coverage of innovation (or is it the other way around?). Thus Kelley & Littman (2005) adamantly claimed that “there is no longer any serious debate about the primacy of innovation to the health and future strength of a corporation”. Because “where business magazines once ranked companies primarily by sales, growth, and profit, publications are now ranking corporations on their innovation track record” and “even the staid British publication *The Economist* recently claimed, ‘Innovation is now recognized as the single most important ingredient in any modern economy’”. Hence innovation’s value and its correlation with DT has acquired legitimacy and it has become commonplace for business authors all over the world (like Wattanasupachoke of Thailand, 2012) to assess that “there are significant positive correlations that exist among design thinking and innovativeness, as well as innovativeness and performance”.

38 The success creative industries in today’s postmodern society is not based on functionalities but “on the desire they create on the market [and] is driven by the uses and desires created by new products”. Innovation is about “how to create new experiences and uses through creativity combined with technology [and] design, as a multidisciplinary approach embracing aesthetic *and* functional ideas, has a key role in this process” (Manceau & Morand. 2014. “A few arguments in favor of a holistic approach to innovation in economics and management”. *Journal of Innovation Economics & Management*, 15: 10115).

1995-2004 (see Figure 41). For McKinsey (2018, see Figure 42), companies in their design index (MDI) have performed twice better than the others. McKinsey’s “four clusters of design actions” of their index (Analytical leadership, Cross-functional talent, User experience, and Continuous iteration) are similar to Forrester’s findings about the IBM Design Thinking Practice. Both consultancies show that design brings value and hint that “the potential for design-driven growth is enormous in both product and service-based sectors” (McKinsey, 2018).



4. The stakeholders of design thinking

4.1. How do designers design?

On the one hand, designers, who are supposed to possess dialectic abilities and a reflexive view of their practice, have experienced problem answering the above question. Provocatively, it could be argued that design researchers have written long-winded articles and professional designers have drawn esoteric squiggles (see Figure 43) both agreeing that “it is never a clean and linear pass-through process” (Liedtka & Ogilvie, 2011). On the other hand, designers have looked down on design thinkers because they tend to “over-simplify” (McCullagh, 2010) by presenting design to business as a clear and codified process of methods, tools, and steps that can be learned by non-designers. Designers also downplay managers who need an “oversimplified and artificially linear approach” and dare them to enter “the often ambiguous and seemingly risky world of design thinking” (Liedtka & Ogilvie, 2012). They castigate them for trying to “reproduce the process without the hindsight and sensitivity of designers”* (Cazaux, 2013).

French designer Pierre-Julien Cazaux proclaimed (2015) that “it is no longer acceptable to tolerate that design thinking be considered as a process”*. Fellow designer Estelle Berger (2013) wrote in the same anti-process vein that it is a “*métis*—a common greek name for a particular shape of intelligence made of deception, tricks, schemes, even concealment or lies [...] it actually is nothing else but serendipity”*.

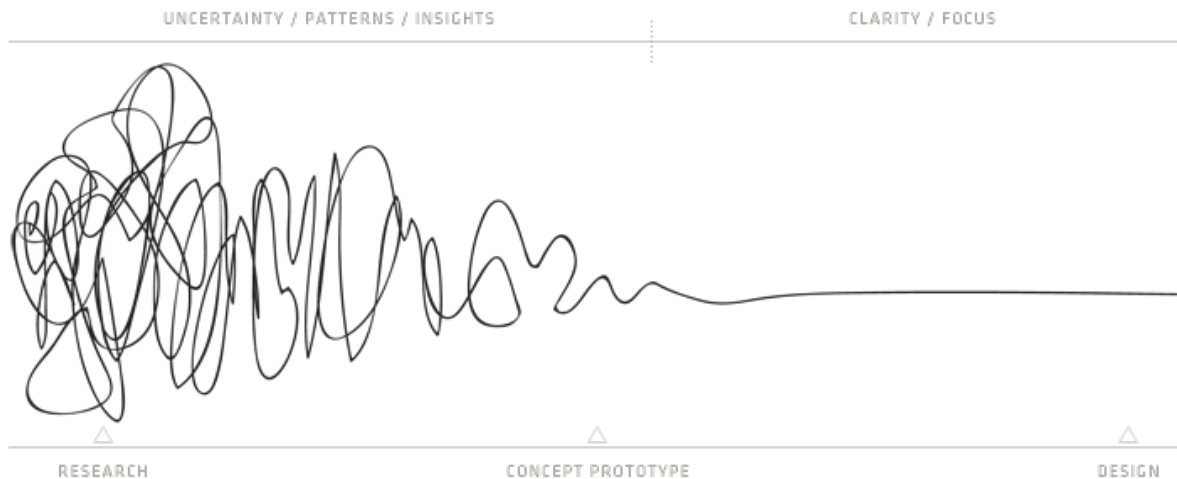


Figure 43. Fuzzy front end, the Design Squiggle, Newman, circa 2001

4.2. Knowledge workers and creative workers are involved together

Engineering designers have agreed since the 1960s that while being immersed in designing, “a designer is apt to become enamored of his own solution” and can not perform “an objective assessment” (Marples, 1961). Since “design failures are expensive” (economically, socially, technologically) “design complexity” must be managed³⁹. Although designers and business professionals are “creative professionals” they come from different backgrounds and struggle to understand each other. There is nothing obvious for “knowledge workers, who typically have a business or engineering degree” to interact with designers who “are predominantly trained in art schools, where processes of knowledge creation are marked by interaction with visual and physical elements as well as with words and numbers” (Rylander, 2009).

The dean of the Rotman school of business diagnosed that businesspeople will have to become more design-savvy; i.e. «more ‘masters of heuristics’ than ‘managers of algorithms’” (Martin, 2004 in Martin & Christensen, 2013). Still, “the inability of businesspeople and [design] specialists to speak the same language” was identified in the *Cox Review of Creativity in Business* (2005). Cox’s problem statement for the UK was confirmed again almost a decade later in the US that most managers “do not have access to design-thinking skills”.

39 According to the Design Management Institute (DMI), design management is “the art and science of empowering design to enhance collaboration and synergy between ‘design’ and ‘business’ to improve design effectiveness.”

Another issue is that expectations have to be managed. In 2014 researchers in Innovation Rauth et al. found that, after the “initial honeymoon period” during which managers and coworkers were excited about design thinking, a growing demand for “tangible proofs of concept” and “marketable offerings” arose (2014). The problem with this kind of immediate demand is that early metrics may be misleading. In order to avoid this “hangover effect” designers and design managers alike are aware of the necessity to provide both “quick wins” and more established longer-term metrics. Still, a 2020 study by consultancy McKinsey with over 1,700 respondents⁴⁰ was commented by *Fast Company* as “CEOs don’t understand design leadership at all” (Wilson, 2020).

In a nutshell, even when adopting design thinking is not a controversial issue amongst stakeholders (business people and designers), communication problems remain an issue. Upskilling of designers in business and of businesspeople in management is desirable in the medium to long term, and intermediary objects like models can help in the shorter term.

4.3. The users are rational and therefore visual

In his seminal book *Sémiologie graphique* (1967), Jacques Bertin asserted that “graphic is not art”^{*} but a rigorous scientific visual language of which “subtle artistic nuances are not excluded”^{*}. Graphic is a visual “data processing” instrument available for all. Its efficiency can be measured in terms of “mental cost” of perception. The three functions of graphic representation (see table 3) are *recording information* in an exhaustive “artificial memory”, *communicating information* in a simple memorable⁴¹ “message”, and *data processing* by ordering and “smoothing”. Because Bertin is striving to establish a new scientific paradigm, his work lacks the artistic nuances that could emulate the right hemisphere of the reader’s brain. In this sense Waller commented that “the book ‘contains’ information” but asserted that it “fails to communicate it” (1987). For him and “for some Anglo-Saxon minds Bertin’s work confirms their worst fears about semiology: replete with technical terms and classification schemes”. In short, Bertin is too structuralist for Waller. He downplays his work as merely addressing ergonomic concerns of legibility or “‘retinal variables’—aspects of the human perceptual system” and failing to touch on more holistic aspects of readability and of reception beyond perception.

40 Dalrymple, Melissa, Pickover, Sam, & Sheppard, Benedict, “Are you asking enough from your design leaders?”, *McKinsey Quarterly*, February 2020.

41 “Recent work carried out by Aude Oliva at MIT’s Computer Science and Artificial Intelligence Lab and Hanspeter Pfister’s research group at Harvard has suggested just how ineffective (at least from the standpoint of memorability) are traditional data display formats such as bar, pie, and scatter charts, noting the superior power of visualizations that incorporate faces and human-centric scenes, particularly when embedded within stories.” (Schnapp, 2014)

Table 3. Graphic processing of information (Le traitement graphique de l'information, in Bertin, 1967, chap. C, p. 166)

		Memory	
		Drawing as substitutive to <i>replace</i> human memory	Drawing as form to <i>fit in</i> human memory
Information	exhaustive	Representation for <i>cataloguing</i> (multiple figurative elementary images)	Drawing for <i>processing</i> (collection of orderable images)
	simplified	Ill-conceived sketches	Message (composition of simplified images)

McLuhan was more radical and declared that people are “visually biased”, “the rational man in our Western culture is a visual man” and “the book is an extension of the eye”. Even though his own books were not visual, Agel and Fiore’s visually intensive translation of McLuhan’s writing for a non-specialist audience in *The Medium is the Massage* produced a powerful impression in which “images rarely if ever simply illustrate the text” (see Chapter 16). The *Massage* conveyed complex content in a “‘non-book’ for the masses”. When it was released, reviewers got the message that it was “a heroic effort to de-book the core ideas of *Understanding Media*.” (Edmund Fuller, *Wall Street Journal*).

Academics conservatively tend to cling to an “old separation of media”. For them “all things not of the letter must be exchanged for letters in order to enter the system of learning” (Fitzpatrick, 2011). They can thus write *about* images, but not *in* images. Resistance to non-textual form of scholarly production runs deeper in the disciplines of *criticism* (art history, literature, media studies) than in the more creative ones based on *practice* (studio art, creative writing, media production). Media studies have not yet found a way to bridge the theory-practice divide over the last ten years. Scientists and engineers are more prone to implement *Visual strategies* (Frankel & Depace, 2012) but are adamant that “a visual representation of a scientific concept (or data) is a re-presentation, and not the thing itself”. They draw parallels between creating a graphic and writing an article: what to say and in what order to say it must be carefully planned, basic assumptions must often be clarified, it often leads to new insights.

The Peircean view that “reasoning itself was diagrammatic” could help and reconcile the two approaches. Therefore “the diagrams *performed* the act of reasoning, they did not *represent* it after the fact” because, according to Drucker (2014), “no ‘data’ pre-exist their parametrization. *Data are capta*, taken not given, constructed as an interpretation of the phenomenal world, not inherent in it.”

5. The ABC of design thinking

From Ambidextrous, [project-]based, Cognition and Creativity... to the W of Wicked problems.

5.1. Ambidextrous thinking

Professor of Architecture Gabriella Goldschmidt (1994) described the three stages of human development according to Piaget: “a body-centered stage, a visual stage and, beginning at age eleven or twelve, a symbolic stage”. Amongst others, she believes that designers and architects apprehend the world through these same three stages, sometimes combined, but generally in reverse order compared to learning kids. As Stanford Design researcher Rolf A. Faste proposed “when problem solving becomes blocked at the symbolic level, humans must revert to the right brained abilities associated with these previous stages”. In this perspective design thinking involves not only thinking with the whole brain (the two hemispheres) but also thinking with the body.

In the sciences “the formal/symbolic modes are more relevant” for Design researcher Nigel Cross (1982), but even scientists can benefit from moving back and forth between symbolic thinking and visual thinking and, in design, “the concrete/iconic modes of cognition are particularly relevant”.

In applied sciences (e.g. engineering), one of the main challenges identified by Cambridge professor of Engineering David A. Marples in “The Decisions of Engineering Design” (1962) is that a designer is obliged to “visualize⁴² both the finished article and the process” and it “requires a double effort of the imagination”. The first step is to transform a mental image (internalised thinking) into an object, to describe “the idea in words, in graphic illustrations, and in mathematical symbols” (externalised thinking) and then “the concept becomes information” (Asimow, 1962). Explanatory graphics are used to communicate a point or call attention to patterns and concepts and can be used as evidence or proof in research. Design researcher Robert H. McKim (1980) listed the five main strategic advantages of externalised thinking or thinking by manipulating: [first] “food for thought”; [second] “serendipity”; [third] “a sense of immediacy, actuality, and action”; [fourth] “an object for critical contemplation as well as a visible form that can be shared with a colleague or even mutually formulated”⁴³; [finally] an activation of “the right hemisphere of the brain”. Professor Rudolf Arnheim (in McKim, 1980) suggested

42 In the context of academic publishing visual strategy is based on “exploratory graphics (sometimes referred to as visualizations)” which are accompanying diagrams to explain the research to a non-specialized audience. “A diagram provides an opportunity to summarize [the researchers’] conclusions in a clear, non-technical way. Before starting to sketch the diagram, the illustrator has to think about “what the paper really wanted to convey to the reader.” Eventually “the diagram does a good job of summarizing the important findings of the paper and provides a qualitative understanding of the systems as a whole” (Felice & Depace, 2012).

43 According to designer Jon Kolko (2011) “through the use of a whiteboard, and through the shared pooling and visualization of the ideas into a single democratic (and ‘unowned’) diagram, the team goes through a process of shared sensemaking” (in Martin & Christensen, 2013).

the term *visual thinking*⁴⁴ to describe the interaction of seeing, imagining, and drawing⁴⁵ (see Figure 44).



Figure 44. Visual thinking by Rudolf Arnheim, fig. 1.1 in McKim, 1980,

Ambidextrous Thinking” goes further than visual thinking. It creates at least two intended images: “the first image implies the use of the hands, and by extension, use of the whole body” and “a second image suggests extending the notion of ambidexterity to the brain⁴⁶, that is, being equally facile with both the right and left sides of our brain” (Faste, 1994). Creativity (i.e. original solutions to “wicked problems” [this concept will be defined later in this work]) are thus worked on “by the entire body, not just by conscious thought [because] original thinking requires going back to one’s origins” (Faste, 1994).

5.2. [Project-]based

The DT process revolves around project management. It begins with particular problems and results in satisfying solutions and “closer ties between design and project practice is a current language element”* (Piponnier, Beyaert-Geslin & Cardoso, 2014). Proponents of DT such as Martin (2005) have advocated “the important role of projects in firm life [which] must not be ignored, but rather protected from the tyranny of ongoing tasks” (in Martin & Christensen, 2014). A design project is “a complex artefactual system which is both shaping usage and producing knowledge”* (Vial, 2014). It is based on “an ideal of the world”* (ibid.) and “for design,

44 “Many words link vision with thinking. *Insight, foresight, hindsight, and oversight.* Visionary and seer. The word ‘idea’ derives from the Greek *idein*: to see.” and “*seeing is more than sensing*: seeing requires matching an incoming sensation with a visual memory” (McKim, 1980)

45 Professor of Psychology and Applied Social Sciences Jean-Pierre Boutinet’s discussion around “drawing”* (*dessin*) and “purpose”* (*dessein*) revolved around the idea that “drawing may be one of the best techniques for learning to make hypotheses, because it requires making guesses in an iterative fashion”* (1990).

46 According to Design researcher James Wang, in Aristotle’s psychology *imagination* provides “two important cognitive functions”: first it “fills the gap between sensation and reason”, second “it enables the intellect to consider the objects of sense perceptions for the purpose of judging future actions” (2013).

the world is an object to understand and analyse, but it is also, and above all, a project for men to pursue”* (Findeli, 2010).

Vial (2014) proposed an historical perspective by placing the first use of project management in the United States in the 1940-50s in the military aerospace industry. It has then “spread to other industries on a lateral mode with a project team and a project manager who (partly) escape the vertical hierarchy”. According to Boutinet (1990) there is a subtle difference in Italian between *progetto* (intellectual activity of developing or thinking) and *progettazione* (activity of completing or doing) which is, in a way, rendered in French by *dessein* (purpose, goal) and *dessin* (image, figure, sketch). “These two related meanings of the internalised *dessein* and the externalised *dessin* are merged in *designo* in Italian and ‘design’ in English”*. Vial (2014) draws on these distinctions to elaborate two theories of project (see Figure 45): 1. an anthropological “project culture” which is similar to Bjögvinsson et al.’s participatory design as a “socio-material form of alignment”; 2. a technical “project discipline” which is similar to Hatchuel and Weil’s “design system” element of the C-K theory.



Figure 45. Genetic model of project processes, fig. 2 in Vial, 2014)

5.3. Cognition

“Neuroscience, linguistics, and the cognitive sciences are increasingly verifying the reality of mind and body unity. [...] Another way to say this is to say that all cognition is ‘embodied’. [...] When we say you learn 10% of what you hear and 90% of what you do, it is true precisely because it is the whole body that learns. This is what John Dewey meant when he said we ‘learn by doing’” (Faste, 2001).

The first of the two images of the concept of ambidextrous thinking in the previous chapter has already gotten us acquainted with “the use of the hands, and by extension, use of the whole

body” (ibid.) in the cognitive process and Piaget’s “body-centered stage” of human development. Since neurologist Antonio Damasio published *Descartes’ Error: Emotion, Reason, and the Human Brain* in 1994 the dualistic separation of mind and body can no longer hold. The “versus” (*italics added*) should be replaced by “and” in quotes such as the following “knowledge work and design thinking represent different approaches to problem solving based on fundamentally different epistemologies: a rational, analytic, or intellectual approach, *versus* an interpretive, emergent, and explicitly embodied approach” (Rylander, 2009). In design (*italics added*), there is a consensus in the literature that “through modeling, conceptual knowledge is acquired as well as cognitive processes *in design*” (Oxman, 2004) “*in design* the thinking is informed by the doing, and vice versa” (Cooper et al., 2009).

For Bjögvinnsson et al. (2012) “a decisive shift in design approach occurred when user participation as design-by-doing and design-by-playing became ways to envision use-before-use”. Ideo (2015) went one step beyond “use-before-use”, stating that “when the goal is to get impactful solutions out into the world, you can’t live in abstractions. You have to make them real”. This goes against Aristotle’s ancient stance that making is less important than theorizing even though it should be balanced by the assertion that “design should be regarded as a rational activity in and of itself” (Wang, 2013). Aristotle’s preference is explained by his use of the two contrasting concepts of *technē* (knowing by making) “limited to sensation, memory, and imagination” and *epistēmē* (knowing by thinking) “only limited by the universal and eternal rules of logic”. As we have already seen, DT is not a science, and has no valid claim to ever becoming one, but it claims to be able to know by doing (i.e. “doing” meaning both making and thinking) and to encompass *technē* and *epistēmē*. This is also probably why philosopher Vial (2016) has claimed that “as a method of thinking-by-doing design is a chance for the digital humanities which have in common with design research that theoretical questions are tested in the design of systems and that systems design is the very place for theoretical reflection”*.

5.4. Creativity

If inspiration comes in a flash—“an instant of enlightenment” (Marples, 1961) or as “moments of genuine and inspirational understanding” (Kozinets in Denny & Sunderland, 2014)—Marples considered that “the ‘mystique of creativity’ often consists of dogged exploration and hard thinking”. In other words, intuition comes with hard-earned experience and “expert designers tend to emphasise the role of ‘intuition’ in the generation of solutions” (Cross in Cross et al., 1991). This view is supported in the literature by Beyer and Holtzblatt (1998), Kolko (2011), Cropley (2006). It is also confirmed by interviews conducted in 2015 by Gumienny et al. that, when asked, “experienced interviewees said they follow their intuition and state that especially the gradually growing experience of designers enables good intuitive decision making” be-

cause “experience helps to develop tacit knowledge” (ibid. in Plattner, Meinel & Leifert, 2015). It makes sense that creativity and experience are linked since “man is not yet able to create something from nothing” (Faste, 1972), “new combinations of known principles” where “new elements come into play by chance or by trial and error methods” (Marples, 1961). Hence “this first creation of a new principal solution or new concept ‘on probation’ has much in common with invention” (Roozenburg in Cross et al., 1991).

Invention “should not be confused with innovation”⁴⁷ and “innovation cannot afford not to strongly integrate design thinking” (Manceau & Morand, 2014). Tim Brown (2014) said that “creative confidence is a mindset, and if you don’t have it you will not be equipped for design thinking”. This focus on people is shared by Meinel and Leifer (2015) who wrote that “design thinking is mainly about building innovators who can use the design thinking paradigm to transform ideas into reality” (in Plattner, Meinel & Leifer, 2015). But DT “in its simplest sense” is also about products, i.e. “the emergence of shape and form in response to objectives. The processes of reasoning that result in the emergence of form are, by definition, creative processes” (Oxman, 2002). Fraser (2006) reckoned that the power of design thinking to drive innovations is not only about creativity since he also argued that “creativity is technically the *ability* to create something new. Design is about the process of making or *doing* something new” (in Martin & Christensen, 2013).

5.5. Wicked problems

The *wicked problems* approach was formulated by Horst Rittel in the 1960s, when design methodology was a subject of intense interest. A mathematician, designer, and former teacher at the Hochschule für Gestaltung (HfG) Ulm, Rittel sought an alternative to the linear, step-by-step model of the design process being explored by many designers and design theorists. (Buchanan, 1992)

They are a “class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values” (Rittel, 1973). According to Simon (1969), the solution to such problems can only be “satisfying” because they proceed from a “knowing how” (sciences of the artificial) “as opposed to true” as is implied by the “knowing that” (natural sciences). The approach of the actors, the stakeholders, the “clients and decision makers” also resounded with Simon’s concept of “bounded rationality” (1957) and Nigel Cross’ assertion that wicked design problems “are not problems for which all the necessary information is, or ever can be, available to the problem-solver” (1982).

47 “‘Creativity’ is the generation of new ideas—either new ways of looking at existing problems, or of seeing new opportunities, perhaps by exploiting emerging technologies or changes in markets. ‘Innovation’ is the successful exploitation of new ideas. It is the process that carries them through to new products, new services, new ways of running the business or even new ways of doing business. ‘Design’ is what links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a specific end.” (Cox Review of Creativity in Business, 2005)

As we have seen, dealing with wicked problems—ambiguity—is what design thinking is about: “the more ambiguous and uncertain the problem, the more suitable design thinking seems to be” (Raney & Jacoby, 2010 in Martin & Christensen, 2013) as a counterintuitive, paradoxical “exploration of problem-and-solution together” (Buchanan). Even before DT was conceived, the approach of problems in the field of engineering design was that “the designer is presented, not with a problem, but with a problem situation” (Asimow, 1962), in other words, it was a situationist approach⁴⁸. Hence DT could help knowledge workers to loosen up in order to adapt to this “increasingly complex and ambiguous world in which a purely rational approach is no longer tenable or, put differently, is no longer rational” (Rylander, 2009). Entrepreneurs, innovators, and venture capitalists (we note that some definitions of publishers include these three features) have thrived in uncertainty because their approach is aligned with design thinking principles, “instead of following the analyze-act model, they act-analyze through an emergent strategy” (Fixson & Rao, 2014).

48 Merleau-Ponty’s definition of *situation* was “involvement in circumstances” or “active concern with a set of natural, cultural, or human problems” and Peter G. Rowe in his 1987 book *Design Thinking* added that “when we are in a situation neither the objective realm of those things outside ourselves nor our own subjectivity is primary”. Social psychology confirmed that “behavior can be predicted far more reliably by the characteristics of the situation a person is engaged in than by the characteristics of his or her personality (Ross and Nisbett 1991)” (Martelaro et al. in Plattner, Meinel & Leifert, 2015). Tim Brown (2008) later integrated situation as a core element of DT when he declared that the “innovative capacity is less determined dispositionally than it is situationally. In other words, the approach claims that innovative capacity is not to be found in a person’s traits (such as a person’s preference for divergent or convergent thinking) or demographic attribute, but rather in the characteristics of the situation a person engages in (such as specific design thinking practices)”. The consequences of the importance of situation in terms of usage are that since “the use of a product or service is embedded in a system formed of material, social and symbolic elements” (Desjeux in Denny & Sunderland, 2014) then “strategies and tactics of design *for* use must also be open for appropriation *in* use, after a specific project is finished, and consider this appropriation as a potential, specific kind of design” (Bjögvinsson et al., 2012).

Part Two:
The Knowledge Design Theory

Chapter 9.

The purpose of the KDT

Can current publishing theories provide an explanatory framework and foster innovation to publish original and successful knowledge books?

Traditional publishing theories remain valid but, in today's volatile and complex environment, they lack a performative bias towards innovation. At its inception in 2014, Knowledge Design was considered as a meta-concept to cross-fertilise the fields of publishing and design. Based on design thinking, this nascent approach encapsulates the disrupting potential of its underlying methodologies.

1. What is a theory?

The aim of a theory is to disclose how things are, to explain how things interact, and to know about things and their relationships with people. The definitions proposed here draw on metaphysics and logic and are general enough to apply to both science and philosophy, and hence to the more specific fields of Design Research and Innovation Research which are mobilised in the proposed Knowledge Design Theory.

In philosophy, a theory is a complex system of objects which must at least be logical¹ (etym. mid-14c., *logike* “branch of philosophy that treats of forms of thinking; the science of distinction of true from false reasoning”). It can also be ontological (etym. from Modern Latin *ontologia* (*onto-* + *logy*): Greek *ontos* “being” referring to existence + Greek *logos* “word, discourse”) or epistemological (etym. Greek *episteme* “knowledge”), or it can be a whole or partial mix of these three characteristics (e.g. metaphysics which is ontological and epistemological). A theory is a logical system characterised by the three features of complexity: reflexivity, symmetry and transitivity (see Figure 46).

1 According to Philosopher of the Center for the Study of Language and Information at Stanford University Edward N. Zalta, logic is a complex system as it presupposes (1) ontology, (2) epistemology and (3) logic itself: “(1) the existence of a language for expressing thoughts or meanings, (2) certain analytical connections between the thoughts that ground and legitimize the inferential relations among them, and (3) that the analytic connections and inferential relations can be studied systematically” (“Logic and Metaphysics”, 2011).

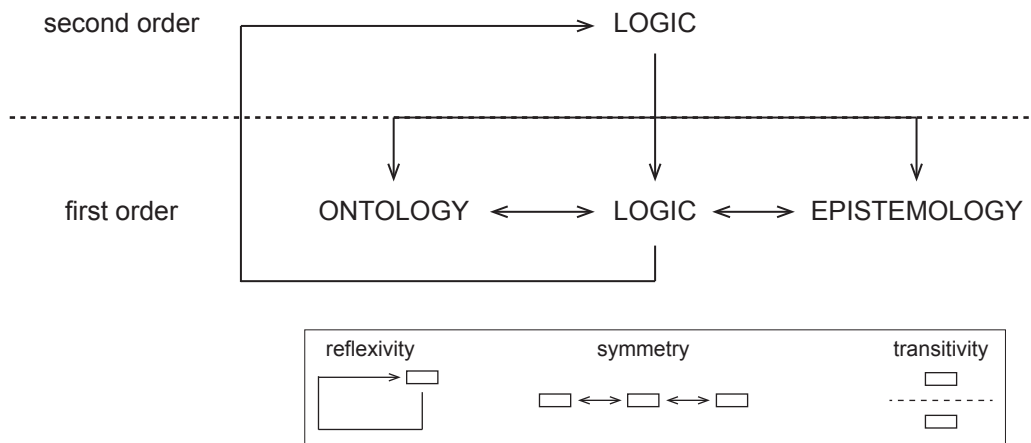


Figure 46. The first and second orders of logic, CC BY-NC 4.0

For Philosopher of the Center for the Study of Language and Information at Stanford University Edward N. Zalta, logic is a theory of relations—“the study of the logical consequence relation”—and rests on two orders of thinking:

- the “unsaturated entities” of the second-order of logic are *propositions*. They can either be *facts*— simply defined as “true propositions”— (considered a 0-place relation) or propositional function (a n -place relation predicated of n arguments). At his level, the question arises of what facts about the nature of properties can be systematised.
- at the first-order of thinking, three kinds of logic can be distinguished:
 1. the *discourse* of logic is based upon *predicates*. These elements are the “basis of thought”; i.e. a predicate is a “truth-value” and everything else is false;
 2. the ontological *set theory* formulates that *sets* are objects which “simply contain, or at best classify, their members, relations and properties” and functions which “simply map their arguments to values”;
 3. the epistemological *theories of the objects of thought* is based on the study of plurals and on the logic of *intentionality*; i.e. “the property of the mind and mental events that makes them *about* or *directed upon* things”. In some sense, this investigation of *arbitrary objects* can turn out to be impossible and the extent to which properties might be abstracted or reconstructed from “similarity relations” needs to be thoroughly examined.

2. Traditional publishing theories

2.1. The communication circuit

Publishing has become more complex and serendipitous, but not “without order”. Book historian Robert Darnton proposed “a general model for analyzing the way books come into being and spread through society” (2009). He pictured a sequential “communications circuit” (yet it is also circular because “authors are readers themselves”) which on one plane “runs from the author to the publisher, the printer, the shipper, the bookseller, and the reader”, and on another plane displayed the abstract three forces of “intellectual influences”, “conjuncture” and “sanc-

tions” as a Venn diagram (see Figure 47). So, in a way the circuit is impacted and impacting “intellectual”, “economic and social” and “political and legal” factors.



Figure 47. A general model for analyzing the way books come into being and spread through society, Darnton, 2009, p. 182

Darnton himself acknowledged that “models have a way of freezing human beings out of history”. Therefore, a mode of thought less rigid than unidimensional and unidirectional diagrammatic modeling of causes and consequences should be embraced. At the same time, more than one dimension should be articulated (e.g. the “influences” and the “circuit” in Darnton’s model). These articulations can rest on systemic² complexity referred to by Simon (1969) as “boxes-within-boxes or “eco-self-organisation” by Morin; i.e. a self-organised system interacting with both other self-organised systems.

2 There is an historical trail associating design and cybernetics in the literature. In his 1969 article “The Architectural Relevance of Cybernetics”, Gordon Pask explicitly framed design as cybernetics—drawing on the iterative practice in both disciplines—and anticipated Donald Schön’s notion of design as conversation (1983). Glanville (2009) considered an iterative relationship between design and cybernetics, “design as a practical expression of cybernetics, cybernetics as a theoretical study sustaining design”. Pickering (2010) has thought of cybernetics as pointing us to “a notion of design in the thick of things, plunged into a lively world that we cannot control and that will always surprise us”. Dubberly & Pangaro, (2015) claimed that the design methods movement has recently been rebranded as DT and “the story of cybernetics is the pre-history or back-story of interaction design”. Cybernetics or systems thinking started with the creation of machines which could think. Thinking for these machines was conceived not as human but by analogy to animals’ and Norbert Wiener defined cybernetics in 1948 as “the scientific study of control and communication in the animal and the machine”.

2.2. The frames of the publishing theory

Publishing is usually described as a two-step process of 1. editing—to “prepare (something, such as literary material) for publication”, and 2. publishing—“to make generally known; to disseminate to the public”—defined for instance by Bhaskar and Bomsel. It can be seen as problem solving in terms of design thinking:

1. In a world saturated by information overload, publishing is affected by “supply-side super-abundance” and “radical excess” for Bhaskar. Hence *editing* (*filtering* for Bhaskar or *framing* for Bomsel) can be associated with “Developing” (step 3 of the Double Diamond) and becomes “a question of survival”. It is not only a “near-passive sifting” but needs to be actively addressed by a “curatorial paradigm” for Bhaskar, or, for Bomsel, “framing” content into a genre by authors under the supervision of editors. For Bhaskar, the curatorial paradigm is “complex for a complex world”, an actually “intricate set of blended [complex and often unspoken] models” which projects the publishers’ “multiple contrasting expectations”, and for Bomsel it is a framed-and-framing design for books.
2. The second step of the overall process of publishing is a narrower definition of *publishing* (*amplifying* for Bhaskar or *exposure* for Bomsel), which corresponds to “Delivering” (step 4 of the Double Diamond). Even though there are attempts to do so³, this level of chance and complexity can not (yet?) be completely dealt with data and algorithms. Subjectivity remains a fact of life in publishing, probably because “data are *capta*” (Drucker) and because *intersubjectivity* is deeply embedded into human communication—publishing (or delivery in design terms) being one such *form* of communication (amongst others).

For Bhaskar “publishing is a system” made of *frames*. Frames are “content containers” and distribution mechanisms, channels and media; i.e. “content’s experiential mode”. Professor of Cultural Economics Olivier Bomsel also draws on the concept of “frames”* (“*cadres*”) into which the message is “produced”* (“*accumulé*”) by authors under the supervision of editors. Editing is thus framing content into a genre with a *prescribed use* or, in other words, a framed-and-framing design for books. Bhaskar describes a similar process by which “publishers are not just producers of books but constructors of frames” and he adds that “not only are frames media, but they actively create the experience of media”. Then the “amplification” or *exposure* (“*monstration*” for Bomsel) happens through and beyond framing. It should be understood as what Bhaskar calls “a movement from lesser to greater exposure”. The whole two-step process of *framing* and *exposure*, referred to by Bomsel as “publishing protocols”* is similar to Bhaskar’s definition of publishing as *filtering* and *amplification* (see Table 4).

3 Yucesoy, Burcu, Xindi Wang, Junming Huang, et Albert-László Barabási. 2018. “Success in Books: A Big Data Approach to Bestsellers”. *EPJ Data Science* 7 (1): 7.

Table 4. Bhaskar’s and Bomsel’s Publishing theories contextualised by the Double Diamond process of design thinking

Problem finding		Problem solving	
Discover*	Define*	Develop*	Deliver*
Information overload	Cognitive overload— “super-abundance” ^a	Filter ^a —curate meaningful information for the readers	Amplify ^a , Expose ^b
Fake, irrelevant and/or inaccurate information	Cognitive uncertainty— conferring “utility” ^b to publications	Frame ^{a,b} —make sense and add value to public signs through design	

Sources: UK Design Council’s Double Diamond*, Bhaskar^a, Bomsel^b.

The current publishing theories exemplified by Bhaskar’s and Bomsel’s works cover information overload and fake and/or irrelevant information, but not delinearisation, and those theories are more descriptive than innovative. They provide food for thought, but thinking out of the box, as in expanding the scope and also as de-framing and re-framing, are necessary conditions to devise a more innovative approach of publishing.

3. Apprehending the complexity of knowledge organisation

3.1. The three principles of complexity in *The Method*

The crucial issue is that of the organising principle of knowledge and what is vital today is [...] *to reorganise our mental system to learn to learn again* [...] “*Caminante no hay camino, se hace camino al andar.*” The method can only take shape while researching; it can only be achieved and formulated afterwards, when the end becomes a new starting point [...] *A trip is a transformational experience.* [...] the circle has been transformed into a spiral [...] this work can not be construed as an encyclopedia in the sense of a state of knowledge; but it can be thought of as encyclopedic in the sense of a spiral implementing a knowledge cycle.* (Morin, Edgar. 1991. *La Méthode*, vol. 4 “Les idées. Leur habitat, leur vie, leurs moeurs, leur organisation”. Paris: Seuil)

Morin proposed three principles⁴ in *The Method* (see Figure 48): the *hologrammatic principle*— “any single point of the image of the hologram contains almost all the entirety of the information of the object represented”; the *organisational recursion*— “a process where the products and the effects are at the same time the causes and produce what produced them”*; and the *dialogic principle*—“two principles are not just juxtaposed, they are necessary for one another [...] complimentary but also antagonists”*.

4 A parallel can be drawn between the three characteristics of a theory and the three principles of complexity according to Edgar Morin; i.e. reflexivity as “organizational recursion”, symmetry as “the dialogic principle”, and transitivity as “the hologrammatic principle”.

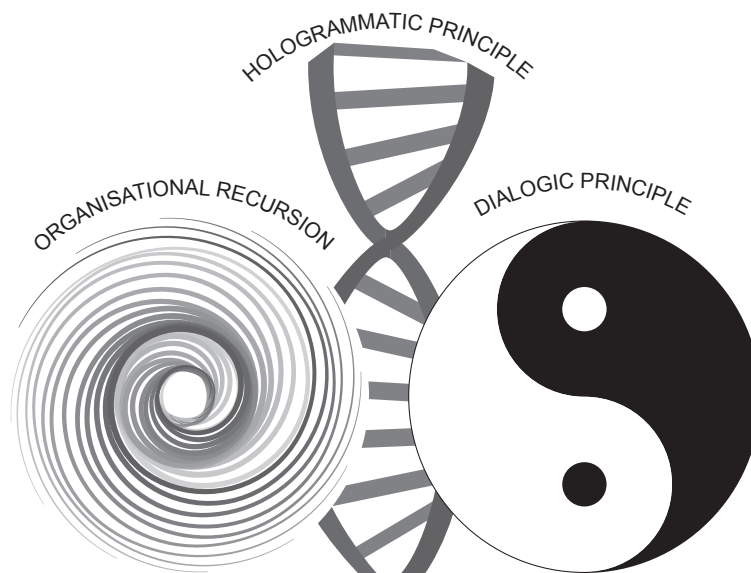


Figure 48. The three principles of the theory of complexity (inspired by Morin, 2005) CC BY-NC 4.0

Although Morin is adamant that his method is not a theory, its three principles are similar to the three features (reflexivity, symmetry and transitivity) of the first order of logic of a theory (see Figure 46). The objects of a philosophical theory can be either ontological, logical, or epistemological, or they can be a complex system of two or three of these objects (since objects are systems themselves, it means that a theory is a system of systems). I do not presume that I know better than Edgar Morin himself that his method is indeed a theory, but I do not feel it is a betrayal to use his three principles in my endeavour to compose a Knowledge Design Theory.

3.2. Boxes-within-boxes or eco-self-organisation

In theory, an eco-self-organisation⁵ is articulated at the four different planes of:

- 1 & 2. endogenous self-organisation of the project (or at the individual level for solo projects)—design of the artefact;
- 3. the exogenous eco-organisation of the structured-structuring relationships of the project team;
- 4. the organisation within its ecosystem. The eco-self-organisation is represented as an atomic system (see Figure 49). The core represents the organisation, the project teams are the elements orbitating around the core, and the relationships (between the core and the elements and between the elements themselves) are function of the general principles of gravity and of the context (pressure, temperature, etc.). In the publishing context, it means considering the concentric circles (or boxes-within-boxes) of an individual (author or reader) and a book, the project team of people who directly work on it (authors, editors, designers, publishers), the publishing house or imprint, and the media environment (including digital)—and their interactions and dynamics.

⁵ “Eco-self-organisation means a living organisation, not in the ‘biological’ sense *stricto sensu*, but in a metabiological sense of a spirit’s life; the spirit beings draw and pump their living substance in the life of the minds/brains and in the life of societies and, so doing, become alive. As living beings, they have their own purposes while being means for other living instances.”* (Morin, 1991)

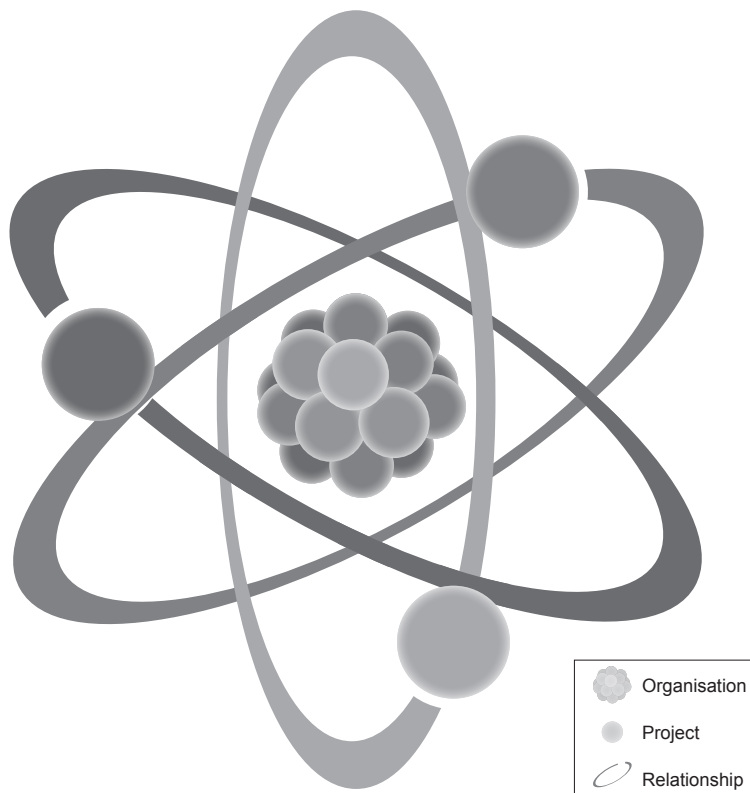


Figure 49. Eco-self-organisation, CC BY-NC 4.0

3.3. How do the three principles of complexity apply to knowledge design?

THE HOLOGRAMMATIC PRINCIPLE—an eco-self-organisation, capable of poïesis (i.e. creativity), exists at each of the four levels. Overall the system-model is theoretically operating at the three first levels (see Figure 50), but not necessarily at the ultimate fourth. Each level corresponds to one of the four steps of the design ladder of publishing in the Knowledge Design Theory:

- At the first individual plane, communication is a reflexive conversation of a designer-author with himself;
- At the second plane of the designer-authors and designer-publishers engage into discussion amongst the stakeholders in order to reach desirable compromises;
- At the third interacting plane, negotiations are objectified between the publishing team and the organisation to which it belongs or reports negotiate the goals of and the resources of the publishing project.

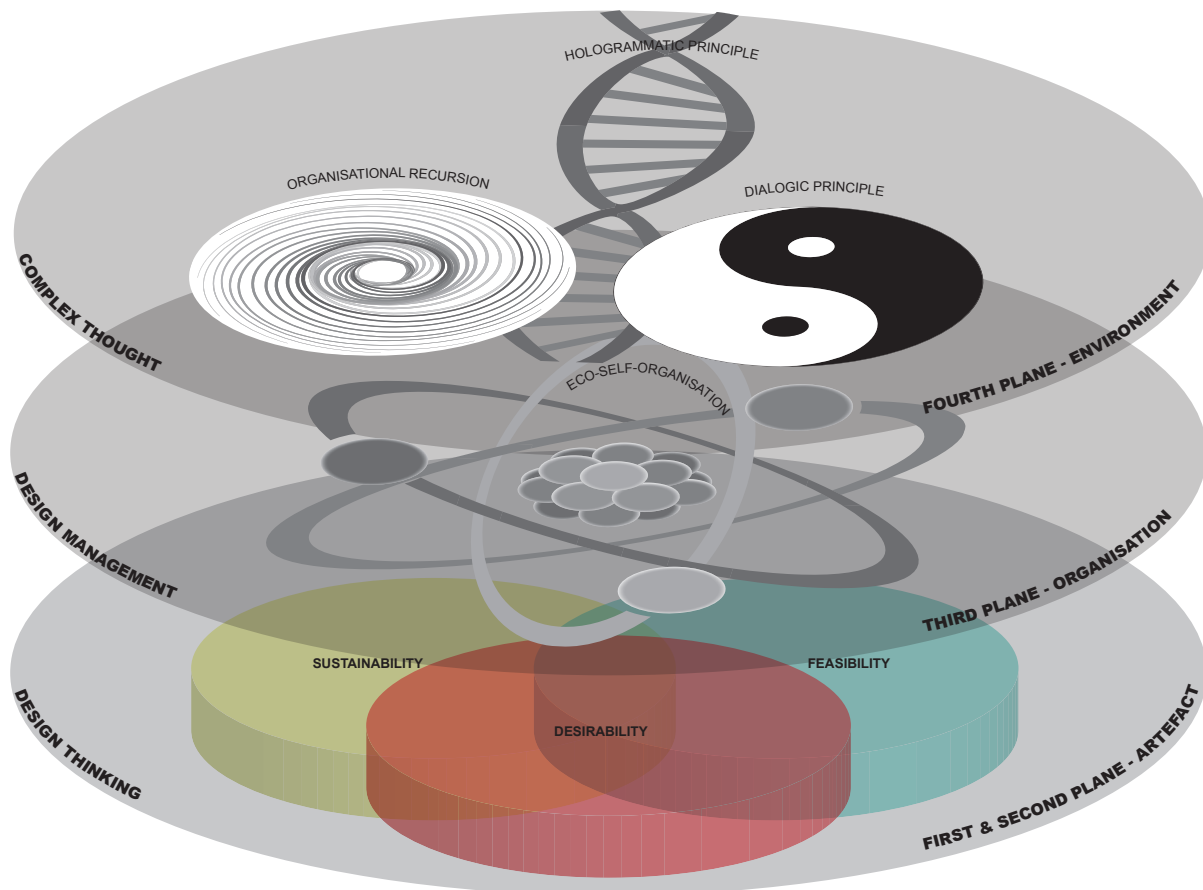


Figure 50. The three planes of complex thought and design thinking, CC BY-NC 4.0

There is a fourth plane—the contextual environment (the ecosystem)—in which the three sub-levels operate.

THE DIALOGIC PRINCIPLE—principles are “complimentary but also antagonists”. A knowledge book, regardless of its format (electronic or printed), has a dual life as a medium by itself and also as a guest medium in other hosting media (digital or not⁶).

THE ORGANISATIONAL RECURSION—knowledge books are simultaneously the effects and the causes, they “produce what produced them”. For Marion, this is the paradox of the flow economic of media by which media content are exposed to rapid obsolescence—oversupply “informational waste”^{*}—and, by “a contrary movement, the contemporary media culture is practicing large-scale recycling”^{*} (i.e. decomposition and recomposition for Latour). Transmedia (i.e. the publishing of the same discourse in different media) is another paradox of a discourse which is at the same time finished (“*une clôture*”) and unfinished (“*une ouverture*”) or the paradox of a “spiral wrapping”^{*}.

6 On the one hand, knowledge forms are migrating to digital platforms, where models of publication are, by their very nature, iterative; on the other hand, we are now printing more books than ever before and these books now live multichannel lives, raising a tangle of questions about the boundary between the world of information and the world of objects (not to mention the physical and social spaces in which they circulate). (Schnapp, 2014)

4. Literature review: publishing as Knowledge Design

In their 2012 book *Digital Humanities*, US Digital Humanists Anne Burdick, Johanna Drucker, Peter Lunenfeld, Todd Presner and Jeffrey Schnapp considered that “authorship is design and design is authorship”. For them, “editing is the creative, imaginative activity of making, and as such, design can be also seen as a kind of editing”. Publishers seldom have an engineering or a design background (except for designers who became publishers). They are essentially non-designers, and this is precisely why they need design thinking to become better knowledge designers:

- engineers do not need design thinking. They have the C-K theory and for them “the difference between designers’ and engineers’ ways of thinking [...] became a non-issue” (Simon cited in Johansson et al.) especially in the US context where design schools have traditionally been hosted in engineering faculties. *Conception* (design) theory can be related to “the creation of artefacts” (Johansson et al.) or “functional design” (Zacklad);
- some designers are very critical of design thinking and reject it. They have designerly thinking and consider that “design thinking does not imply anything of the specific role that professional designers could play compared to those of other actors” (Zacklad);
- non-designers (including publishers) need design thinking. Businesspeople recognise that their success of in the future will depend on them being more “masters of heuristics” than “managers of algorithms” (Martin, 2004). The design thinking approach of organizational problems can be understood as “part of management theory” (Johansson et al.) or as “relationship design” (Zacklad).

In this work, the operative definition of design thinking is of an “interdisciplinary theory of design” for non-designers. It draws on two other “models of thought” (C-K and designerly thinking)—also considering that these three standpoints are part of “an object-focused interdisciplinary”. They are therefore more inter-related than mutually exclusive. A paradox is that design researchers are still working on how designers think whereas non-designers (engineers and managers) think that they can think like designers.

In the last decade, with the resounding success of design thinking, design has become pervasive and ubiquitous. It has broadened to increasingly lack specificity. For instance, Sociologist Bruno Latour noted⁷ that multiple practices can be “assimilated” to designing (e.g. engineers, computer graphics designers or semioticians) and it has blurred the definition of the designer’s work. The same trend is at play in publishing. Design specialists Renée Bourassa, Lucile Haute and Gilles Rouffineau wondered in their 2018 introduction to a dossier on “the digital future of publishing” in the academic journal *Sciences du Design* what is happening to the designer’s work when it is no longer wholly about typesetting, typography and graphism and not yet fully in engineering and development?

7 Beyaert-Geslin, Anne. 2012. *Sémiotique du design*. Puf, coll. “Formes sémiotiques”. Paris.

The concept of “knowledge design” itself was forged by Jeffrey Schnapp in 2014. He applied the term to himself as a publisher-cum-researcher, and he also applied it to the innovative discipline of the digital humanities. First, he referred to his activity, although not a designer by training, as “knowledge design”. He defined it as “an integrated approach” which is “a combination of consecrated forms of humanistic, critical and historical inquiry, design thinking approaches, and both analog and technology-based experimentation” (Guffey, Elizabeth, Adam Michaels, & Jeffrey Schnapp. 2014. “Reinventing the Paperback Book in the Digital Age”. *Design and Culture* 6 (1)). Second, he also used “knowledge design” to describe the volatile “situation in the contemporary humanities” in which neither the *methods* nor the *forms and genres* are givens (2014. “Knowledge Design. Incubating new knowledge forms /genres / spaces in the laboratory of the digital humanities”. In *Herrenhausen lectures*. Herrenhausen Palace, Hannover, Germany: VolkswagenStiftung).

The term has migrated in the French academic literature in Design and ICS in 2018 as it was appropriated by researchers. In the same issue of *Sciences du Design* that was mentioned, Bourassa et al. included knowledge design into the definition of editorial design—along with information design, experience design and graphic design. In their editorial, Stéphane Vial, David Bihanic and Jocelyne Le Bœuf emphasised that knowledge design somehow encapsulates a convergence between design research and publishing innovation. The only other occurrence of the term “knowledge design” that I am aware of in the literature is its mention in the collective work of the research directors of the DirSIC *Dynamiques des recherches en sciences de l’information et de la communication* which is the de facto handbook of the discipline in the French domain. In the previous chapter about design and design thinking, it is mentioned that experience design and knowledge design deserve particular attention to study the challenge of information overload in the attention economy.

Knowledge design is a complex activity taking place in a complex ecosystem. It has evolved from a knowledge-based activity to encompass the wider perspective of a creative industry based on symbolic value. Design is apt at handling complexity and has an affinity with semiotics to deal with symbolic value.

5. Thinking out of the frames of publishing with Knowledge Design

Design is performative and syncretic (apt at integrating methods and concepts from other fields) and hence an appropriate method to consider and articulate a multidisciplinary theory of theories. Morin also considered that, even though a system of ideas is at the same time closed and open, two ideal-types can be distinguished. His definition of *theories* is “systems with precedence of opening over closing” apply more to this research work than *doctrines* which are the other way round.

As an element of a more comprehensive knowledge design theory, it is proposed to start with design thinking *for* publishing. Design thinking and publishing are next of kin with their respective lineage of visual thinking and typography. With the advent of digital, the introduction of agile into publishing—grounded in technology—is more recent. One of its sources lies in the

digital humanities with its underlying convergence between software publishing and academic publishing. This convergence is encapsulated in the concept of “digital literacy”—which is itself an heir of “media literacy”⁸. The methodologies which are referred to in publishing programs such as Jstor Labs and Cambridge Core (see the case and the appendix for details) are design thinking and agile⁹.

In the case of knowledge design, the Venn diagram of design thinking has been adapted to focus on knowledge books and to propose a mapping (see Figure 51). The resulting representation is a difficult-to-achieve and unstable compromise (particularly so in a VUCA environment). The creative industry of book publishing has been concerned with three core dimensions of design thinking (technology, design and business) for as long as it has existed:

- “*technology* of the intellect” [italics added] and its influence on the human culture (i.e. “the reduction of speech to graphic forms”, Goody) has fostered one of the most potent technological innovation in the history of mankind (i.e. moveable-type printing) which has recently been challenged by the digital technologies and the Internet;
- graphic *design* (i.e. typography);
- *business* (i.e. the commerce of ideas and how to make it economically sustainable).

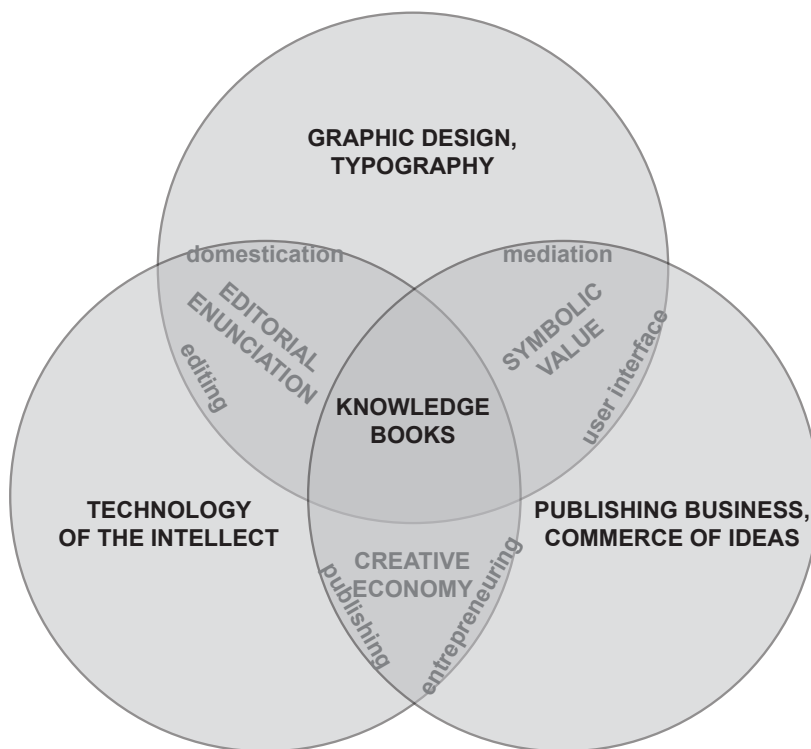


Figure 51. Design thinking for knowledge books, CC BY-NC 4.0

8 Media literacy was a reaction that started in the 1930s in the US and the UK as a reaction to war propaganda and resurfaced in the 1960s with the rise of advertising. It is basically a set of critical skills to judge and access manipulative messaging and to navigate the increase in various forms of media, and the capability for the more advanced to produce media.

9 The four values of the Agile Manifesto for software development are also an adaptation to VUCA: “Individuals and Interactions over processes and tools”; “Working Software over comprehensive documentation”; “Customer Collaboration over contract negotiation”; “Responding to Change over following a plan”.

The intersection of the two features of design and technology can be considered as Souchier's concept of editorial enunciation. Editorial enunciation is “trans-formational” and “assumes an indetermination of the meaning and the form”^{*} (1998)—the meaning being conveyed by the intellectual technology of writing and the form being expressed by typography. In *The Aesthetics of Design*, Jane Forsey (2013) wrote, in the same vein, that the “indetermination of the meaning and the form” blurs the distinction between design and technology; i.e. between form and function, and between aesthetics and technology of communication. Form and function are “symbiotically related in our judgements of design” in the Kantian concept of *dependent beauty*¹⁰. According to Heidegger (as reported by Forsey) this kind of aesthetic appreciation pertaining to dependent beauty is “extraordinary” i.e. some objects are *better than* the norm). At the intersection of graphic design and the commerce of ideas lies the symbolic value. Design operates at two levels in publishing. At the higher level of the publishing house, it is about branding but its value is limited because “author, list, series, or even individual title weighs more heavily in the purchaser's mind” (Luna, 2019). So, the brunt of the symbolic value is created at the lower level of the knowledge book itself (i.e. “the title”).

The creative economy is a substitute to the knowledge economy at the intersection of publishing as a technology of the intellect and of the business of publishing. A shift “away from content creation” and towards “innovating around form rather than content” (i.e. design) is recommended by Hall. Design thinking should engender “originality” to develop creative value “around the customers” and possibly to provide “not just books but wider services” (e.g. trans-media networks).

10 Dependent beauty happens when an object “fulfills its function we will have to actively engage with it, use it, handle it, wear it [...] it is ‘thick’ because it is based on an experience that includes knowledge of the thing in question” (Forsey, Jane. 2013. *The Aesthetics of Design*. Oxford University Press. New York, USA).

Chapter 10.

The scope of the KDT

Does Knowledge Design have the potential to become a theory of innovation?

Influenced by the systemic thinking of Simon in *The Sciences of the Artificial* and of Morin in *La Méthode*, and in order to find an answer to question above, I have explored the literature in the fields of Information Systems research and innovation theory for general theoretical background. Eventually, the resulting KDT was built on a formalisation of knowledge by the Design Science Research and on the C-K theory. It can be described as a theory of theories and as an eco-self-organisation composed with the three subsystems of the author-designers, the editor-designers and the publisher-designer. These “systems” eventually boil down to people and to their roles in a given publishing house and in a particular publishing process for a kind of books, the knowledge books. Because people are not essentially systems, the KDT has to accommodate a level of ambiguity and messiness. People who are the actual actors of knowledge design can be construed as ambidextrous thinkers (i.e. thinking with both, and sometimes simultaneously with their “right” and “left” brains¹¹) and as “T-shaped” persons (i.e. who have strengths in the two dimension of a depth of skill on one hand and, on the other, of empathy for people and for disciplines beyond one’s own). In a semiologist’s view, those two cognitive processes attributed to design (right-left, and the horizontal and the vertical bars of the “T”) which allow transversality are fundamentally a communication skill.

1. The situation of knowledge in Design Science Research

In the presentation of my methodology in the Introduction, I have already touched on the similarities between ICS and Information Systems Research (ISR). I should also stress that one of the particular characteristic of ISR is that, like Design, it is performative. This is why Design Science Research (DSR) is an important paradigm in ISR. And, at this stage, this is a theory *for* innovation that I intend to propose and therefore the ISR type V of “design and action” theory is particularly appropriate. Another reason to draw on DSR is its ontological and taxonomic contribution to the (five) natures of theory¹² and to the role of (two) different types of knowledge.

Because DSR studies socio-technical issues (i.e. Information Technology (IT), its environment and its users, and the relations between IT and its environments and its users), it draws on different scientific fields such as natural sciences, social sciences, sciences of the artificial, and on

11 I am aware that the convenient hypothesis of the emotional right brain and analytic left brain is not a scientific fact and that it has been put to a reality test by the discovery of the neurological plasticity of the brain. However, it remains a potent metaphor to evoke a complex neural mechanism.

12 Gregor classified theories in ISR in a taxonomy of five types: I. Analysis “what is” (ontological); II. Explanation “what is, how, why, when, where” (ontological and logical); III. Prediction “what is and what will be” (ontological and logical); IV. Explanation and prediction “what is, how, why, when, where, and what will be” (ontological and logical); V. Design and action “how to do something” (logical positivism and pragmatism) (Table 2 in Gregor, Shirley. 2006. “The Nature of Theory in Information Systems”. *MIS Quarterly* 30 (3)).

different types of research (from theoretical research to applied research, and vice versa). So, there is a tradition of openness and a shared inclination with other design fields to “smuggle” theories into the domains of application of DSR and to test them (induction) in its own framework. Such “imported” theories would more likely be what DR researchers Gregor and Hevner call “grand theories [of] type IV [...] General system theory provides a very high-level way of thinking about many of the open systems of interest in IS.” Examples of such theories would be ANT borrowed from Sociology or general system theory (Ashby 1956; von Bertalanffy 1973). If these theories prove useful for DSR (after theoretical hypotheses have been tested in cross-sectional variance studies), they are metabolised in models based on the concepts of input, throughput, output, feedback, boundary, and environment.

Then, these metabolised models are used to (re)design type V theories *for* design and action which, for Gregor and Hevner, say “how to do something”. My methodology has been influenced by this way of theorising in which case studies are “the preferred method of investigation” and one of the most important criteria is “utility to a community of users, the novelty of the artifact, and the persuasiveness of claims that it is effective”. Another characteristic of this type of theories is that they are prone to be used in the design of models to develop new “system artifacts” and to study their impacts “in the workplace and in society” (e.g. knowledge books in their transmedia system and how they impact and are impacted by how they are published—with or without knowledge design)

Professors of Business and researchers in Information Systems Shirley Gregor and Alan R. Hevner complement the definition of a theory¹³ in their field of research as a *form of knowledge*. In an integrative design perspective, this mention of *form* is an important contribution to a knowledge taxonomy since knowledge is traditionally only associated to content. The knowledge framework (see Figure 52) displays and associates two kinds of knowledge. On one hand prescriptive¹⁴ knowledge Λ (concepts, symbols, representations, semantics and syntax, algorithms, techniques, systems, products and processes) refers to the logical positivism and pragmatism of Peirce, Dewey and James, on the other hand descriptive¹⁵ knowledge Ω (phenomena, sense making) is ontological, and their relationships Λ - Ω are both ontological and logical ($\Lambda \rightarrow \Omega$ explanatory and $\Omega \rightarrow \Lambda$ predictive).

13 In DSR a theory is “an abstract entity, an intermeshed set of statements about relationships among constructs that aims to describe, explain, enhance understanding of, and, in some cases, predict the future” (Gregor & Hevner, 2013).

14 “*Prescription*. A special case of prediction exists where the theory provides a description of the method or structure or both for the construction of an artifact (akin to a recipe). The provision of the recipe implies that the recipe, if acted upon, will cause an artifact of a certain type to come into being.” (Gregor, Shirley. 2006. “The Nature of Theory in Information Systems”. *MIS Quarterly* 30 (3)). “design theories are prescriptive theories, based on scientific theory, technical information, and imagination” (Markus, M, L. A. Majchrzak, et L. Gasser. 2002. “A Design Theory for Systems that Support Emergent Knowledge Processes”. *MIS Quarterly* 26 (3))

15 “*Analysis and description*. The theory provides a description of the phenomena of interest, analysis of relationships among those constructs, the degree of generalizability in constructs and relationships and the boundaries within which relationships, and observations hold.” (ibid.)

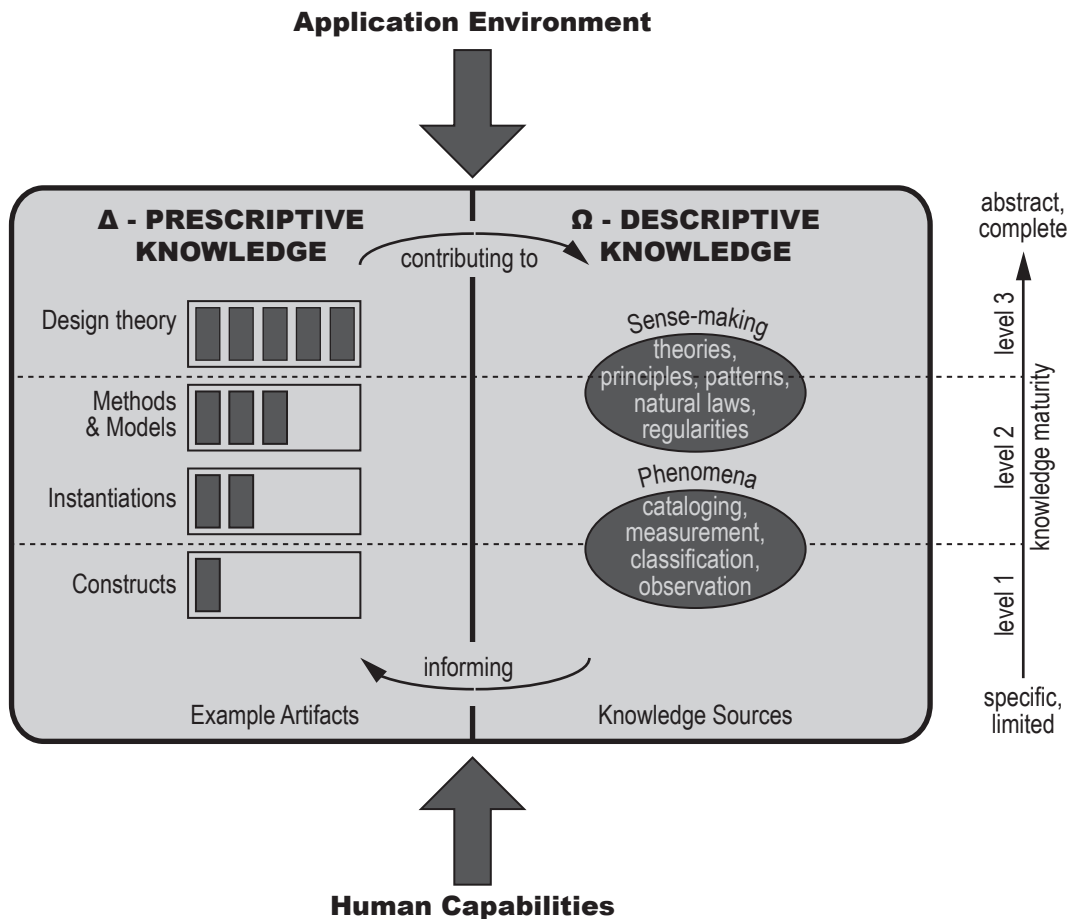


Figure 52. The knowledge framework in Design Science Research, CC BY-NC 4.0

Sources: Fig. 1 & Fig. 2—The Roles of Knowledge in Design Science Research in Gregor, Shirley & Alan R. Hevner. 2013. “Positioning and Presenting Design Science Research for Maximum Impact”. MIS Quarterly 37 (2); Table 2—A Taxonomy of Theory Types in Information Systems Research in Gregor, Shirley. 2006. “The Nature of Theory in Information Systems”. MIS Quarterly 30 (3)

In the knowledge framework of DSR, the inputs are Λ and Ω . Prescriptive knowledge Λ belongs to the sphere of what Simon called “the sciences of the artificial”, while descriptive knowledge Ω belongs to the sphere of natural science. The throughputs of the DSR knowledge framework for the researcher are the “interlinks” between Λ and Ω . The researcher either draws “known artifacts and design theories” from base Λ in order to “solve similar research problems” (induction) or draws “relevant descriptive and propositional knowledge” from base Ω in order to “inform the research questions” (deduction). Since the researcher’s role is to contribute knowledge, knowledge is the output of the Design Theory. It can be classified in four quadrants. The first quadrant of “routine design” which matches existing artefacts Λ with existing knowledge Ω does not produce any new knowledge and is therefore not relevant for research. “Exaptation” interlinks existing Λ from other “disciplines of thought” (i.e. consilience) with new problems in Ω . “Improvement” arises from the creation of a better solution in Λ for an existing problem in

Ω . The rarest and paradigmatic form of knowledge creation is the radical breakthrough of “true invention” which combines a new Λ with a new Ω .

An epistemological issue, raised by Gregor and Hevner themselves yet remains, which is not addressed by the Design Theory: “how Design Science Research relates to human knowledge”?. This problem is of the utmost importance for this research work focused on the innovative communication of human knowledge between humans.

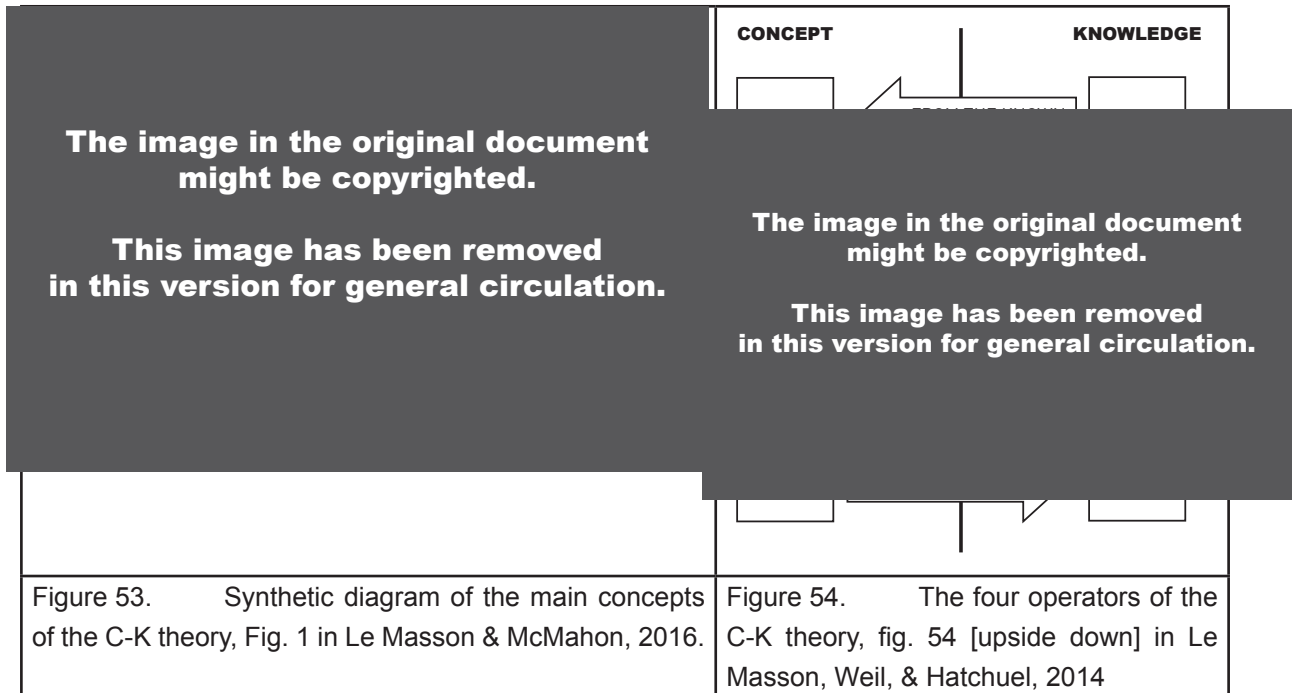
2. The C-K theory

In a 2017 article¹⁶, Pascal Le Masson, who worked along with its creators Armand Hatchuel and Benoît Weil, explained that the C-K theory was a paradigmatic breakthrough, when it was first presented in 1996, away from the traditional separation of the theory of knowledge and of the theory of creativity. Because a theory is defined as “a complex system of objects which must at least be logical” and logic is defined as “the science of distinction of true from false reasoning” (see 1 What is a theory?), the conundrum was to demonstrate that creative thinking is “true reasoning” and to find “logical objects” upon which to systematise a theory. Knowledge, which is one such logical object, was already proved to exist and was well defined (a theory of knowledge was available).

What about a theory of creativity and what could its objects be? In a way, the C-K Theory refers to the *second-order of logic* and equates the fuzzy “designer brief” to an *unsaturated entity* which is considered to be a “rational and rigorous” *proposition*. In C-K, this proposition is called a concept (C). So far, neither practitioners (e.g. engineers and managers) nor researchers had recognised the logical status of a concept because it could not be binarily defined as a true or as a false proposition. This reasoning holds for one kind of proposition defined as a *fact* (“true propositions” considered a 0-place relation), but it does not consider another “true reasoning” in the wider perspective of a *propositional function* (a *n*-place relation predicated of *n* arguments). So, propositions can be considered as a propositional function that is neither true nor false but still logical, and thus can be construed as the logical object of a theory of creativity. The next “wicked problem” for C-K is to elaborate a theory of creativity and somehow to match it with the existing theory of knowledge. C-K is logical, and logic is “a theory of relations” which also rests on the three kinds of first-order logic. First, the truth-value (0-place or *n*-place relation) of the *predicates* K (knowledge) and C (concept) are defined. Second, the theory of knowledge is an ontological *set theory* in which the objects are mapped as different categories (available knowledge, knowledge in-the-making and new knowledge). Third, the theory of creativity is an epistemological *theory of the objects of thought* (i.e. concepts) based on *intentionality* (i.e. design thinking—”how things ought to be in order to attain goals” for Simon). In short, the concept space is epistemological, the knowledge space is ontological and the relation between the two spaces C-K is logical.

¹⁶ Pascal Le Masson, 2017, « La théorie C-K, ou comment modéliser la créativité », *Paris Innovation Review*, 28 avril

In their 2014 textbook¹⁷, Le Masson, Weil and Hatchuel insisted that the C space has a tree structure. The “properties” (i.e. *predicates*) of the C objects are displayed in the K space, but they are not “defined”. The aim is to trigger “expanding partitions” (e.g. imagination, inspiration, analogies, metaphors) that lead to creating new knowledge, not through trial-and-error but by “forcing” an original exploration without presuming that it will result into a realistic or a possible solution (see Figure 53).



A major discovery with C-K is that the interactions between the two spaces C and K are invariant and expandable as they “produce new objects and new knowledge at the same time”. On one hand, two operators create new knowledge: $C \rightarrow K$ by conjunction and $K \rightarrow K$ by deduction, on the other hand, the two other operators create new concepts: $K \rightarrow C$ by disjunction and $C \rightarrow C$ by abduction (see Figure 54). In a given ecosystem at a particular time, some concepts are *manageable*; i.e. the available knowledge can be associated with concepts of feasible artefacts. In the same context, *desirable* concepts can not necessarily be implemented without substantial training and upskilling; i.e. they can only be imagined. At this stage, K represents a “state of the non-art”. Thus, in order to achieve a new state of the art the “tacit facets” of the properties of the K objects (e.g. uses, business models, technological functionalities) should be activated. Since these three facets equate with the three dimensions of the Venn diagram of design thinking (i.e. design, technology, and business) there is a choice of using either design thinking methods with the C-K theory or the KCP methodology devised specifically by its the authors. My preferred method in the context of publishing is design thinking which comes from a design background

17 Le Masson, Pascal, Benoit Weil, & Armand Hatchuel. 2014. *Théorie, méthodes et organisations de la conception*. Presses des Mines, coll. “Sciences de la conception”. Paris.

and has proved its worth for more form-oriented artefacts like media. KCP is more function-focused due to its engineering background.

3. The composition of the KDT

My proposition of a Knowledge Design Theory is not a creation but a composition: it is not new, but it strives to be original. Of the five types in Gregor's taxonomy of theories, this theory draws on logical positivism and pragmatism and attempts to fit with the fifth type of "design and action"—as it is specifically geared towards innovation. For the sake of clarity, the composition of the Knowledge Design Theory is shown as a three-stage design process: 1. composing with the C-K Theory (see Figure 55), 2. mapping with the Design Ladder (see Figure 56), and 3. a proposal of a Knowledge Design Theory for knowledge books (see Figure 57).

3.1. Composing with the C-K Theory

The three elements of this composition are the abductive and innovative method of design thinking and the two fifth type (design and action) Λ - Ω Design Theory and C-K Theory. At its core, the Knowledge Design Theory is based on the C-K Theory (see Figure 55). Λ - Ω introduces the distinction between descriptive and prescriptive knowledge which brings along an "improvement" $K \rightarrow K$ operator that was not described in the C-K Theory. Conversely, "routine design" of the Λ - Ω Theory is not part of the Knowledge Design Theory because it is outside of the scope of innovation. Another input of Λ - Ω is the explicit recognition of the impact of the two exogenous forces of "human capabilities" and "application environment". The Knowledge Design Theory also draws on design thinking methods and, in this sense, those two forces become part of the wider-encompassing concepts of "human and economic resources" and of "technology". The more specific contribution of design thinking to the theory is its user-centricity and the necessity to take the users into account, hence the two additional forces of "desirability for the users" and feedback from the users". This is a substantial difference with C-K which is more product-oriented.

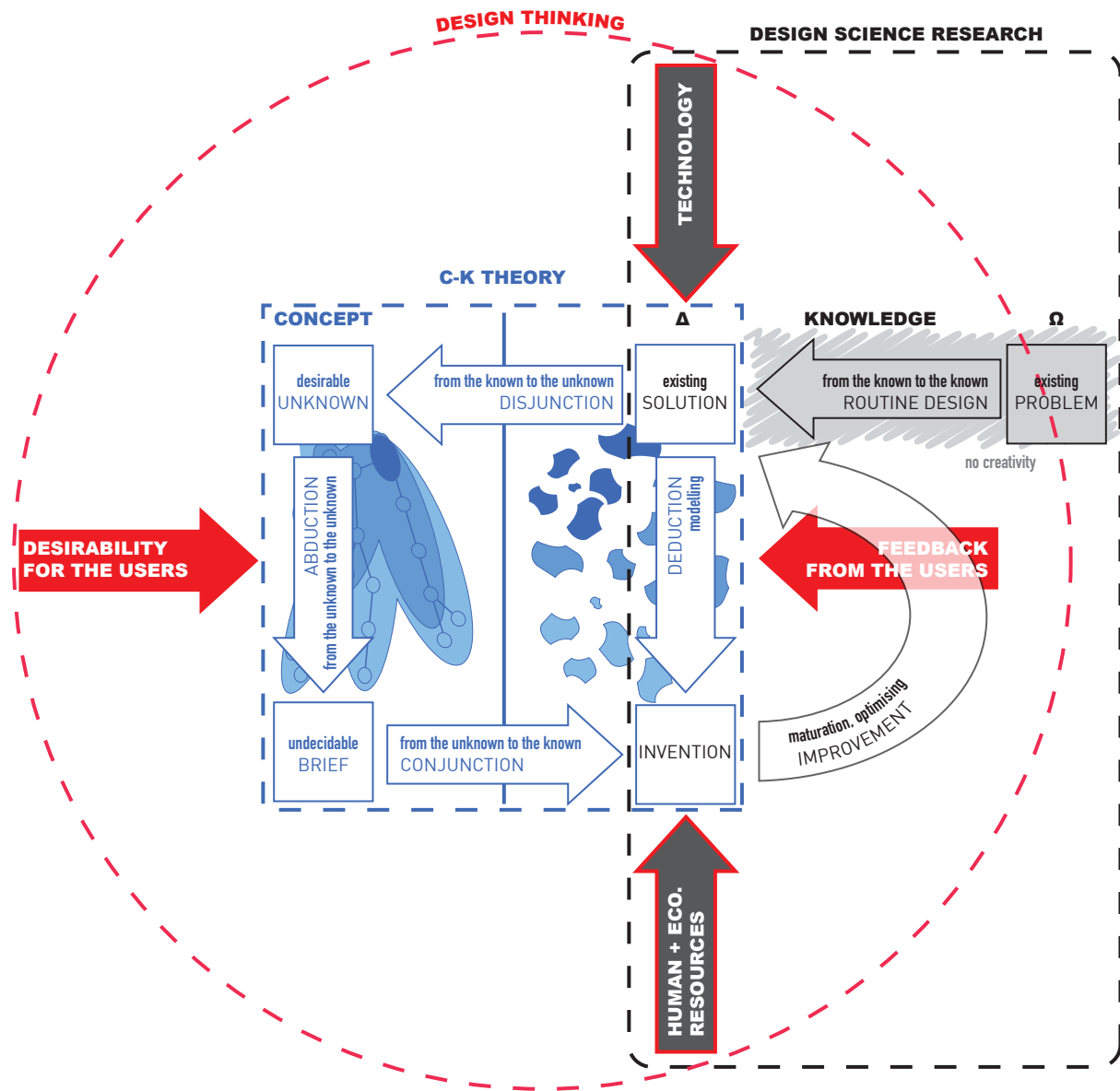


Figure 55. The first stage of the design of the Knowledge Design Theory: a cross-cutting model of design thinking, C-K Theory and Design Science Research, CC BY-NC 4.0

One possible translation of the French *dispositif*¹⁸ is “design”, and one of the key concepts of the ICS is socio-technical design. In this sense and at this first stage, the design of the Knowledge Design Theory is merely technical (i.e. an explanation of innovation) as it lacks most of the sociological dimension. In a broader systemic approach of innovation, as was developed at MinesParisTech¹⁹ since the 1980s, it seems plausible to compose the Design Knowledge Theory with elements of the C-K and of the Actor-Network Theory (ANT). Interestingly, the

18 Laroche, Valérie. 2018. *Le dispositif. Un concept pour les sciences de l’information et de la communication*. ISTE éditions, coll. “Des concepts pour penser la société du XXI^e siècle”. London, UK.

19 Both ANT and C-K were first developed at the École nationale supérieure des mines de Paris (now known as Mines ParisTech), respectively by Michel Callon and Bruno Latour at the Centre de Sociologie de l’Innovation in the early 1980s, and by Armand Hatchuel and Benoît Weil at the Centre de Gestion Scientifique in the mid 1990s.

ANT could be construed as a material-semiotic method rather than as a theory and Latour himself equated his material-semiotic approach to an “how-to book”. This metaphoric description is pretty similar to the definition of a knowledge book, and both the references to book and to semiotics point to the relationships between ICS and ANT.

In the ANT perspective, there is a fundamental distinction between intermediaries and mediators. Actors can be either non-human or human actors, and it is intentionality that distinguishes them from intermediaries. The description of the intermediaries, of the mediators—the actors—and of their relationships—in the form of network (or Latour’s preferred concept of “rhizome” after Guattari and Deleuze)—is the core of the ANT. In this sense, the serial description of a linear value chain of publishing (one-to-one relationships, one after the other—from the author to the editor, from the editor to the publisher, and so on until from the bookseller to the reader) does not fit with the characteristics of a network (one-to-many relationships, potentially all at the same time). The publishing theory of the value chain is an ontological and logical “explanatory” (i.e. a theory of the second type in Gregor’s taxonomy of theories). It has been used as a substrate in the composition of the Knowledge Design Theory. As a reference to Latour’s attempt at a “Compositionist Manifesto”, the value chain is not incorporated as a structured whole, rather it is “decomposed” and its elements are used as a “compost” (see grey area at the bottom of Figure 56). It can also be said, following Lévi-Strauss’ structuralist approach of *bricolage* in the mythical thought, that the contribution of the publishing theory to the Knowledge Design theory is a metaphor of the *mythological universes* which are “meant to be dismantled as soon as they are taking shape so that new universes can arise from their fragments”*. Here, the myth in its anthropological sense is used as a metaphor for a theory, and the myth will also be used in “Part Three: The Publishing Model Canvas” in its semiotic sense as a system to structure the model.

3.2. Mapping with the Design Ladder

The second stage of the design process of the Knowledge Design Theory is a mapping of the mediators. These human actors should rather be thought of as roles²⁰ than as actual human beings. Because one major aim is to go beyond the traditional publishing theory, the relationships between the author and the editor as people are considered, but not foremost. What is foremost in the Knowledge Design Theory are the interactions of the broader-described author roles (writer, illustrator, editor, graphic designer, typesetter, etc.) with each other and with the two publishing roles as a mediator (between the book project and the purpose of the publishing house) and as a manager (in charge of creating, or of making sure, value is created by the project itself and also by the project as part of the publisher list contributing to the imprint brand) and of the capacity of those three roles to act as designers. These capacities and interactions are described by the Design Ladder with a 4-step graduated scale of desirability from “no design” to “design as strategy” (see Figure 56):

20 Kelley, Tom & Jonathan Littman. 2005. *The Ten Faces of Innovation: IDEO’s Strategies for Beating the Devil’s Advocate and Driving Creativity Throughout Your Organization*. 1st edition. New York: Currency/Doubleday.

- step 1 “no design” is beneath design thinking for there is no consideration beyond content and it is a simplistic endeavour. The book is defined as its content. The book design is unthought of (dependent beauty is overlooked) and not designed *for* actual readers (the reader is altogether ignored or is an imagined reader not grounded in reality) but as a conceptual compromise between the author and the editor;
- step 2 “design as form-giving”, the book is designed according to two of the three precepts of design thinking: one is to be technically *feasible* for the project team; and the other is to be economically *sustainable*. At this stage, the book is materialised as an artefact. Form, content and function are taken into account during the knowledge design process;
- step 3 “design as process” is the level at which design is considered as a recurring pattern of the organisation (e.g. the imprint). Books are considered as projects and the role of the publisher is twofold. The books are considered as projects with readers in mind and should meet the third criterion of design thinking; i.e. to be *desirable* for them. In addition and at the same time, the publisher should make sure that these projects fit with the editorial policy of the publishing house and with its actual readership (the readers should be involved either indirectly—customers’ feedbacks are encouraged and taken into account— or directly—open innovation; i.e. customers are involved in the design process and their input is integrated into the book; e.g. UGC);
- at the ultimate step 4 “design as strategy”, design is a central element of an integrated corporate strategy to encourage innovation. Essential features of the organisation (e.g. the publishing house or publishing group) are designed accordingly (e.g. flat organisation charts, flexible schedules, non-financially based incentives, flex-office, etc.). The contribution of each book is an asset for the imprint.

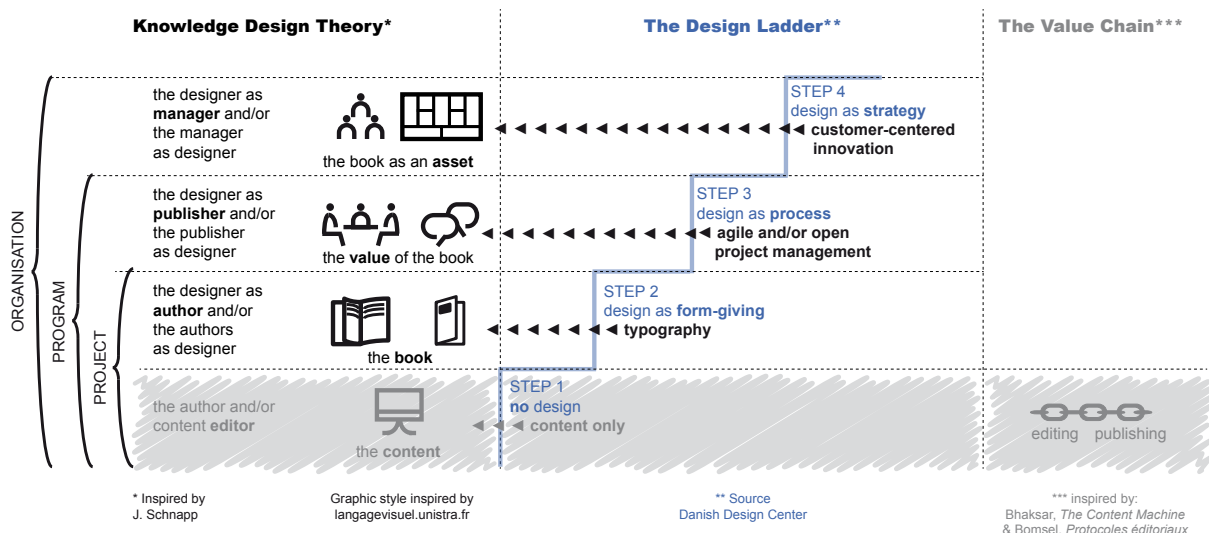


Figure 56. The framework of the design of the Knowledge Design Theory inspired by the Design Ladder, CC BY-NC 4.0

3.3. A Knowledge Design Theory for knowledge books

As in the ANT, there are intermediaries and mediators. In the Knowledge Design Theory, those non-human intermediaries are artefacts (a knowledge book and its transmedia network) and they are central. The knowledge book artefact can be described as the overlapping of three main characteristics that are described, in design thinking terms, as “editorial enunciation”, “symbolic value” and “creative economy” (see Figure 51). The respective mediators for those features are the three roles of “the designers as author and/or the authors as designer” for the editorial enunciation, “the designers as publisher and/or the publisher as designer” for the symbolic value, and “the designers as manager and/or the manager as designer” for the creative economy (see Figure 56). Those three endogenous mediators and the intermediaries they produce are influenced by their interactions with the three main exogenous forces of the users, the technology, and the human and economic resources of their ecosystems (see Figure 55).

The Knowledge Design Theory is a composition articulating the three ecosystems of the publishing house (or the imprint in the larger publishing groups), of the suppliers (they can be mere vendors or partners) and of the clients (already readers of the existing book list or potential clients) into an eco-self-organisation (see Figure 57):

- The designer-authors act as gatekeepers of the publishing technologies and as users of their typographical capabilities in order to formalise original content and materialise it into a book and the other components of its transmedia network. In this respect, each book can be construed as an invention;
- The designer-publishers’ aim is to translate an invention into an innovation by expressing its symbolic value. The symbolic value of a book is not an absolute value, but the perception of its value by its users (as in the definition of an innovation as a marketable invention endowed with social value). There is a virtuous circle of improving inventions by comparing them to existing solutions (learning by experience) and by introducing new technological features as they become available or are specifically developed (techno-push). However, this circle is not an infinity loop as the inventive content gets exhausted over time (i.e. information entropy), and therefore new creative input is needed at times;
- The designer-managers’ role is to stimulate creativity by breaking the deduction-improvement incremental innovation loop in order to literally think out of the box and possibly foster disruptive innovation. This endeavour can be initiated by exceptionally gifted creative thinkers within the publishing house, but it is usually more efficiently achieved by involving external users (it could range from user panels and users contributions to open innovation on par with external stakeholders). In this conceptual “creaverse” (creative universe) no prior knowledge is required and feasible and unfeasible books alike should be considered in an expansive process “from the unknown to the unknown”. Ultimately, it is the management’s responsibility that the right to fail is granted to the participants in the creative process.

The scope of the KDT

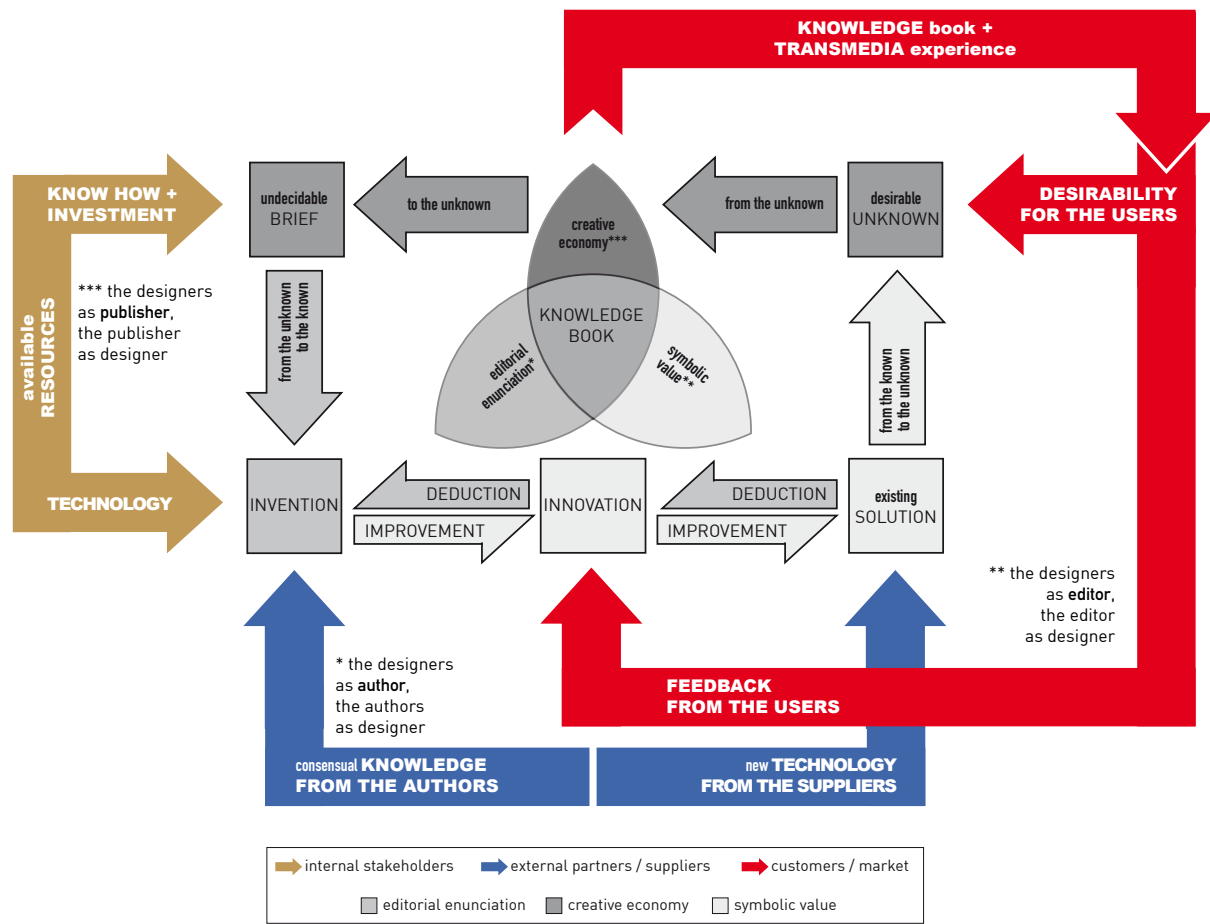


Figure 57. The Knowledge Design Theory, CC BY-NC 4.0

Chapter 11.

The benefits and limitations of the KDT

The KDT is intermeshing two types of subsystems—an ecosystem and a self-organisation—into what Morin calls an eco-self-organisation. I have already touched on the ecosystem in the previous chapter and will now elaborate on the self-organisation. A breakdown analysis of the three sub self-organisations (the author-designers, the editor-designers, and the publisher-designer) is shown hereafter.

1. The system of the author-designer

The author-designers can be authors only who collaborate with editors to publish their knowledge book, or author-editors who are “professional” authors or who self-publish. Their scope for innovation (see Figure 58) is, on one side, the combination of the originality of their content, their writing style and their iconography and, on the other, the graphic, layout and publishing systems they have access to and a working knowledge of. Before the 20th century, as in other industries, there has been a long tradition in publishing of “unselfconscious” design. “The craftsman simply copied the design of an object from its previous examples” (Cross, 1982) and design “was not held as a distinct activity” (Louridas, 1999).

But, for researcher in Information Systems Panagiotis Louridas, three factors have led to a change in design appreciation: “human societies grew in size and complexity”; “technology evolved”; and “capitalism became the dominant mode of production”. Still, in a way, the designer has remained a bricoleur who “makes do with the means available” (Levi Strauss, 1962). Author-designers belong to either one of the two following categories identified by influential Designer Helmut Esslinger (founder of Frog studio): “artistic designers” who rely on “visceral methods to create products with spectacular visual appeal” and “classic designers” who are able to “generate individualistic-artistic statements that balance an appeal to the heart with an appeal to the mind”. They belong to a category that Design researcher Nicolas Nova designates as “heroic” in which the designer as an author is not necessarily accountable for her choice.

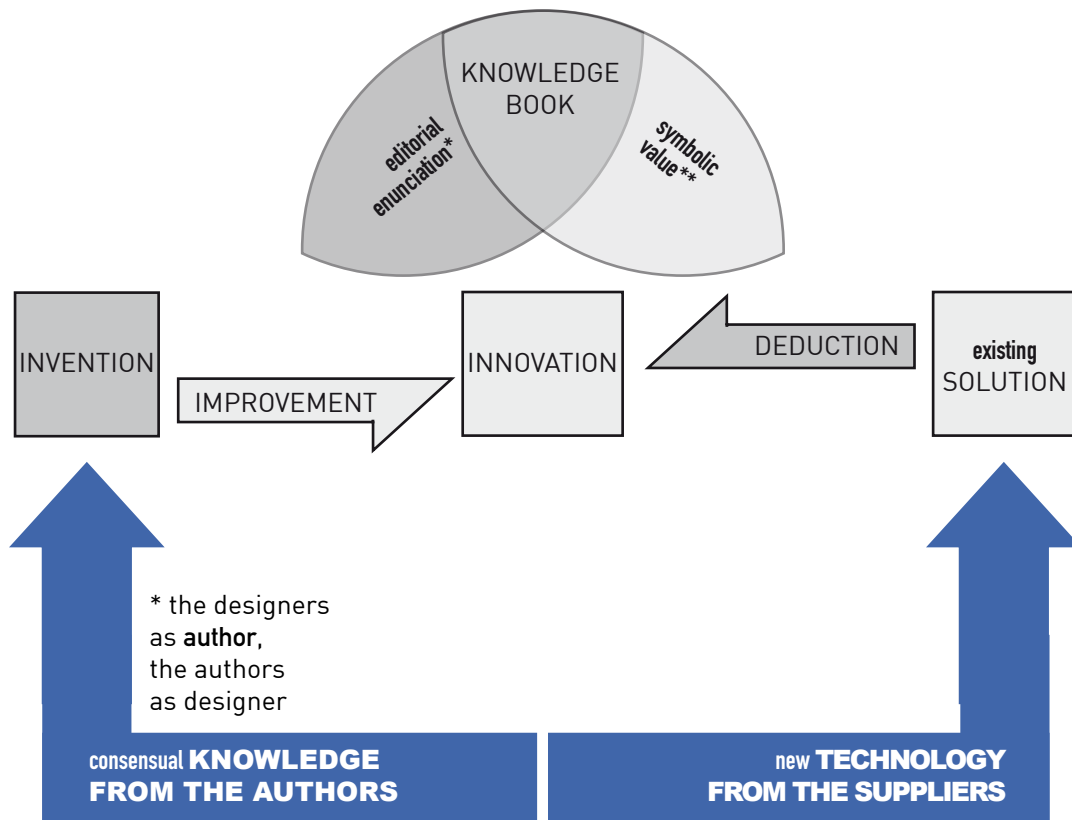


Figure 58. The system of the author-designer, CC BY-NC 4.0

The author-designer system does not need to be a closed loop (a self-organisation) and can be opened to entertain and integrate external stakeholders (e.g. a pool of authors, selected suppliers which can be considered as strategic partners). This system would then become an eco-self-organisation that would be more inclined to open innovation. For example, Cambridge University Press has created and is maintaining a community of stakeholders, the Cambridge Panel (see Figure 59).

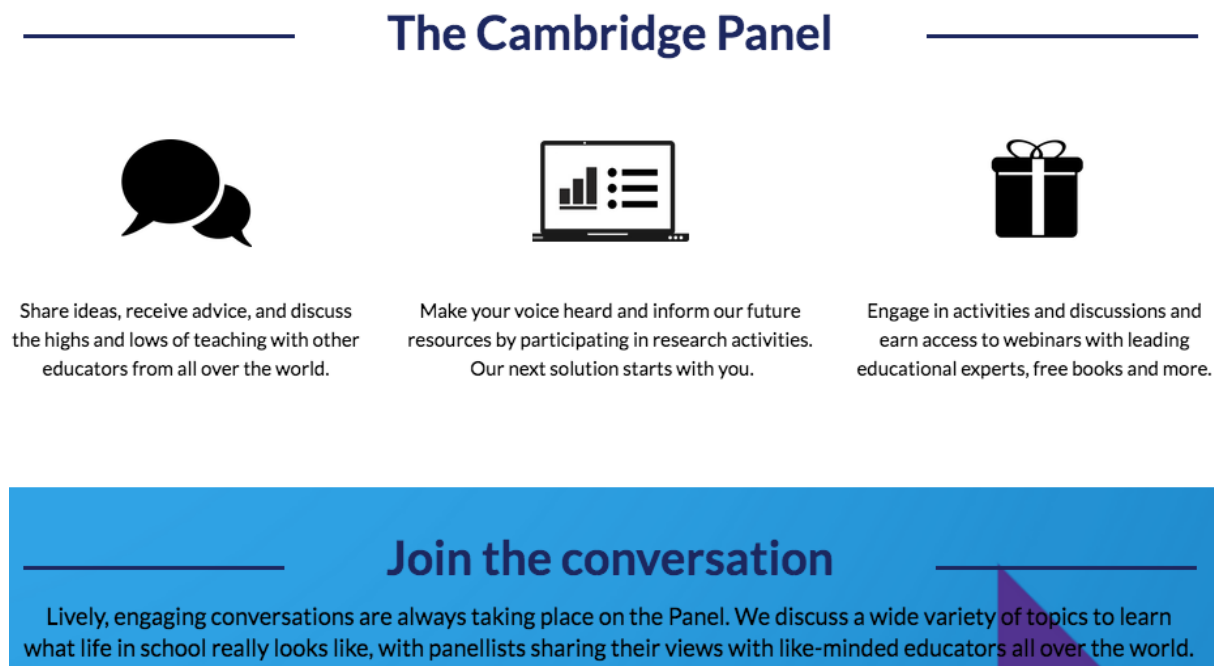


Figure 59. The Cambridge Panel [website viewed 23rd June 2020]

2. The system of the editor-designer

The editor-designer is an editor-publisher whose operational responsibility is to publish books and who does not necessarily have a strategic management role in the publishing house. In this case, the scope for innovation (see Figure 60) does not come from being an author or working directly with authors on the books themselves. On one hand, it comes from the market knowledge and interactions with readers about what they like and dislike, and what books sell and what kinds of other books do not and, on the other hand, the editor can choose and adapt a digital publishing system in order to innovate on process. Ultimately, his role as an innovator is to identify publishing concepts which are “desirable unknowns” for the readers.

While Eslinger describes these designers as “those who work in anonymity”, Nova thinks of them as “scientific” (problem solvers relying on a rigorous approach and a positivist perspective) and “pragmatic” (with a relaxed attitude which leads them to make different choices depending on the situation at hand). In a world where Anthropologist Christine Miller regrets that “outputs of mass production were not perceived to be the responsibility of the individuals who designed them”—and particularly in the publishing industry where oversupply is a recurring issue—it has become of the utmost importance to reduce “physical distance between designers and users” (hence the necessity to get feedbacks from users and to take them into account in the design-publishing process).

Part Three:
The Publishing Model Canvas

Chapter 12.

The purpose of the PMC

As a theory, the KDT generates analytical knowledge. The PMC, as a model, is geared to producing desirable concepts of Minimum Viable Products (MVPs) for all the stakeholders (client-readers, author-designers, editor-designers and publisher-designers). This model, being woven by a variety of participants, is referred to as a canvas. This canvas model is a simplified representation of complex projects undertaken by people with different backgrounds and, possibly, conflicting interests. These differences should not be ignored, but instead spelled out and discussed by the participants in order to reach a compromise. In the design thinking approach of knowledge design, this compromise needs not be a lowest common denominator but can be augmented by creativity in order to formulate an innovative concept.

1. The media context and an example of concept

1.1. The VUCA environment of media

In the Introduction of this thesis, the migration of the concept of VUCA from the military world to the business world in the 1990s was mentioned. As in many sectors, digital has had a major effect on publishing in general, but in the specific context of book publishing the major impact is better termed as phygital.

VOLATILITY is a quantifying parameter of the risk related to yield. For instance in finance, the higher the volatility the bigger the potential yield but also the higher the risk of a loss. In the publishing industry—an “industry of prototypes”—the saying goes that the success of one book offsets nine commercial flops. It is a reminder of the Pareto law (i.e. 80% of the titles published amount to 20% of the sales and vice versa) and has inspired the theory of the “long tail” (Anderson, 2006). In France this saying is difficult to substantiate because figures are generally not made public, are not detailed when they are, and are not always trustworthy. In the US and the UK, in the field of trade publishing “thanks to Bookscan, the sales history of any book published after 2000-1 is now public knowledge” (Thompson, 2010). Researchers in complex systems and networks have even recently claimed that, thanks to big data, “the ground is set for the development of tools to predict the parameters of the model before the book is published” (Yucesoy et al., 2018)¹.

UNCERTAINTY is—by nature—not computable. It can not be evaluated by quantitative methods such as statistics. For the time being, and even on the much-studied segment of fiction books, commercial success remains at least uncertain as no algorithm has yet proved able to predict future sales. Because the publishing industry at large still relies on serendipity, it is structurally organised to churn out many books and to innovate in order to try and create enough opportuni-

¹ Yucesoy, Burcu, Xindi Wang, Junming Huang, & Albert-László Barabási. 2018. “Success in Books: A Big Data Approach to Bestsellers”. *EPJ Data Science* 7 (1): 7.

ties to thrive. Design thinking which draws on qualitative methods (such as ethnographic models used by business anthropologists) and favours heuristics over algorithms could be useful in trying to better allocate publishing resources. Instead of releasing as many books as possible, it might indeed be worth investing more in better books in order to increase their respective chances of success through good design. Knowledge can be better designed, and it should be. COMPLEXITY is a key feature of design as it can summarily be defined as harmonising form and function. Philosopher Jane Forsey for instance wrote that “form and function are symbiotically related in our judgements of design” (2013). It is a desirable compromise between contextual endogenous complexity and exogenous constraints related to the environment. Publishing is complex and can be thought of as a triadic system overlapping the three dimensions of design thinking (1. *media design*, 2. *business deontology*, and 3. *digital technology*). Another dimension—that of transmedia phygitality (e.g. p-books sold online and e-books catalogued and made accessible in library buildings)—is adding complexity to the world of book publishing. AMBIGUITY is generated by the technological and cultural environments. The media system is supposed to actively encourage “discontinuity, invention, supplementarity, creativity between associations of mediators” (Latour, 2010). Each medium in this system is a phenomenon, an emergence, the active product of the actions of the mediators and of the intermediaries and, for Morin, knowledge itself is an organising instance. So, it seems only logical that knowledge design should apply to the particular medium of book in order to design better knowledge books. In short, VUCA calls for knowledge design.

1.2. An example of abduction by design

For designer researchers Cross, Dorst, & Roozenburg, what Habermas calls “innovative abduction” comes to the fore in design thinking. In a creative thought exercise, the emblematic design and innovation studio Ideo staged a design exploration of books. They eventually came up with a vision of the future of the book revolving around the same three main issues of information overload, irrelevant and/or inaccurate data (and possibly fake news), and delinearisation of time (see Table 5) that I have identified. They proposed three design concepts (see Figure 62).

Table 5. Design exploration of the future of the book by Ideo (2010)

Problem	Opportunity	Design brief	Elements of the design concept
information overload → cognitive overload	topical reading with richer context → Nelson	With all the information available [...] what's truly worth knowing?	- multiple perspective - discovery based on impact - series of information layers - current media exposure and mapping of discourse over time

irrelevant and/or inaccurate data → cognitive uncertainty	social tools for critical thinking → Coupland	How do we make sure we are adequately informed?	- based on the professional network - overview of popular reads - book club, discussions - customised reading lists by topic, department
delinearisation of time → splintering of attention	new narratives → Alice	How might we experience written narrative in new and engaging ways?	- going to places (geolocation) - communicating with the characters - co-development of the story

At the The Brian Lehrer Show on the WNYC radio network of 21st September 2010, the host presented the three concepts as expanding information (Nelson), conversely narrowing down information (Coupland) and reimagining fiction while questioning whether it was gaming or reading. Guests Duane Bray (partner) and Robert Lenne (interaction designer) from Ideo agreed and expanded on their design exploration. Nelson is “contextual wares [...] to check the facts”, a book connected to many sources of information which put it into a wider context. When asked if Coupland is like what algorithms of Amazon or Netflix do; they answered that “it is more about individuals [in the same business community] than algorithms” it is a shared context a bit like the Twitter model. And they added that it could allow new ways to buy and sell books, “not one by one but licensing” them. And last, for Alice, they saw it like a “dialogue” between the readers and the book.

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<p>“Nelson” connects books to commentary, critique, and contextual information, letting readers explore a <i>topic</i> from multiple perspectives. Nelson reinforces the role of books as carriers of knowledge and insight.</p>	<p>“Coupland” explores book discovery as a <i>social activity</i> by allowing readers to build shared libraries and hear about additional texts through existing networks.</p>	<p>“Alice” turns <i>storytelling</i> on its head by making narratives non-linear and participatory.</p>

Figure 62. The three design concepts around the future of the book proposed by Ideo, 2010

Source: www.ideo.com/post/future-of-the-book [viewed 15th January 2020]

Ideo's examples of an abductive design exploration are inspiring. As such, they are mere low-level "*pre-totypes*" (i.e. preliminary prototype). Nor do they provide rules to devise a mid-level method and neither can they be articulated as elements of a higher-level theory. Still, actual services were released within the same decade that are similar to the concepts suggested by Ideo and which changed the landscape of publishing. For instance, TopicGraph and TextAnalyzer (beta version released in 2016, see Chapter 24) are similar to Nelson, the social network Goodreads (launched in 2007) looks like a personal version of the more professionally-oriented Coupland, and Wattpad (founded in 2006) shares some features with Alice.

Of the examples above, Alice, Goodreads and Wattpad do not address knowledge books and Coupland, Nelson and TextAnalyzer only do so partially. So there is a need to explore and analyse the issues with and challenges for knowledge books in a more focused and systematic manner; i.e. to complement what has been learnt by abduction with deduction.

2. The three contextual challenges with knowledge mediation

A typical design approach starts with an observation to provide thought for thought. It is followed by creative thinking sessions out of which concepts emerge. Then, those concepts deemed to have the best potential are prototyped and tested. Eventually, the Proofs Of Concepts (POCs) for which there is good feedback are assembled into functional and desirable artefacts. Those better formalised and more detailed prototypes are also tested before the most promising MVP is launched. An exploration of the future of the book (i.e. observation, creativity and conceptualisation) by design studio Ideo is presented.

What is of specific interest to this research is the context of my second research question, as stated in the section «What is the problem in today's digital information society?» of the «Introduction». It is based on the three problems of information overload, irrelevant and/or inaccurate data and possibly fake news, and delinearisation of time. In a less designerly way than Ideo's exercise of style, a discussion of each of those three challenges is proposed.

2.1. Information overload

Bomseel pointed out a complex "structural asymmetry"* of publishing between transmitters and receivers which can be called a double-blind. On one hand, there are so many books already available, plus those published each year (more than 300,000 in the US, over 180,000 in the UK and in excess of 60,000 in France), that the public can not keep up. On the other hand, publishers do not know the readers of their books or of their competitors'. Even if they knew them, it might not be of use to them considering that each book is original—an innovation in itself. In terms of innovation, Henry Ford's quote is often cited: "If I had asked people what they wanted, they would have said faster horses." Steve Jobs referred to Ford's quote and notoriously never relied on market research. His bookish metaphor is reminiscent of what happens in publishing: "Our task is to read things that are not yet on the page."

Because publishing costs are relatively low (compared for instance with production costs for shows or movies), this is in the publishers' best interest to market enough references so that success might happen. In the free market of unregulated information, there is a trend towards information overload, a sense that relevant information is as hard to find as a needle in a haystack. There is also a risk that the Gresham law ("bad money takes the place of good money") tends to apply. For this liberal metaphors to apply one has to ponder whether the field of knowledge books is an unregulated market of substitutable commodities.

Knowledge books shall not be thought of as commodities because they are not bits of information of equivalent value. As artefacts, they are instead the fruits of a long and complex elaboration (e.g. years elapsed between the writing of the original thesis and the design of the book *BMG*) which requires both knowledge (content) and know how (form). If there is a risk of information overload of knowledge books, it would not be because they are quick or easy to create, but because they can be emulated (or plagiarised). This is why original design is a differentiating factor since appreciation is based on how "an object performs its function with excellence and style" (Forsey, 2013). Therefore, good knowledge books are easy to spot for the readers as they are standing out. They literally look *extraordinary*, in the sense given by Forsey that "some objects are better than the norm". Knowledge books are counterintuitive of conventional wisdom since they can (almost) be judged by their cover (and by a quick browse of their body). This is why, even though serendipity rules, publishers who can not afford to let success happen by pure chance (or, worse, not happen at all) make use of "paratext" ("epitext" and "peritext") to inform potential readers and—with digital—they are disseminating an increasing amount of metadata for users to recompose them on their own and according to their fields of interest.

2.2. Irrelevant and/or inaccurate data and possibly fake news

Even if a book found its way to a reader or if a reader found a book that might be of interest to him, how can he know that this book is for him? A book *for a reader* could be defined as a book that is both reliable and makes sense to this person. Because a book is an experience good, there is no absolute certainty *ex ante* that the experience of reading it will be enjoyable and/or useful. So, there is a level of cognitive uncertainty.

Since reading is understanding (see Chapter 8), the reading process is an affordance. In other words, in the field of knowledge publishing people read to know, and they understand better because they know. As Peirce explained, contrarily to Cartesianism, "we cannot begin with complete doubt". Some things can not be continuously questioned for it would be a useless waste of mental energy. This is also what Habermas expresses in his Theory of Communicative Action² which is based on the consensual precepts of "true", "right" and "truthfully expressed".

2 According to Habermas "communicative action is successful to the degree that agreement is cooperatively achieved and that individual plans of action are coordinated." There are three criteria in his Theory of Communicative Action: "1) a statement is true, i.e., it expresses what is the case in the world, and a directive is successful in bringing about a desired state of affairs; 2) a statement is right with respect to existing norms and the existing norms are legitimate with respect to values; and 3) subjected experiences, desires, and feelings

It means that the intersubjectivity of actors (authors, publishers and readers) must be geared towards an “orientation to reaching understanding” as a condition for an “orientation to success”. “The cognitive instrumental rationality of actors” can be construed as media literacy which enables people to recognise the minimal condition of “truthfully expressed” in order to enter constructive communication.

By and large, there are established procedures and habitus for credible and trustworthy knowledge production by researchers and experts. The filtering function of publishing is exercised by their own academic and/or professional communities through informed conversations (e.g. conference), validation of acquired experience and academic credits (certification and diploma) and peer assessment (peer review prior to publication and impact and reputation afterwards). The genre of knowledge books is also a warrant because it is at odds with fiction, opinions and controversies and excludes such genres as essays. This is not to say that knowledge books are paragon of undisputable truth. I am indeed aware of flaws to detect fake or biased publications, even in academic journals. Existing filtering can, and should, be overhauled, but well-enforced existing procedures (as they are in the vast majority of cases) are good enough.

2.3. Delinearisation of time

On the reception side, delinearisation is affecting all media. It is particularly obvious with TV which used to be available only as a flow at fixed times, then has been available as a continuous flow, and is now also available as a stock of programs. It is currently overwhelmingly consumed in this manner, especially by the younger generations. In addition, multitasking (e.g. posting on a social network while watching TV, listening to music while reading) has become ubiquitous. Nor are books immune to delinearisation. E-books read on a multipurpose screen are subject to drifting due to hypertext and architexts, and even p-books have been increasingly competing for attention with smartphones. So, readers are exposed to splintering of attention, and nonfiction even more than fiction with its immersive quality triggered by its potential to unleash the reader’s imagination. Nonfiction largely lacks this feature of stimulating imagination (a creative process to simulate alternate or different reality) because it is based on a reverse process of representing reality. So, readers need to be engaged otherwise.

Rhetoric storytelling seems to be one such way to engage the readers (it will be elaborated on further in this dissertation). Marion (1997) calls this rhetoric “the subtle art of mixing cognition and emotion, affect and information”*. This form of rhetoric (*inventio*—invention, *disposi-*

are truthfully expressed. The three-world concept forms a reference system for actors in social interactions.” There are two orientations expressing the *cognitive instrumental rationality* of actors in communicative action: an orientation to success—“actors are primarily interested in achieving a desired state of affairs”—, and an orientation to reaching understanding—“a communicatively reached agreement” (Cecez-Kecmanovic, Dubravka, et Marius Janson. 1999. “Communicative Action Theory: An Approach to Understanding the Application of Information Systems”. In 10th Australasian Conference on Information Systems). Pesqueux adds that the Theory of Communicative Action is based on “cognitive ethics” and its “intersubjective dimension of logic of ethics”* as an “horizon of reason” rather than a “pre-established rational universe” (Pesqueux, Yvon. 2015. “J. Habermas et l’Agir communicationnel”. *HAL SHS*).

tio—arrangement and *elocutio*—style) for “compliant readers” (e.g. learners) who need to be convinced to read is based on what Waller calls “*a linear model of written language in which a relatively discreet typography ‘scores’ or notates the reading process*”. Another kind of rhetoric (*memoria*—memory and *pronunciato*—delivery) for “self-directed readers” (e.g. subject experts who need all available information) is mnemonic. It is based on “a diagrammatic typography in which some concept relations are mapped”. These two kinds of rhetoric are not mutually exclusive and can be articulated together. They are presented as distinct for the sake of clarity. On the production side, social change has accelerated since the end of World War 2 with the increasing pressure of immediacy. It clashed with the more static social order of the technocratic division of labour developed since the 19th century³. For Media theorist Marshall McLuhan, this confrontation between *automation* and *mechanization* characterised the rise of the *electric age* and what has been called the “information society”. In a knowledge industry, productivity gains alone can not provide enough speed to overcome the limitations of a hierarchical linear system⁴ where bottlenecks are inbuilt. Therefore, the system itself needs to be redesigned to accommodate for “real-time” and “just-in-time”. Tasks have to be distributed in a more agile networked manner into which people need to be trained. Hence gone is the linear division of labour. To avoid the risk of its possible replacement by fragmentation and chaos, cooperation is needed to speed up the process and maintain the integrity of the system of knowledge production⁵. Back in 1991, Edgar Morin, in his 4th tome of *La Méthode*—“Les idées. Leur habitat, leur vie, leurs moeurs, leur organisation”—, regretted that “communication between reflection and knowledge is broken”^{*} and observed “a rupture between our knowledge and our lives”^{*}. Digital media, and particularly social networks and search engines, have, according to Media expert Bruno Patino in his 2019 essay *La civilisation du poisson rouge*, exposed people to widespread *emotional triggering* through the *brain hacking* of their algorithms and of their graphic design (the so-called “dark design”).

Especially for knowledge books, “readers don’t want bells and whistles but a good story, well told, with no distraction” (Bhaskar, 2013). So, there is a complex issue of devising attractive knowledge design by which books can neither afford to be dull nor can knowledge be dumbed down or reflection be distracted by emotional triggering. Instead, knowledge design should help readers to navigate knowledge books smartly. This is the purpose of rhetoric—of which

3 “The standardized form of most published material can reasonably be linked to the Fordist tendencies of the publishing industry’s typical workflow. [A book producer] is a kind of old-world craftsmanship in conglomerationland [...] operating like a theatrical or cinematographic producer.” (Michaels in Schnapp & Michaels, 2013)

4 “The old, linear publishing model is now outmoded in an environment where authors can talk to each other, readers can join together in communities, and authors can talk direct to their readership and receive feedback on their work. Social media tools enable low-cost interactions [...] the issue for publishers is whether they are part of the communities which develop, in a network model, or will simply become bypassed.” (Phillips, 2014)

5 For professor of Design Management Brigitte Borja de Mozota and Design consultant Steinar Valade-Amland the design process is an iterative process “allowing for the paradoxical coexistence of chaos and structure, and also fragmenting traditional hierarchical patterns” (2019).

different blends will be exposed in the cases (design thinking, storytelling, visual thinking, comics thinking).

In a nutshell, delinearisation, or competition for attention between the media, is both a threat and an opportunity. It is a threat because people who seek knowledge may be tempted to go on the Internet in order to find it. Cognitivists like Baccino and Draï-Zerbib have shown that this is a good strategy for people who are domain experts (i.e. they already know what to look for, where to look for it and how to efficiently perform a search). But for naive or non-experts who are the intended readers of knowledge books this strategy lacks efficiency. People will often get distracted, quickly overwhelmed and eventually lost. In other words, they need to be taught; i.e. walked through a domain of knowledge and led by a helping hand. Their attention needs to be stimulated, but they should avoid distraction. Hence a transmedia strategy can be stimulating but multitasking on more than one medium at the same time is misleading and counter-effective. Instead, cases studied in this dissertation showed examples of knowledge books with superimposed layers of information or graphically augmented reality which make sense.

3. A model for knowledge design of knowledge books

To the best of my knowledge, a specific representation of knowledge design projects was missing. The KDT has been designed to embrace the complexity of the publishing process and the complexity of the book artefact.

My aim, within the framework of the KDT, is to design a model that allows the stakeholders (authors, editors, publishers, designers, readers) to discuss and assess their projects *ex ante*, and also to analyse them *ex post*. It is a complex endeavour to design such a model. Therefore, expertise on complexity must be mobilised. Morin has been working on complexity⁶ for over forty years and has etymologically defined it as *complexus* (“that which is woven together”) i.e. a fabric of heterogeneous constituents inseparably combined. In his “Compositionist Manifesto”, Latour (2010) expressed a similar idea that “things have to be put together (Latin *componere*) while retaining their heterogeneity”. So, because complex thinking and modelling need to be interwoven, it seems only logical to call the result a canvas model. In addition to what it is made of, a canvas conveys a sense of what it is made for. It is designed for visual composition (“cloth used as a surface for painting”) and to express things starting from a blank sheet. In addition, both canvas and complexity are based on an underlying concept of “weaving”; i.e. a canvas is defined as “a firm closely woven cloth”. Weaving is synonymous with interaction and interdiscipline and ICS are “indeed complex and interdisciplinary sciences”^{*} according to Wolton (2015). He elaborates that the field of Communication “is not the result of an ‘evolution’ in the midst of known disciplines, but it comes as the result of an ongoing interaction between the three human, social, and technological dimensions”^{*}.

6 A composition with an intent is a definition of design which Morin conceived of as a complex *dessin* (“sketch”) and *dessein* (“purpose”). Jean-Louis Lemoigne also noted a semantic drift over time in Morin’s thinking about “complexity” as a concept towards “complex thought” as a process. We will follow this pattern from thinking about design towards design thinking.

My approach is more pragmatic than theoretical, and it is teleological rather than nomological. I intend to design a good-enough contextual model of knowledge design for knowledge books rather than to devise a rule-based theory. The aims are to design “a tool to make people collaborate better” and to let them apply design thinking (see Table 6), rather than the most ambitious objective to contribute to the field of Design research known as “designerly thinking” (that aims to describe what happens in the black box of the designers’ mind). In a similar manner, this dissertation is in ICS and Semiotics, and not in Cognitive science or Psychology, for I intend to analyse information and communication processes and artefacts and not how they are created and interpreted. I draw on cognitive approaches described by Cognitivists and practices and mindsets studied by Behavioural Psychologists but have no pretence to contribute to those fields of knowledge.

Table 6. Different conceptions of design thinking in the management discourse

Practices	Cognitive Approaches	Mindsets
Refers to concrete activities, ways of working and the use of specific tools: - Visualizing - Thinking by doing—e.g. prototyping - Human centered approach—putting people first - Collaborative work-style - Combination of divergent and convergent approaches	Refers to mentality, cognitive processes and thinking style: - Abductive reasoning—“the logic of what might be” - Reflective reframing - Holistic view—360° understanding of the problem - Integrative thinking—bringing competing constraints into harmonious balance	Refers to mental orientations towards the work: - Experimental and explorative—willingness to risk failure - Ambiguity tolerant—acceptance of a “liquid and open” problem-solving process - Optimistic—unwillingness to give in to constraints and obstacles

Source: Hassi & Laakso (2011) in Schmiedgen (ed, 2015, What is “Design Thinking”?, ThisIsDesignThinking.net, [consulted online 17th July 2017]

3.1. What is a model?

For Bachelard (1979)⁷, a model “*represents not all the properties of the real, but only certain properties*” [italics added]. In the scientific context, the concept of model⁸ refers to two functions: *representation* (of something), and *reduction* (to the relevant properties, the rest is ignored). In the field of the “sciences of the artificial”, Simon explained that there is a trade-off between a method to find satisfactory solutions “not optima” in a “nearly-realistic model” which he referred to as Artificial Intelligence (AI), and another about “optimizing in a greatly simplified model” which he referred to as Operational Research (OR). In other words, on one

7 Bachelard, S. 1979, “Quelques aspects historiques des notions de modèle et de justification de modèles” in P. Delattre & M. Theller (eds) *Élaboration et justification des modèles*, Maloine, Paris, France.

8 Kant explained that a model is subjective. In the field of art, a model “works like nature” to create free beauty and these works of creative geniuses become exemplary. They shall be contemplated and copied. Instead understanding scientific works imply learning rules (nomology) and applying these rules to model reality.

hand an objective of “good enough” is more lucid than one of “optimal”, and on the other models should be thought of in terms of systems rather than of objects (which implies a dialogic process of interrelations between objects within a given system). As a result, for Lemoigne systemic modelling (contrarily to analytic modelling) is not objective, it is instead projective by design; i.e. goal oriented. This is congruent with Cognitive Psychologist Willemien Visser’s view that designing can be considered as “a construction of representations” (2006).

A KNOWLEDGE MODEL? There is a consensus in the literature that designing can be modelled as a heuristic process that involves exploration and learning (see Figure 63). Professor of Design Science John Gero proposes a model which is a *representation* (in his 1990 article, he refers to it as a “knowledge representation” and a “representation framework”) that he calls a *prototype*. His “prototype-instance” can be described as a transformative and iterative throughput that works in a loop of setting *functions* and *structuring* a prototype—that compares actual versus expected *behaviours*. The model output, at the outer right-end side of the loop, a *design description* can be classified into the three instances of “routine” (refinement), “innovative” (refinement with an adaptation of variable values) and “creative”. The instance of creativity can be either incremental (i.e. “adaptative” with the introduction of new variables for design prototype generation), or—rarely—radical (i.e. the generation of a prototype without precedent).



Figure 63. A model of design as a process, Fig. 2 in Gero, 1990

“Knowledge engineering”* (*ingénierie des connaissances*) developed by professor of Information Engineering Bruno Bachimont (2004) is both “modelling”* (in the traditional nomological sense) and “an interpretation”* (in the semiotic and critic senses). The two types of knowledge engineering models are similar with the two spheres of the Design Theory (Λ and Ω): “reasoning models”* (similar with prescriptive knowledge Λ) and “domain models”* (similar with descriptive knowledge Ω). Abstract and generalist *reasoning models* are designed to identify problems (processes). In *domain models*, context-relevant objects and concepts are formalised

to perform tasks in order to solve issues. The model of knowledge engineering is not a theory but an idiographic tool based on “the reproduction of the user’s cognitive functioning”*. This contextual tool does not manipulate absolute knowledge but is situated in the fields of the cultural and historical sciences (what Simon would have called the sciences of the artificial).

A parallel can be drawn between Bachimont’s knowledge engineering modelling of domain-related knowledge (in order to operationalise them in a task-related system) and Waller’s model of communication⁹. The “documentary paradigm”* has similarities with the concept of *genre* in that it is “a system of documentary sources”* (*topic structure*—data structure) to “instrument a given use [with] a layer of content formalisation”* (*access structure*—interface) through “grammatically structured formal tags”* (*artefact structure*). This parallel runs deeper with a reference to “the form and content separation”* advocated by Bachimont & Crozat (2014). They compare “the graphic *domestication* of the artefact”* with “the computational *domestication* of the digital”* [italics added to highlight the reference to Goody’s *The Domestication of the Savage Mind*]. They hint at a separation of form and content which implies a desirable task segregation between the author who produces the content (who generally lacks formatting skills) and the editor who domesticates it (Bachimont & Crozat explicitly refer to the case of book publishing) for the benefit of the reader (“objectification”* and “appropriation”* of content).

WHAT PUBLISHING MODEL(S)? Book people and researchers in publishing studies have also been interested by models and there is an ongoing discussion on this matter. For example, Darnton proposed a general model for books (see Figure 47); i.e. a “communications circuit” (2009). Thompson explained that there are two basic approaches of publishing: the “centralized model” and the “federal model” (2010). He wrote that each approach “highlights some features at the expense of others”; i.e. they are *reductions*. Bhaksar (2013) argued that “there likely isn’t one model at work but complex compounds of different models”. This is indeed a fundamental aspect of models that they have no pretence to exclusivity and “may coexist with competing models”¹⁰. For Bhaskar publishing is a “content machine” and for Bomsel there are editorial protocols (see Table 4). So he logically considers that it is of the utmost importance to understand how content is framed (packaged for distribution and presented to an audience) because publishing occurs “*through frames according to models*” and conversely “the models craft the frame”; i.e. publishing models are “motivations as well as explanations”. In other words, these models are performative and analytical.

3.2. The PMC is not only a business model

One of the consequences of publishers no longer being gentlemen but having become “merchants of culture” (Thompson, 2010) is that their “obvious model is the business model” (Bhaksar, 2013). Business models are still different according to the types of publishing organisa-

9 For Waller, in computer jargon, topic structure corresponds to *data structure* and access structure to the *interface*.

10 *Le Trésor, dictionnaire des sciences*, Michel Serres & Naida Farouki (eds), Flammarion, Paris, France.

tions. On one hand, in the specific field of trade publishing old-school publishers complained that *equalisation* became impossible. Instead, the owners of publishing houses had increasingly “rationalized their activities” and each book is expected to make “a sufficient contribution to both overhead and to profit” (Schiffrin, 2001). On the other hand, scholarly publishing houses such as Pearson and Wiley and presses like Oxford and Cambridge have been profitable largely thanks to a diversified, market-oriented corporate structure. But it did not stop the so-called rationalisation that has been pursued through *procedural formalities* which many editors and publishers have resisted (more or less passively). For example, the Profit & Loss account by book (P&L) was considered by some as “a kind of corporate fabrication” (Thompson, 2010) and editors have adapted by making up numbers to reflect what they want to do.

Comics artist Scott McCloud presented a simplified version of how the American comic book market was structured in *Reinventing Comics* (2000) (see Figure 64). For him, if the artist wants to go beyond a one-to-one direct system between himself and the author, he has to compromise in at least two ways: technological (the adaptations of the work to fit the technology of reproduction) and creative (changes expected or required by the publisher according to the feedbacks from distribution and retail). The problem is that this market is imbalanced as “money is the driving force” over “creative energy”. The consequence for the readers is a narrowing down of the “range of styles, subject matter and themes” that are proposed, and the consequence for the authors is “the breakdown of the creative process into its assembly line parts” with separate “writers, pencillers, inkers, colorists and letterers”. A consequence of this system is to hinder innovation.

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Figure 64. The business value chain of comics, p. 71 in McCloud, 2000

But innovation does not have to be limited due to complexity. On the contrary, a model based on the Knowledge Design Theory could foster innovation at three levels:

- At the first individual level, author-designers could engage in a reflexive review of the fundamentals of their project. If designer-authors do not work solo, it can also help them to project how they view their relationships and share it with other stakeholders;
- At the second level, the author-designers and the editors-designers could be encouraged to reach desirable compromises, or at least acceptable ones, between: 1. typographic desirability, i.e. taking human values into account in order to design a book for users; 2. feasibility achieved by mobilising available technologies of the intellect in order to produce an ergonomic artefact; 3. sustainability of the publishing business;
- At the higher organisational level, negotiations should be objectified between the publisher-designer and, on one side, the author-designers and the editor-designers and, on the other, the organisation to which it belongs or reports (i.e. the publishing house or the publishing group). Communication is a two-way negotiation between them. On one

hand the communication is bottom-up (from the editor-designer to the publisher-designer) to show how the team's contribution adds to the common good, on the other hand the communication is top-down (from the publisher-designer to the editor-designers) to explain how strategic decisions make sense at the operational level of each project.

Chapter 13.

The scope of the PMC

The PMC is designed to spur publishing innovation of knowledge books. It is an output of the KDT and it draws on models and concepts of Design, of Communication, and of Semiotics. Knowledge books are designed for non-specialists and this research is situated in the overcrowded media environment of the mature markets where they unfold. So, they can not afford to look dull and their transmedia, mediagenic and visual features are emphasised. For client-readers, it is also easier to refer to types of knowledge books as genres or one-off prototypes and encourage their feedbacks based on these concepts. In the literature on innovation, there is a consensus that users can not be asked what they want (because they are unable to formulate it) but they should be presented with innovating concepts which are the results of informed discussions between design-minded stakeholders (author-designers, editor-designers and publisher-designers in this case). There should also be leeway for skilled professionals and talented authors to exercise their talent and remain creative and innovative in order to avoid undesirable stereotyping.

1. The three design principles of the PMC

The PMC is an interdisciplinary model designed to innovate in publishing. It is based on models and methodologies developed in Design, ICS, and Semiotics.

Waller's Model of Communication and the concept of relationship design developed by Zacklad are used to redesign the traditional publishing models and transform it (from a linear chain) into an iterative feedback loop. This loop can accommodate the book itself and other media elements. It allows feedbacks from the client-readers and the possibility of transmedia storytelling. In a phygital environment, transmedia is a way to enhance the exposure of a book, and possibly its circulation, by taking advantage of the mediageny of the different media, digital or not.

Because knowledge books are designed for non-specialists to encourage them to comprehend new things and acquire original knowledge, it is important that they are designed visual in order to be more accessible. Comprehending is a cognitive process and cognition is at the heart of Semiotics. The explanatory and analytic potential of Semiotics is mobilised to identify tools and methodologies that have helped to compose the PMC.

1.1. A Design and Communication model

A performative tool for innovation could increase its worth by also serving as an analytical instrument. Design is about conception of both form and function, and their harmonious interaction. A model is defined as both a representation and a reduction. In this perspective, the modelling feature of representation could be paired with form, and the modelling feature of reduction paired with function.

How have models of design gradually evolved from the 1960s (for more details, see the literature review about design thinking earlier in this thesis)? A simplified four-step summary will be

considered. In the 60s and 70s the design process was initially represented as top-down hierarchical flow charts. A second step, over the next two decades or so, showed linear step-by-step approaches, less deterministic and more generative. A third period started in the 2000s with iterative loops (back and forth dialectic process) and the use of icons. Fourthly, a shift occurred in the 2000s in California with dual representations of the design objectives on one hand, and representations of the design process on the other. Relational Venn diagrams were designed to model the “playing field” of design and to metaphorically map objectives as spaces. In parallel, divergent/convergent diagrammatic models of the design process were designed (e.g. Double Diamond) which metaphorically map the process as a journey. These two models complement each other, the first being spatial and the second representing a timeline.

A proposed design framework was inspired by Manuel Zacklad’s article “Towards a radical interdisciplinary theory of design” (2017) and his view that design science is an “object-focused inter-discipline” of the same order as ICS. *Concept design* is described as “concept-production practices prefiguring the artefact¹¹ to be designed” while *relationship design* is the analysis of how the actors engage in the creative endeavour of “idea-generation and sketches”. The core competency of the designers being to “achieve a synthesis [...] of symmetrical importance of the user and of the object” by means of models. This symmetry is represented horizontally in Table 7 between the *artefact* (how designers think about what they do) on one hand and the *users* (how users perceive what designers do) on the other hand.

Table 7. Typology of upstream design, Zacklad, 2017

	Designers' activity		
	Concept design		Relationship design
How designers think to do what they do (the artefact)	Formal design	Functional design	Design thinking (maieutic design and co-design)
How users perceive what designers do (the users)	Symbolic design	User interface (UI)	Rhetoric design, user experience (UX)

In Zacklad’s typology, concept design is a problem-finding methodology “prefiguring the artefact” (i.e. generating immaterial concepts for discussion), and relationship design is about problem-solving (i.e. designing prototypes for testing and, eventually, possibly an artefact as a solution). Thus, an innovation model for publishing book-artefacts can be based on relationship design. This model also translates on the Design Ladder as moving up from “design as styling” (step 2) to “design as process” (step 3).

¹¹ An artefact is a “designed object”, i.e. an object, a service, a human-machine interface or a scenario, an object resulting from a “human deed” (ibid.).

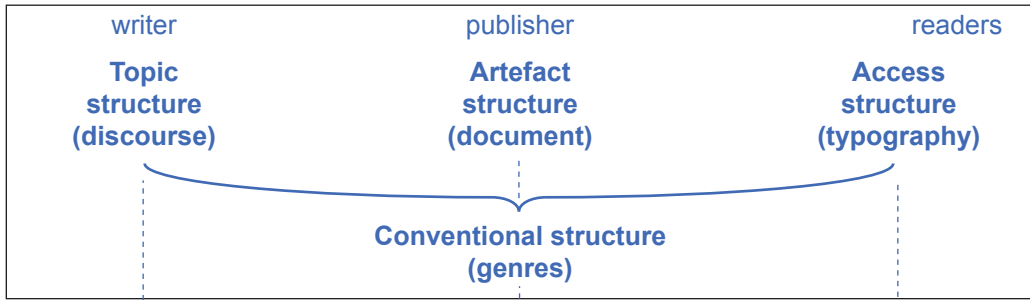
Waller's communication model¹² and the "traditional" publishing theory (e.g. Bhaskar, Bomsel and Phillips) share striking similarities with Zacklad's concept of relationship design. When displayed in parallel (see Figure 65), the intermediaries and mediators overlap and are almost substitutable or interchangeable. The first (from the left) intermediary "the topic structure"—the discourse—is a book concept (i.e. a synopsis). In other words, in a non publishing-specific design perspective, it is simply a concept based on ideas and sketches. It is created by mediators who might be called writers, authors, and or designers (i.e. author-designers in the KDT). The second intermediary is "the artefact" (i.e. the book in the publishing context) that is co-created by the authors (mediators) with the editor-designers. The third intermediary is "the access structure", formalised by typography, and which conditions the UX of the reading experience. The publisher-designer's role is to manage the combination of the three structures (i.e. a fourth "super"-category that Waller calls "the conventional structure"). The conventional structure is a "definition of typographic genres" as ideal types. The relationship between genres on one side and, on the other, of the combination of the discourse and the typography materialised by the artefact is iterative. Genre is the result of the combination of the three infra-structures, and conversely the artefact materialising the discourse and the typography is defined by the super-structure of the genre.

In the PMC, as in the KDT, the reader-users are not considered as mere receivers (as in the sender-receiver Shannon-Weaver's Model of Communication) or intermediaries (as per its meaning in the ANT), but rather as active stakeholders (i.e. mediators in the ANT). They are mediators because they participate in the mediation of the artefact (the success of a book is also, and perhaps mostly for knowledge books) as prescription, especially by word-of-mouth, is a major contribution to the success (or not) of a book. Hence, the transmedia elements proposed to the reader-users and the feedback loop from them to the creators and designers of the book should be designed with a level of attention matching that of the knowledge design process of authoring, editing and publishing (see Figure 66).

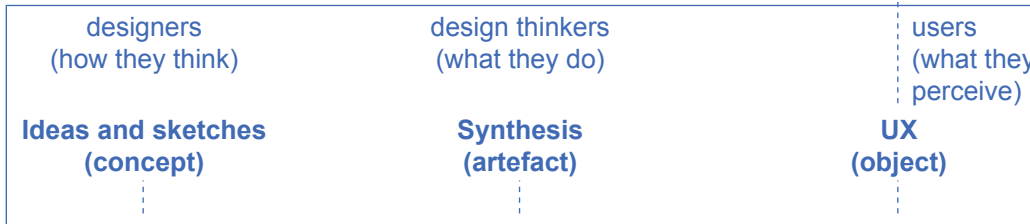
The Scope of the PMC in the KDT is encompassing to the two systems of the author-designer (see Figure 58) and of the editor-designer (Figure 60). As shown in the overall representation of the KDT (see Figure 57) both these two subsystems are enabled and amplified by the system of the publisher-designer (see Figure 61) which is somehow overhanging above the PMC (and corresponds to the ultimate fourth step of the Design Ladder: "design as strategy").

¹² Waller (1987) proposed an applied version of emergence relating to documents with his Model of Communication. This model is based on two structures (i.e. topic and access) which are hinging over a third structure (i.e. artefact). "The topic structure" is the writer's discourse. His "ideal" language would directly map "reality" (e.g. spatial metaphor, use of space)—to compensate for the linearity of language. "The access structure" represents the features that make the document usable by readers; i.e. typography (e.g. navigational aids, signposts)—to clarify the status of its components. The writer's discourse and the typography are overlaid in the same document with a third structure; i.e. "the artefact structure".

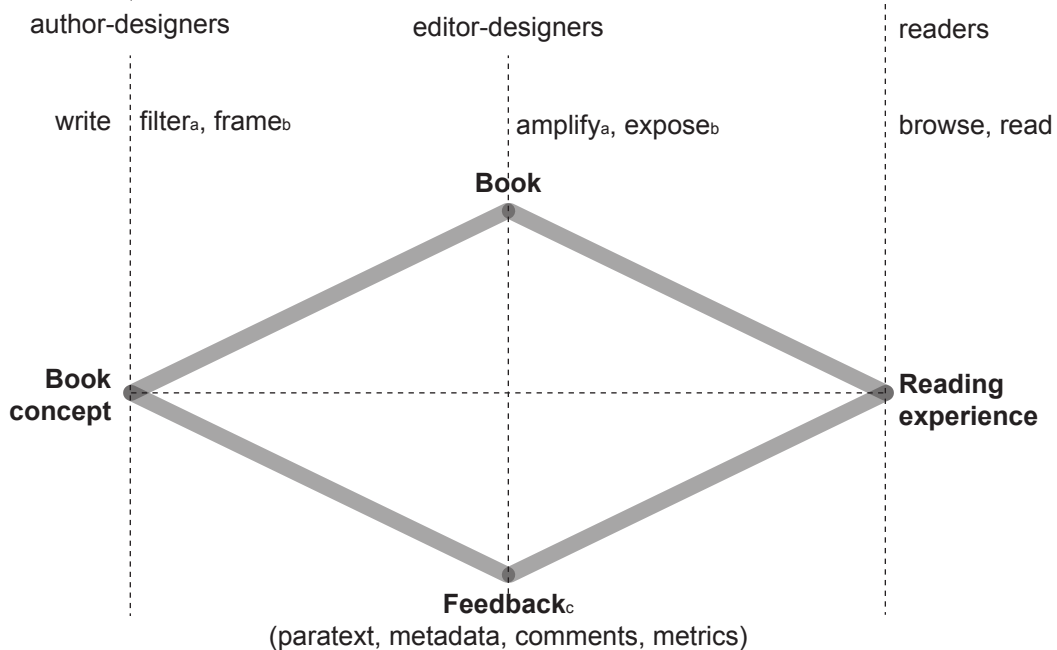
Waller's Model of Communication (1987)



Relationship design (Zacklad, 2017)



Scope of the Publishing Model Canvas



- (a) Bhaskar (*The Content Machine*, 2013)
- (b) Bomsel (*Publishing protocols*, 2013)
- (c) Phillips (*Turning the Page*, 2014)

Figure 65. The scope of the Publishing Model Canvas, CC BY-NC 4.0

Overall, the publishing industry has adapted to a fast-changing environment deeply affected by the digital revolution in two phases. These two steps are cross-publishing and transmedia publishing. Digital publishing 1.0—cross-publishing—was a defensive technological measure to rationalise production and be able to deliver different formats economically according to con-

sumers demand. Digital publishing 2.0—transmedia—is a more strategic endeavour to embed books into the global online digital environment of editorialisation. For Marion (1997), a media discourse must be deployed over different media in order to reach its full *transmedia potential* of ideas and forms. In other words, books can not afford not to be on the Web but they have to find their place along with the other media according to their own “mediageny” (Marion, 1997). Books, in their electronic or printed materiality, are not immaterial artefacts. And the issue of material artefacts blending with the Web relates to the wider-encompassing creation and development of the Internet of Things (IoT)—it can be addressed as the more specific issue of phygitality for p-books. It is less a question of forcefully digitising physical artefacts (which have proved their worth as such) than of creatively thinking about how to make the best of both physical and digital worlds.

In this sense, knowledge design as publishing 2.0 should be construed as transmedia and phygital (see Figure 66).

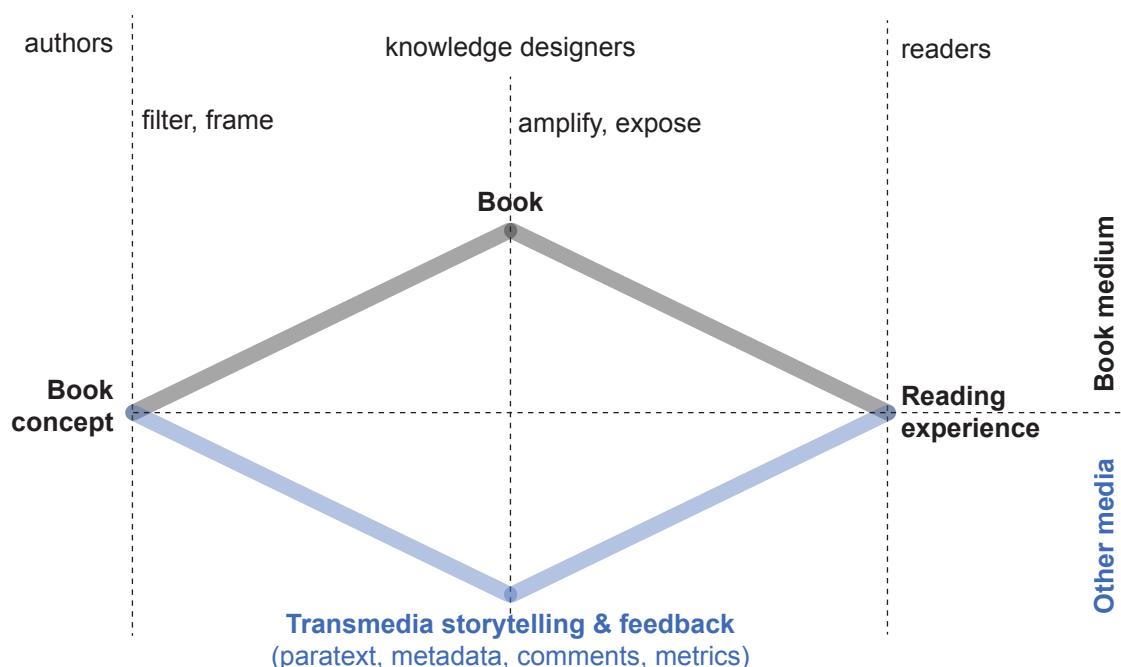


Figure 66. The transmedia context of the Publishing Model Canvas, CC BY-NC 4.0

1.2. A Semiotic visual model

Knowledge books should not only address the expert and the student or the pupil who has an obligation to learn but, amongst all, the general public who must be enticed to discover knowledge that is new to them. Therefore, the kind of knowledge these books convey must be designed to be accessible with as little prerequisite as possible. According to professor of Philosophy Gilbert Simondon, the encyclopedist Louis-Marie Daubenton considered that “image is by nature universal”* and does not require preliminary instructions to be understood: “it is sufficient to

perceive in order to understand the diagrammatic expression”*. So, he inferred that a technical encyclopedia¹³ could become really universal thanks to diagrams¹⁴.

In a way, this was also the sense of the 2016-2017 exhibition *Machines à dessiner* at the Musée des arts et métiers in Paris. The book—which is more than an exhibition catalog—designed, written and illustrated by comic artists François Schuiten and Benoît Peeters—hinges on the double meaning of “à” in French of “machines used for sketching” and of “sketching machines” (*dessin* “drawing”, and *dessein* “plan, purpose” are homophones in French) and contains two forms of drawings. First, there are technical rule-based “*observation* sketching”¹⁵ and photos (see Figure 68: Régnier’s dynamometer, drawn by Jean Blaise Maurice Dromard, c. 1798, Musée des arts et métiers, Paris, France, in Schuiten, François & Benoît Peeters. 2016. *Machines à dessiner*. Bruxelles: Casterman) of technical artefacts exhibited—where the model preexists the drawing—, and second of “*invention* drawings” (see Figure 67: Banner for the temporary exhibition “Machines à dessiner” on the website of the Musée des arts et métiers [www.arts-et-metiers.net/musee/machines-dessiner, viewed 4th September 2019]) on the other—where the model exists only in the mind—specially crafted by the two authors for the exhibition. The purpose of observation sketches is not to contemplate a work of art but instead to carefully study a model. For Schuiten “drawing a machine implies understanding it, grasping how it works”. These were the purpose of *democratising knowledge* endowed on the technical encyclopedia and of the combined engineering school and technology museum of the Conservatoire national des arts et métiers which were initiated in France in the late 18th century in the spirit of the *Lumières*.

13 *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, 1751-1772.

14 Diagram use “requires no special knowledge, and they often express the conditions of economic life more accurately, as well as more easily, than do mathematical symbols. [...] Diagrams automatically support a large number of perceptual inferences, which are extremely easy for humans.” (Larkin & Simon, “Why a Diagram is (Sometimes) Worth Ten Thousand Words”, 1987)

15 The office of draftsmen (*bureau des dessinateurs*) was created at the inception of the Conservatoire national des arts et métiers in 1794 to “inventory inventions, store them and disseminate them using image”*. It was a place where technical drawing was improved and standardised by the implementation of the rules of descriptive geometry: “double orthogonal projection, careful composition of the views in the page, codified colouring: blue for steel, brown for wood, yellow for copper” (see Fig. 2 in Dubois, Éric, “Revoir le dessin”, in Schuiten, François, et Benoît Peeters. 2016. *Machines à dessiner*. Bruxelles: Casterman).

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<p>Figure 67. An example of invention drawing</p>	<p>Figure 68. An example of observation sketch</p>

For those who are not familiar with dynamometers (as is my case), it is easier to apprehend it through drawings of its function and of its structure (see Figure 69). But because people see in images, they can not *immediately*¹⁶ figure out the symbol of a dynamometer (what it is for and on what general principles it is based). In a literal way, comprehension lies beyond people’s field of view. Contemplating the extraordinary paradoxically overwhelms the mind; i.e. something new (on the other hand, what is familiar tends not to be noticed, it has become “infra-ordinary”¹⁷). In other words, comprehending with the brain is a three-step process of primarily apprehending with the eyes (more generally so with the senses). Then sight can be bypassed to form a vision. Both the purpose and inner workings of a dynamometer can be imagined (“faculty of the mind which forms and manipulates images”, etym. Latin from stem of *imitari* “to copy, imitate”). Its function can be apprehended and comprehended with the mind’s eye. In order to get generalised, things are imagined (thought in images), understood (a model of thought is built) and abstracted (etym. form of Latin *ab* “off, away from” + *trahere* “to draw”).

16 I refer to the two meanings of “immediate” from Latin etymology of *immediatus* “without anything between” (i.e. *in-* “not, opposite of” + *mediatus* “in the middle”) and “without loss or interval of time”.

17 For Souchier (2012), with the daily banality of what Perec called the “infra-ordinary”, ordinary facts and objects are fading into invisibility. They can not be invented or even less re-invented, but their *form* can be considered from a social and communicational perspective. As Merleau-Ponty had already noted “the meaning devours the signs”*.

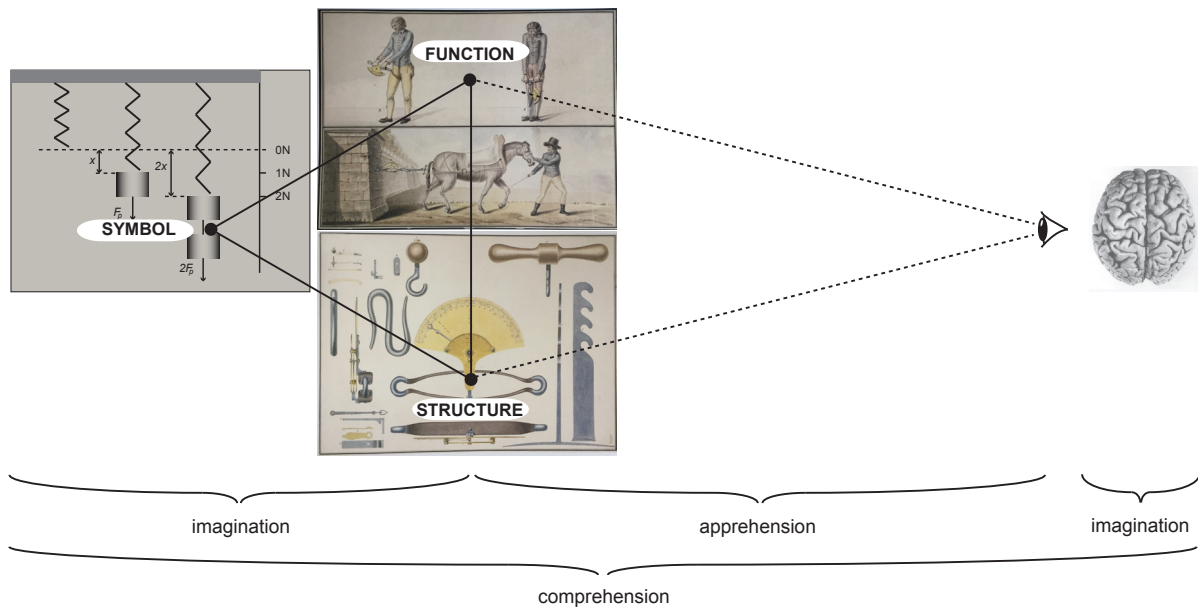


Figure 69. An example of apprehension and comprehension of a sign-object through imagination—Régnier's dynamometer, CC BY-NC 4.0

I took the example of the dynamometer because I had no prior knowledge of it. I was not even aware that such device existed. This is what an innovation looks like: something that one had no previous knowledge of, an extraordinary thing. From this perspective, the dynamometer was as innovative as any book that has not yet be read, written or published. The careful observation of its structure and of its function on one hand, and of the examination of its symbol (an abstraction represented by a diagram in this case) on the other, does not provide an expertise in dynamometer (it is not infra-ordinary) but an understanding of what it is (it found its place in the order of things). The careful reader who was not familiar with this device would probably have experienced a similar process of understanding (semiosis in Peircean terms). It can be inferred that this same process applies to novel things such as books (for each books is defined as an original prototype).

This model of understanding the symbol beyond (and through) the structure and/or the function is based on the model of the Peircean semiosis (see Figure 70). The semiosis can be more generally applied to the system of the sign (i.e. for the interpretant to perceive the object [semantic] by his(-her) perception of the sign [syntactic + pragmatic] through the material medium). The semiosis can also be more specifically applied to the subsystem of the sign-object (see Figure 74; i.e. for the interpretant to perceive the object [symbol] by his(-her) perception of the sign [structure + function] through the material medium). Semiotics consider systems of systems as *myths* (in systemic thinking they would be called complex systems of boxes-within-boxes). And it is very helpful for the purpose of this dissertation that analytic tools have been devised to analyse myths.

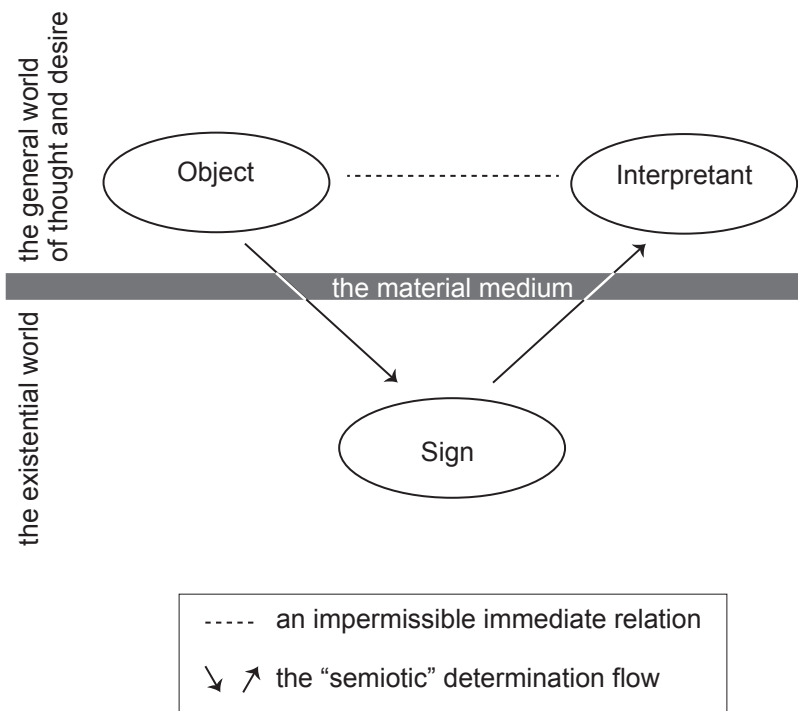


Figure 70. The Peircean semiosis commented, adapted from Fig. 1.1 in Jappy, 2013

I found six triadic models in the literature which apply to the same dimension (plane) of what Peirce and Borja de Mozota call the *object* (see Figure 71). In the context of knowledge design, the general term of artefact can be equated with what Waller, Bachimont and Salaün define as the *document*. These six models have been forged in the disciplinary fields of Semiotics, Design and ICS and apply to the same three categories of stakeholders: author-designers, editor-designers, and receivers-users-readers. Another important feature of these models is that they are dynamic and not linear (unlike value chains which are oriented from cause to consequence). Their flow (see Figure 70; i.e. the Peircean semiotic determination flow) is affecting and, in turn, is affected by each of the three structures or elements of these models.

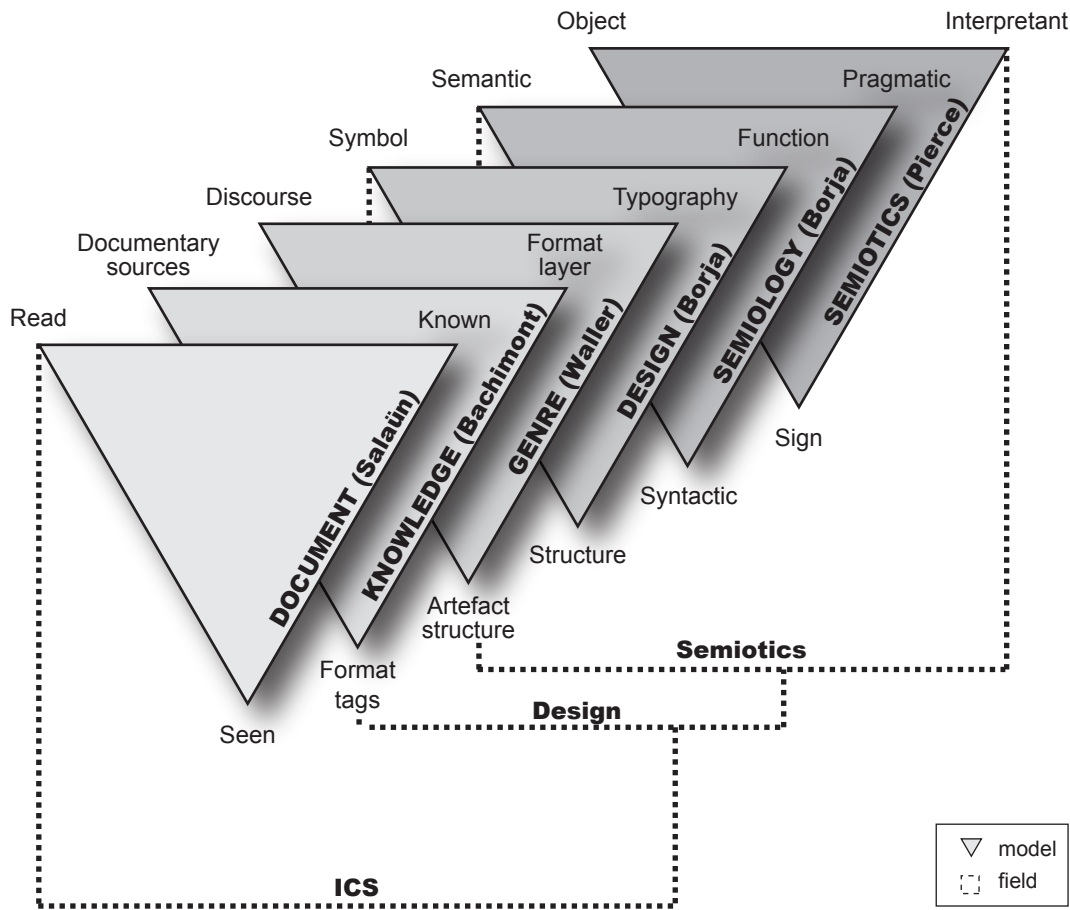


Figure 71. A series of six triadic models comparable with Peircean semiotics, CC BY-NC 4.0

“Semiotics has semioticed itself in schematic models and formal protocols” according to Berthelot-Guiet (2004 & 2015). Under the influence of Management science (i.e. applied Social psychology research in the field of Marketing), it has produced “semiotic toolboxes” or at least formal typologies and schematic graphic representations—such as the semiotic square and the narrative program—which can be presented to a client. I am no semiotician and do neither intend nor pretend to have the capacities to contribute to the field of Semiotics. But, as with Design, the model can draw on the established paradigms of Semiotics—for instance the myth—and use their conceptual tools to advance the understanding of innovation for knowledge design.

The PMC is a problem-solving model, it is not a method to find problems (general issues can be identified at the theoretical level of the KDT). In the knowledge design environment and within the context of the digital age, the three main problems of splintering of attention, cognitive overload, and cognitive uncertainty have been identified (see Chapter 14). Insights and theories have been reviewed and ordered to develop and deliver solutions to the above-defined problems. The core of this design thinking approach of knowledge books is mapped as a triangular zone (see Figure 72). Each side of this triangle is a typology of a myth of the PMC.

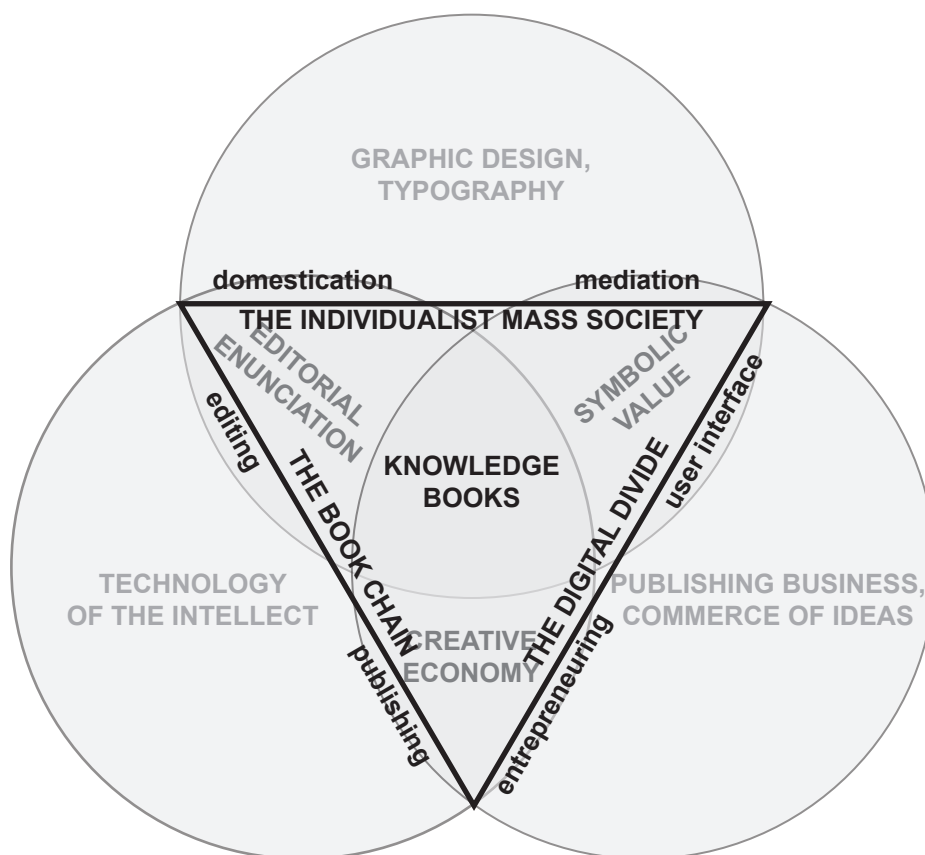


Figure 72. Mapping of knowledge design for knowledge books, CC BY-NC 4.0

The PMC expresses three typologies of myth:

1. *the book "chain"*¹⁸ or "editorial protocols" (editing and publishing) that provide for either compliant readers who are used to reading at length in the traditional book formats or self-directed readers who look for something in books and expect to find it easily;
2. *the digital divide* between digital literates and passive customers, by which some people are able to, and decide to, devote the time and effort to master the technology while others instead pay for a service;

18 As quoted by professors of ICS Bouquillion, Miège, & Moeglin (2013), better suited than the terms industry, branch or sector, "the value chain describes the full range of activities which are required to bring a product or service from its conception, through the different phases of production, delivery to final consumers, and final disposal after use. [...] There are ranges of activities within each link of the chain. Although often depicted as a vertical chain, intra-chain linkages are most often of a two-way nature—for example, specialised design agencies not only influence the nature of the production process and marketing, but are in turn influenced by the constraints in these downstream links in the chain." (in Bockel, L. & F. Tallec, 2005, "Commodity Chain Analysis. Constructing the Commodity Chain. Functional Analysis and Flow Charts" (initially translated into English by Anne M. Thomson, 1998 based on a translation from Pierre Fabre, 1994, "Note de méthodologie générale sur l'analyse de filière: Utilisation de l'analyse de filière pour l'analyse économique des politiques", *Training Materials for Agricultural Planning*, 35), EASYPol, Food and Agriculture Organization of the United Nations.

3. what Wolton (1990) calls “*the individualist mass society*”¹⁹ is the dichotomy between general passive reception of mass media versus the active specialised engagement in community media. Within the metalanguage of each of the three myths of the PMC, a semiotic square can be constructed and the relations of complementarity help and explain the articulation between first-order and second-order.

Table 8. The typologies of the PMC in the context of the Double Diamond

Problem		Problem solving		PMC
Discover	Define	Develop	Deliver	
2nd order of myth		1st order of myth		typology
Delinearisation of time	Splintering of attention	Rhetoric storytelling: access structure	Linear model of written language	The book chain
Information overload	Cognitive overload	Providing meaningful information: topic structure	Structured metadata	The digital divide
Irrelevant and/or inaccurate information	Cognitive uncertainty	Adding value through design: artefact structure	Orientation to reaching understanding	The individualist mass society

The famous semiological approach of the myth by Barthes (*Mythologies*, 1957) hinges on the articulation of a semiological system of first order—*object-language*—with a system of second order—*metalanguage*—which is “the myth itself”*. Barthes’ initial inception of the myth system was self admittedly based on Saussure’s work on the language (“a particular semiological system, but methodologically exemplary”). Barthes deployed the myth system far beyond language and applied it to a variety of topics (according to what was reported in the news between 1954 and 1956 and based on diverse access structures; e.g. newspaper articles, photographs, movies, shows, exhibitions). In order to deal with this huge variety of objects, he forged the concept of “object-language”* (“*langage-objet*”) for the first order of his myth system. By merging the language (as a system) and the system of objects together, he was thus able to extend the application of Saussurean semiotics to artefacts. As for the first order, the span of the second order of metalanguage encompassed all objects, linguistic or not. In the design of the Publishing Model Canvas, the Barthesian generalisation of the myth from the system of language to the system of artefacts was taken a step further. The system of objects needed to be better defined as a metasystem to analyse knowledge books (i.e. a system of systems):

- My first endeavour was to translate Saussure’s semiology—based upon a theory of language—into Peirce’s semiotics—which is based on logic and applies to all objects. For Jappy, it is precisely with Barthes’ work on myth and pictorial rhetoric that the

19 Marion (1994) reports that Wolton (1990) forged the concept of the “individualist mass society”* as a paradox (“an intractable conflict”*) between “the affirmation of the individuality and the extension of the socialisation”*.

translation of metalanguage (see Figure 73) to other systems of values “first gained credence”²⁰. This translation was possible because Saussure had acknowledged that the language (as a *system of values*) is “a system of equivalence between two things of different orders”*. From the first order of language signs become *signifiers* in the second. In turn, signifiers for Saussure (interpretants for Peirce) become *significations* (from meaning to form), and signifieds for Saussure (objects for Peirce) become *concepts*.

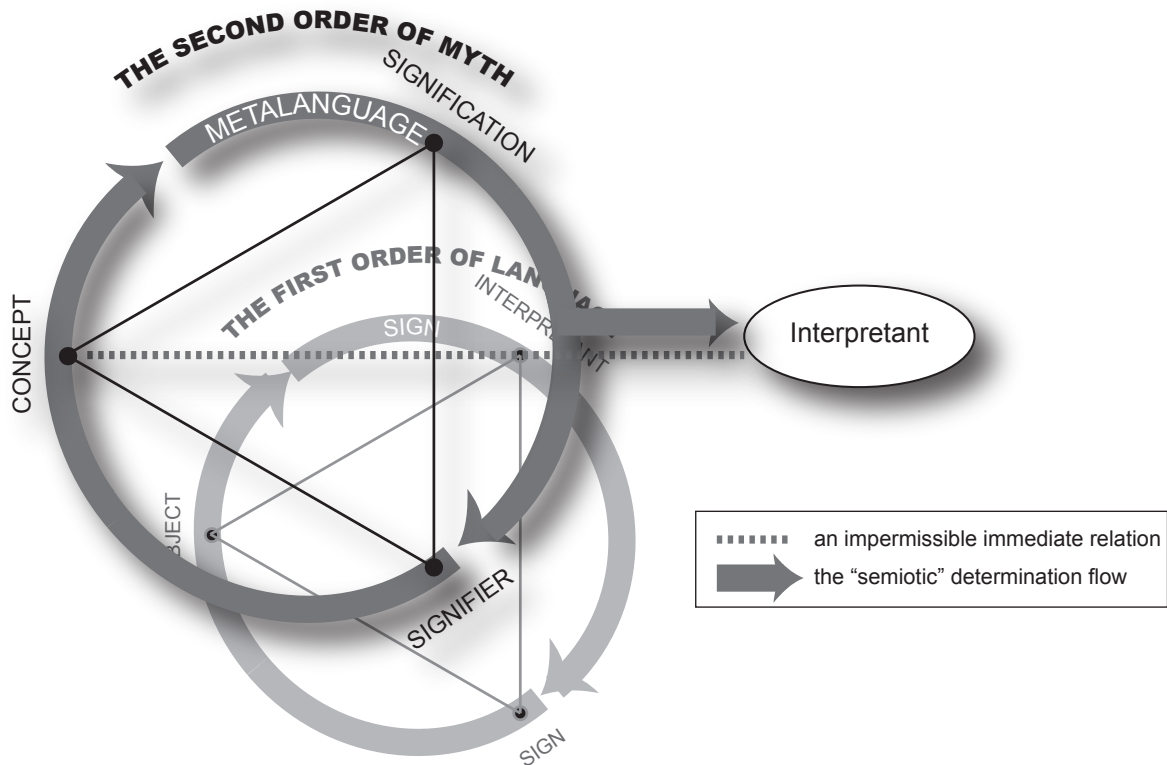


Figure 73. The second-order of myth, a metasystem of signs in the first-order of language, CC BY-NC 4.0

- The second step was to translate all the language-specific terms of the “metalanguage” system into a general context-agnostic metasystem. Semiotician Jean-Marie Floch (1995) presented the semiotic of objects that he developed as a “semio-narrative approach of design”* (based on the work of Greimas). It fitted the purpose of going beyond the functionalist approach and providing an analysis of the values of the artefact when “the object is the subject”*. This analytical framework is defined by the three dimensions of function²¹, myth and aesthetics (see Figure 74 in the first order of the sys-

20 Jappy (*Introduction to Peircean Visual Semiotics*, 2013) noted that there is something “ideologically unwholesome” and “vaguely deterministic” in the idea that there should be a pre-existent set of “interpretations” that points to Barthes’ fantasmatic project of a “massive inventory of connotation systems”* (1964, “Rhétorique de l’image”).

21 For Floch, the function of objects can not be considered as a semiotic issue. The issue is how objects communicate their own function. This communication is a hierarchy of three functional, mythical and aesthetic dimensions.

tem of objects; which then respectively become significations, concepts and signifiers in the second order of the metasytem of things.

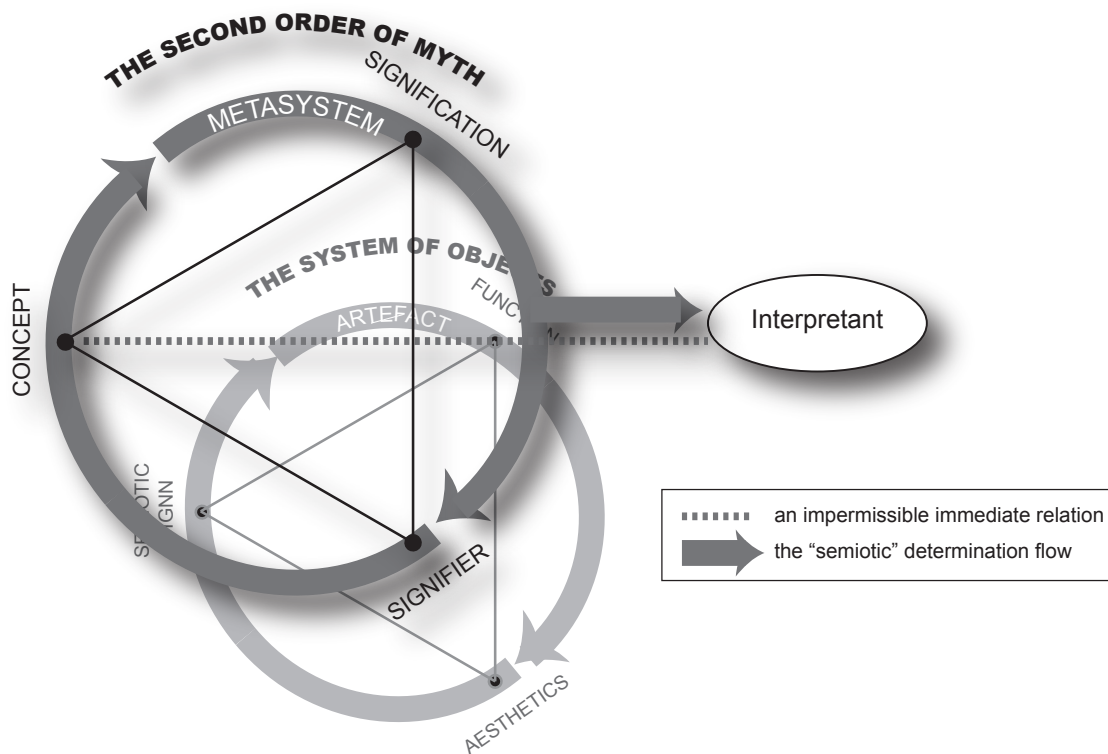


Figure 74. The second-order of myth, a metasytem of artefacts in the first-order of the system of objects (inspired by Floch), CC BY-NC 4.0

A myth is not an object, a concept or an idea, on the contrary it is a communication system and, as such, it applies to knowledge. For Barthes (*Mythologies*, 1957), the reader apprehends the myth in a dialogic manner as “a story at the same time true and unreal”*. But, because of its rhetorical impact, the effect of the myth is perceived as *immediate*²² and Barthes considered that the reader can “innocently consume the myth” as an *inductive system* (a “causal process”*). In the context of knowledge design, the myth may be better defined as the “semiologic lag”* (“*décalage sémiotique*”) which “assumes an indetermination of the meaning and the form”* (i.e. an editorial enunciation; Souchier, 1988):

a “secondary text” which *signifiant* (signifier) is not constituted by the words of the language, but by the materiality of the device and of the writing, its textual organisation and layout, in short by everything that is materialising its existence. This “signifier” constitutes and implements the existence of the “primary text”. The “primary text” is, strictly speaking, the author’s text [...] The function of the “secondary text” is to give the primary text” to read*

The semiotic square is a tool to devise and analyse the first order of objects (i.e. artefacts—knowledge books in this context) and its relationships with the second order of myths (e.g. the

²² McLuhan described this immediate perception as “the instant vision of a complex process that ordinarily extends over a long period”.

three main problems that have been identified for knowledge books). Floch (1990) described the semiotic square (which was developed by his former professor Algirdas Julien Greimas) as a “simple and economical model”* (see Figure 75). The two semiotic signs (S_1 and S_2) on the upper side of the square are placed on each side of a “semantic axis”* (an opposition of concepts) also called *relation of contrariety*²³ and are the “resulting terms”* of the model. The *relation of contradiction* is based on a “negation” (i.e. the bottom S_1 is “not” the top S_1) but—thanks to the “elasticity of discourse” and the “static and dynamic”* qualities of the square—their respective positions can move (both the relations of contrariety and of contradiction on which the semiotic square is structured can be seen as an application of the dialogic principle described by Morin as a feature of complexity).

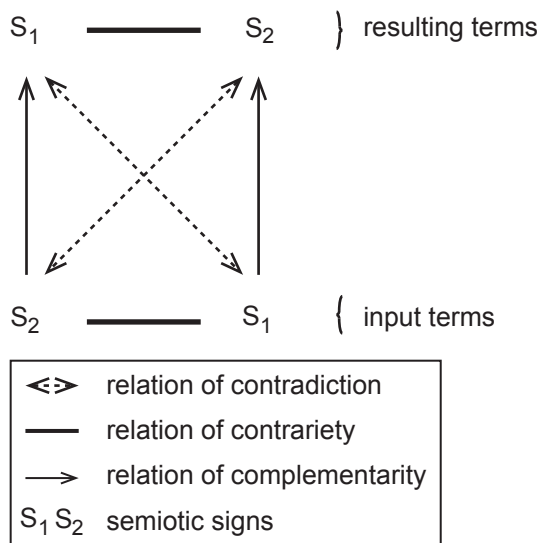


Figure 75. The Greimas square or Semiotic square

In the case of the knowledge design of a knowledge book, the materials of the semiotic square are the semiotic signs which are emitted by the author-designers (the bottom S_1 and S_2 —the input terms), and the semiotic signs which are perceived by the readers (the upper S_1 and S_2 —the resulting terms). This is a tenet of the communication theory that the bottom S are different from the upper S. In Peircean semiotic terms, it translates in the impossibility of immediate communication (because it is “an impermissible immediate relation”). Therefore, the semiosis is determined by a “semiotic flow” from a sign (intended by the author-designers)—through the aesthetic and the functional dimensions—to the interpretant (perceived by the readers in their own context). This semiosis can either be straightforward—“a relation of complementarity” in the semiotic square—or paradoxical (etym. Greek from *para-* “contrary to” + *doxa* “opinion” from *dokein* “to appear, seem, think”)—“a relation of contradiction” (see Figure 76).

23 The terms of the model are positioned on the square relatively to their “contextual value”; i.e. not “entries from the dictionary” (*lexemes*) but their contextual meaning (*sememes*).

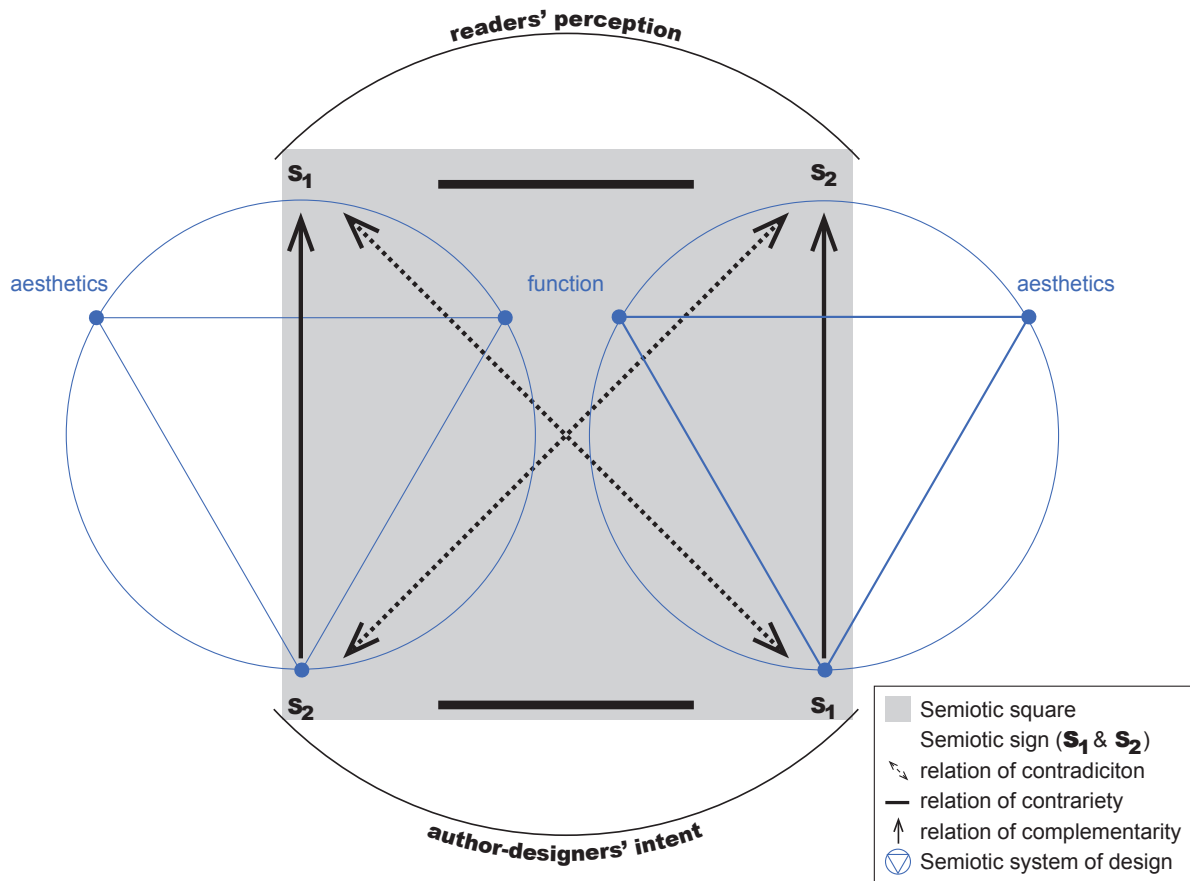


Figure 76. The first order of myth and the semiotic square, CC BY-NC 4.0

Semiotic signs emitted by the author-designers and perceived by the readers of knowledge books can be described as undecidable concepts (a n -place relation predicated of n arguments) or as logical knowledge (a true or a false proposition). Acknowledging this distinction between semiotic signs refers to the C-K Theory, and C-K is at the core of the Knowledge Design Theory. Hence, the relations of complementarity or of contradiction can be seen as operators in the KDT (see Figure 77):

- The bottom-up relations (from the input terms to the resulting terms) of complementarity S_1 - S_2 and S_2 - S_1 in the semiotic square are aligned $S_K \rightarrow S_K$ (S_K being a semiotic sign pertaining to knowledge) *deductions* in the Knowledge Design Theory;
- The bottom-up relations of contradiction S_1 - S_1 and S_2 - S_2 translate as misaligned $S_C \rightarrow S_K$ or $S_K \rightarrow S_C$ operators in the Knowledge Design Theory;
- The $S_C \rightarrow S_K$ operator from the unknown (concept) to the known (knowledge) means that the readers possess an empirical knowledge of something and need a knowledge book with a generalising approach in order to reflect upon it and possibly apply it more widely (e.g. self-taught typesetters who read about the typographic principles);
- The $S_K \rightarrow S_C$ operator from the known (knowledge) to the unknown (concept) means that the readers have a theoretical approach of a subject and seek to discover new things (e.g. design graduates who read commented printing fonts catalogues).

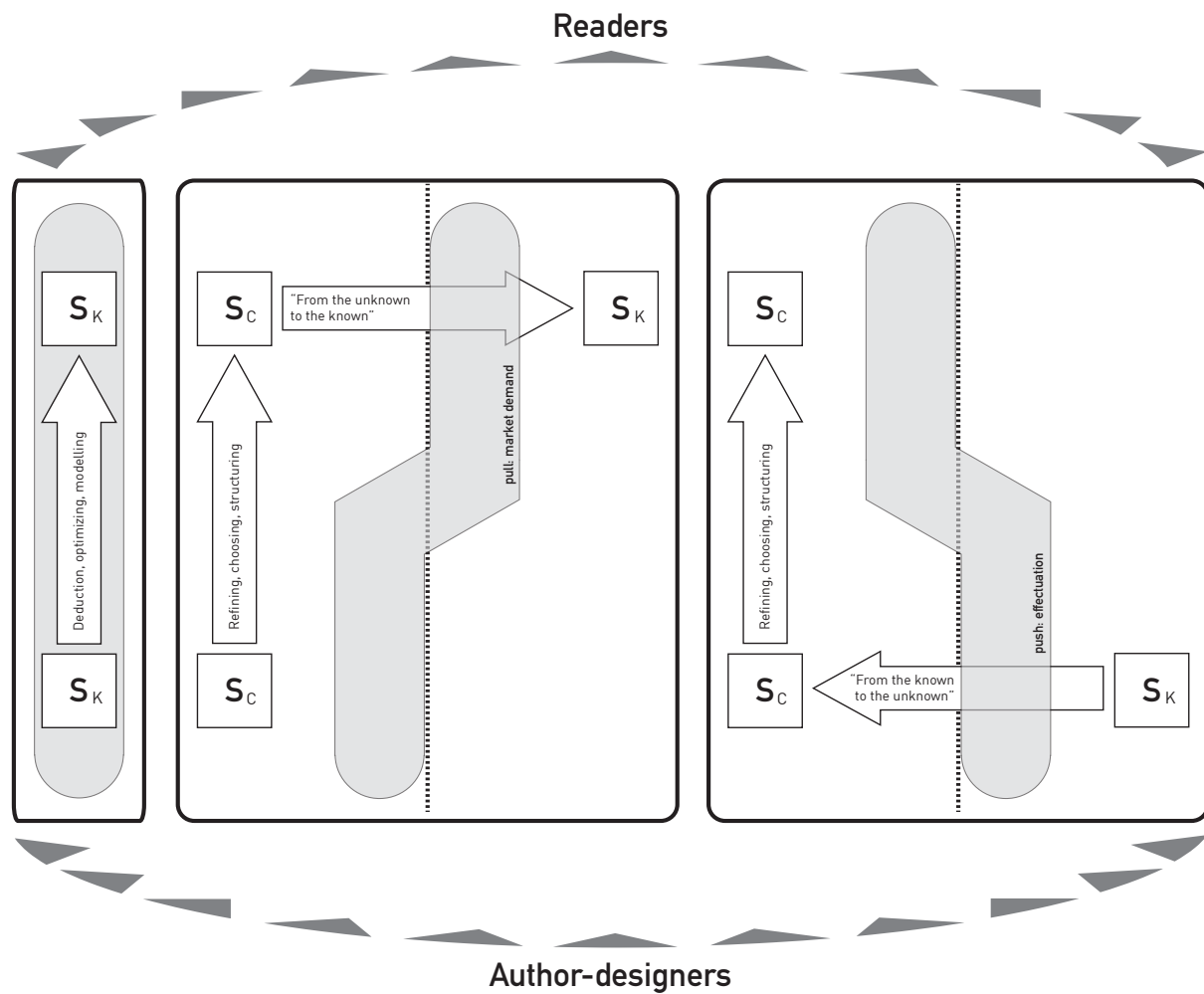


Figure 77. Aligned strategy and misaligned strategies in the overall context of the KDT, CC BY-NC 4.0

2. Integrating the PMC in the KDT

The process of designing knowledge books is described and analysed in the KDT. The PMC applies to knowledge books which could be described as a sector of the book publishing industry and a segment of the mature French, US and UK book markets. The contextual inputs of the PMC are derived from the field of expectations of the clients in these aforementioned markets and how the publishing stakeholders (i.e. the author-designers, the editor-designers and the publisher-designers) are organised to meet these expectations. Hence the three-pronged structure of the typologies of: 1. the book chain, 2. the digital divide, and 3. the individualist mass society. Each of those three typologies is subdivided into what could be referred to as two ideal-typic genres (equivalent to the semiotic signs S_1 and S_2). Genres are typographic conventions which features can be organised into the four categories of 1. *typical context of use* (e.g. books); 2. *typical format and configuration* (i.e. size, binding, paper quality, use of colour, etc.); 3. *typical treatment of verbal language* (composition, typographic style, etc.); 4. *typical treatment of visual elements* (i.e. proportion of visual to verbal language, etc.). In any context, genres are

stereotyped and it is important that they remain “fuzzy and tentative” to allow for change; i.e. adaptation and innovation.

2.1. The author-designers design artefacts for “the individualist mass society”

On the left side of Figure 78 (the vertical arrow grid → mass media) reader-consumers are represented who are impatient, over-solicited and should be stimulated to read a text. Waller takes the example of the use of irregular grids for tabloid newspapers interweaving editorial and advertising items in order to create “an impression of variety and compete for the attention of the browsing reader”. Mass media have to be easily discoverable, immediately understandable (“what you see is what you get”), engaging and readily available (“I want to buy now and in one click”). So, author-designers have to act fast to induce, or respond to, quick adoption (most books are quickly forgotten and do not get a second chance). A way to adapt fast while not changing the underlying structure is to use a grid. For Waller, grids solve the aesthetic problem of “imposing a visual unity on complex material” by following the modular principle. On the right-hand side (vertical arrow formal guidelines → community network) community media are rule-based and have to be simple and explicit for people who want to become members. Over time, the offer should be flexible enough to accommodate to the changing needs and desires of the community of author-designers so that members do not leave (or be expelled), thus the organisation has to adapt.

DOMESTICATION (see bottom of Figure 78)—on the side of the author-designers—refers to Goody’s description of the humanity’s intellectual “search for order”. This quest has revolved around two polarities. On the bottom left side of the “grid”, writing as one of the most potent technology of the intellect has proceeded to “the reduction of speech to graphic forms”. This use of signs still allows for a degree of “wildness”²⁴ or “disintellectualisation”²⁵. Although this degree of freedom is controlled by the use of a grid (implicit or explicit) that elicits a graphic order (I refer to the French translation of Goody’s book *The Domestication of the Savage Mind* as *La raison graphique*). On the bottom right side of the “formal guidelines”, there is a process of conceptualisation through classifying. Instead of using signs that appeal to perception and imagination, concepts are used that draw on abstract thought and intellectualisation. These formal guidelines provide for structuring the text (often omitting illustrations) rather than displaying an image of the text.

MEDIATION (see top of Figure 78)—on the side reader-clients—can be described as what Sociologist and Communication researcher Dominique Wolton (2015) calls an increasingly differentiated law of media supply with the multiplication of channels by which “the mass media is on

24 “Wildness” is referred to as per the dichotomy established by Lévi-Strauss between “wild” “*sauvage*”, and “domesticated” “*domestiqué*”.

25 For Barthes (1964) “the absence of code disintellectualises the message because it seems to ground the signs of culture in nature. This is undoubtedly a major historical paradox: the more the technology is developing the dissemination of information (especially images), the more it is supplying the means to hide the constructed sense below the appearance of the given meaning”*.

the side of society [see top left side of Figure 68], the Internet is on the side of communities”* [see top right side]. In ICS researcher Ghislaine Chartron’s socio-editorial model, the network is pervasive. New operating procedures are a “social network which organise the sharing [of knowledge and resources] and generates metrics”. The user “delegates to the network”* and “focuses on the value of the judgements of the members of the network”*.

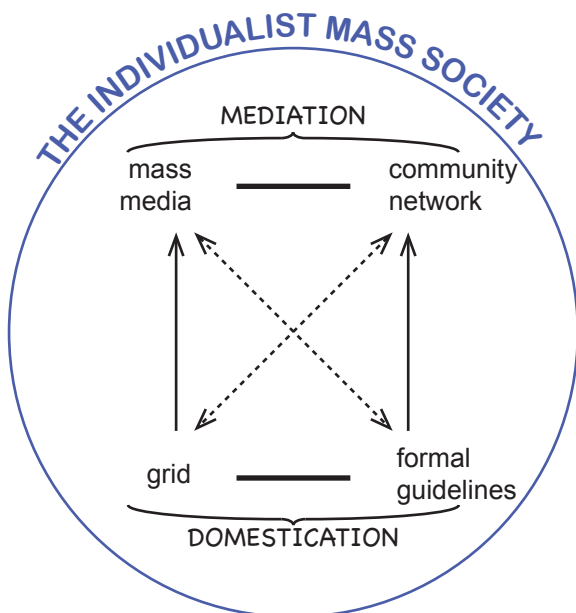


Figure 78. The myth and semiotic squares of the individualist mass society, CC BY-NC 4.0

2.2. The editor-designers design processes of “the book chain”

There are two different dynamics in book publishing. On the left side of Figure 79 (the vertical arrow customisation → ad hoc models) customisation represents a kind of sophistication (elaborate layouts, pop ups, integration of objects and print books...) to create unique models for amateurs, specialists and readers who need or enjoy elaborate layouts and illustrations. On the right-hand side (vertical arrow standardisation → dominant design) standardisation (collections, series, authors branding...) is sought in order to achieve dominant design for traditional readers.

EDITING (see bottom of Figure 79)—as knowledge design for editor-designers—is, according to Bomsel (2013), the responsibility of “accumulating and editing expressions”* for a “framework”* (a real or symbolical place) which is materialising an intended message for an audience and is establishing a genre, a format with a “prescribed use”*. In turn, “design is framed by the utensils it is contributing to edit”*;

PUBLISHING (see top of Figure 79)—on the side of reader-clients—is “exhibiting”* (“amplifying for Bhaskar) through “a media strategy [which] becomes a contextual asset which authors and editors benefit from”* and for which the publisher is always and ultimately responsible according to Bomsel. Exhibiting is “materialising the economic performance of the editorial pro-

cess”. Thus publishing is reader-focused and framed by teleological “editorial protocols”²⁶ from authors to readers with author-designers and editor-designers acting as mediators.

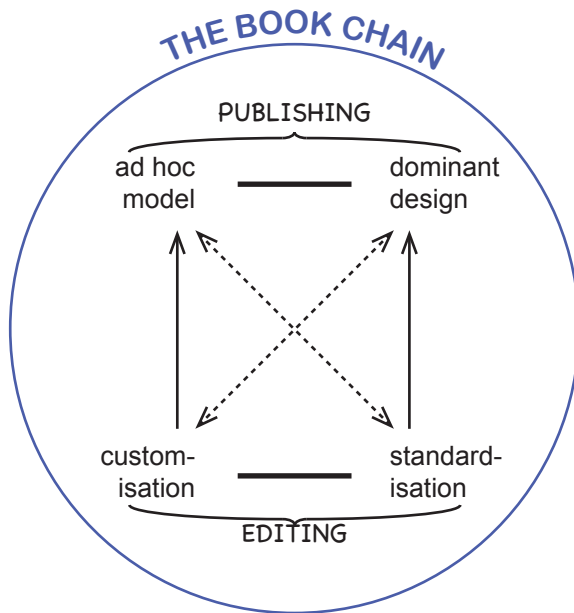


Figure 79. The myth and semiotic squares of the book chain, CC BY-NC 4.0

2.3. The publisher-designer designs user experiences in the framework of “the digital divide”

It is a matter of skills, but it is also an issue of time and money. Some users are ready to pay a premium (see left-hand side of Figure 80, the vertical profitability → intuitivity) for a seamless user experience (e.g. choosing Apple products, which is also partly due to the Veblen effect, over those functionally equivalents in cheaper brands) while others would rather spend time hacking instead of paying (see right-hand side vertical budget → functional control).

On the side of the imprint or publishing house to which the project teams belong (see bottom of Figure 80)—on the side of publisher-designers—, there is also an element of greed associated with the for-profit companies’ willingness to take risk versus a precautionary principle associated with the use of public money for the public sector or of financial donations for non-governmental organisations. The choices are proportional to the willingness to take chances or to control risks, but the outcomes will also eventually be subject to volatility and “bounded rationality”²⁶. ENTREPRENEURING and complexity theory²⁷ were connected by organisational

26 Herbert Alexander Simon (1916-2001) was the winner of the 1978 Nobel Prize in Economics for his “critique of the optimizing model of rational decision making and its replacement with the concept of bounded rationality” (Johansson-Sköldberg, Woodilla, & Çetinkaya, 2013). “A very unefficient company in terms of cost control could create much more profit and social wealth than a well controlled one if the former has a better design process than the latter.” (Hatchuel, 2002)

27 “(McKelvey, 2004) draws on insights from several sources: complexity theory from the European school, chaos theory from the American school, and postmodernist descriptions of complex causation.” (Steyaert,

psychologist Chris Steyaert (2007) as *autopoiesis* (i.e. what “makes it possible to conceptualize emergence”). It is based on “a form of coauthorship that interweaves collective stories, dramatic interactions, generative metaphors and concurring discourses” in which narration is both *performed* and *performative*. This definition of entrepreneuring is based on Simon’s ex PhD student Saras D. Sarasvathy’s; i.e. “effectuation” as a form of “making it happen” that highlights “entrepreneurial imagination” in order to “create the society we want to live in from the society we have to live in”²⁸. In the media context, it means taking into account the interests and mentality of two polarities of mediators: on the right-hand side public servants who “provide services to the collectivity without counterpart”^{*} but within allotted budgets (since they are eventually accountable to the collectivity of taxpayers) and, on the other hand, private sector employees and entrepreneurs who “adapt their practice to the imperatives of efficiency and profitability”^{*} (Meyriat);

A USER INTERFACE (see top of Figure 79)—on the side of reader-clients—should be ergonomic²⁹ and is thus purposely and actively “designing and arranging things people use so that the people and things interact most efficiently” (Merriam-Webster online dictionary). This design endeavour can be achieved in two different ways. On the left-hand side, intuitiveness requires the less effort as “a tacit knowledge that one can muster of the usability of an object before learning about it”^{*} (Guibourgé & Moutat, 2017). In this perspective, the “editorial enunciation”^{*} remains at an “infra-ordinary”^{*} level which is an “essential characteristic of all efficient media: to remain hidden”^{*} (Souchier, 1998). On the other hand, users can be empowered to exercise functional control. Interfaces can be designed to be explicit (to reveal their structure and workings) and require people to make conscious efforts to use them. As Anthony Masure (2017) explained, it is a goal of the digital humanities 3.0 to “understand and ‘deconstruct’ digital systems”^{*} in order to free them from economic policies.

2007)

28 “Sarasvathy (2004: 524) considers effectuation ‘at heart a theory of design’ but seems to give ‘plenty of’ agency to the individual as it is ‘the person/s who is making it happen’” (Steyaert, 2007).

29 In ergonomics, the latin *ergo* means “action, work” (as in Descartes’ *cogito ergo sum*) and therefore conveys a sense of activity and purpose.

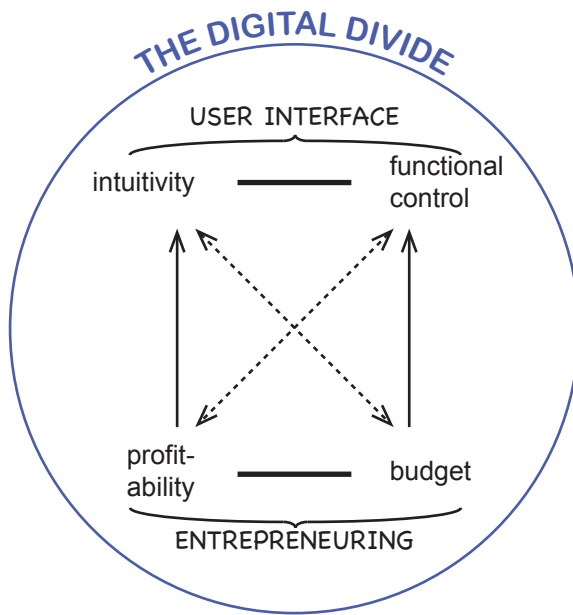


Figure 80. The myth and semiotic squares of the digital divide, CC BY-NC 4.0

2.4. The threefold composition of the PMC

The throughput of each of the three semiotic squares (see Figure 78, Figure 79 & Figure 80) are the four semiotic signs. These semiotic signs have been defined according to the semiotic square (see Figure 75 and Figure 76; input terms S_1 and S_2 , and resulting terms S_1 and S_2). The ensuing association of bottom (input) and upper (output) semiotic signs define four possible genres per myth; two straightforward and two paradoxical (see Figure 77).

Since the three semiotic squares are on the same plane of project (i.e. first order), they can be grouped into the same model. Each of them was rotated separately so that they fit on the same mapping. In short, the PMC is the result of a three-step process (see Figure 81). It is first framed by the KDT, second expressed by a semiotic model (the semiotic square) which results into a visual mapping model of knowledge design (see Figure 82, Figure 83 and Figure 84), and third there is a feedback loop to update the PMC in the framework of the KDT, as and when required by changing or different contexts. For example, the proposed PMC has been designed in the context of the mature publishing markets of the US, the UK and France in the 21st century. The PMC for the same countries in the 19th century, or for different countries (e.g. Korea, Uganda or Bolivia) nowadays, would need to be reexamined and would probably turn out to be quite different to the one presented.

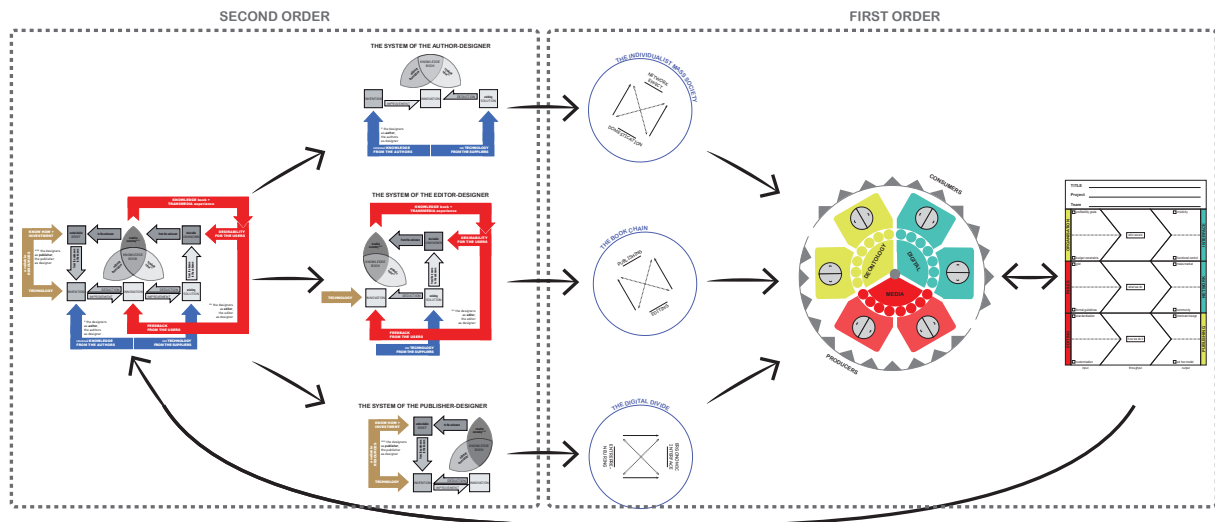


Figure 81. The interactions of the Publishing Model Canvas with the Knowledge Design Theory, CC BY-NC 4.0

It does not actually make practical sense to breakdown the KDT or the PMC into three sub-systems. The only reason why they are presented fragmented is for a better understanding of the proceses of how they were created and to provide a detailed view of their interactions. The whole resulting PMC represents a three-zonal mapping. Due to its complexity, the system of the PMC (see Figure 82) can only work with play (with the double meaning of game and slack) between the stakeholders (reader-clients, author-designers, editor-designers and publisher-designer).

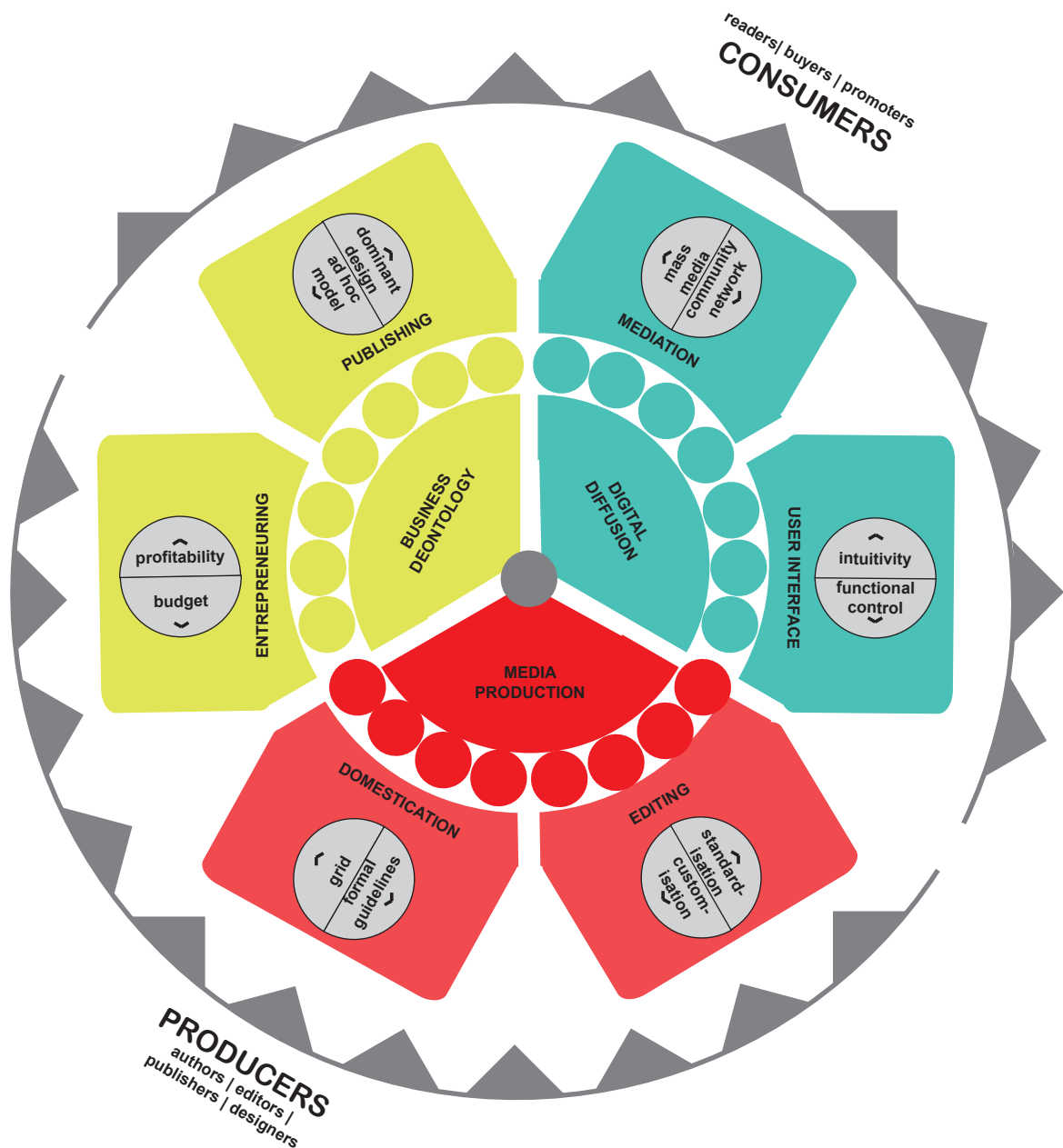


Figure 82. The Publishing Model Canvas (annotated version), CC BY-NC 4.0

3. How to use the PMC?

In the details of the three semiotic squares, each of the six activities of the first order of publishing can express one or another semiotic sign (in a similar manner as alleles are expressed “dominant” or inhibited “recessive” in a gene). For example, a publishing project can be published either to create an “ad hoc model” (e.g. a one-off book) or to emulate a “dominant design” (e.g. a pocketbook, a title in a series). Thus, the PMC (see Figure 83) consists of twelve positions which allow six alignments between two pairs of semiotic signs (input terms and resulting terms); i.e. relations of complementarity or of contradiction (two per myth or semiotic square). For example, the terms “editing” and “publishing” are facing each other and can express two positions “ad hoc model-customisation” or “dominant design-standardisation”

These two examples of straightforward strategies are aligned. Since there are three pairs of terms facing each other, there are thus six *aligned strategies*, and there are also six *misaligned strategies*, for example the paradox of “ad hoc model-standardisation”.

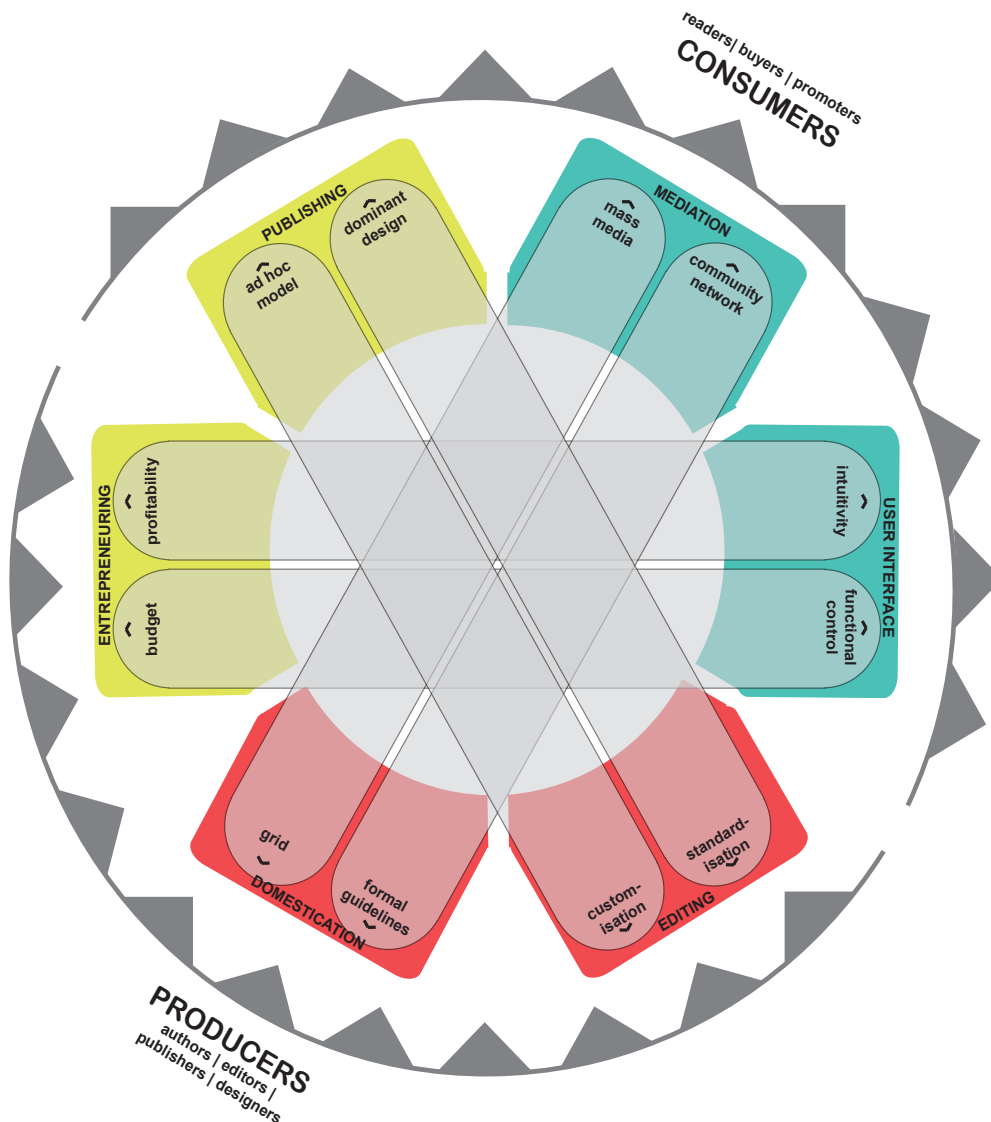


Figure 83. The Publishing Model Canvas (working version), CC BY-NC 4.0

For ease of use, the PMC is based on a form (the “publishing canvas”) for the stakeholders of the knowledge publishing project or for the analysts of the knowledge book to fill (see Figure 84). This form is structured as a matrix consisting of three vertical zones and three horizontal, and each horizontal zone is subdivided into two sub-zones. The three vertical zones to the left—input—corresponds to the three semiotic signs which are the input terms of the PMC. Symmetrically, the three vertical zones to the right—output—corresponds to the three semiotic signs which are the resulting terms of the PMC. For these two zones, only one sub-zone (i.e. a S_1 or S_2) per zone should be used. The three vertical zones in the middle—throughput—are labelled “who we are”, “what we do” and “how we do it” (“we” are the project stakeholders; i.e. the author-designers, the editor-designers and the publisher-designers).

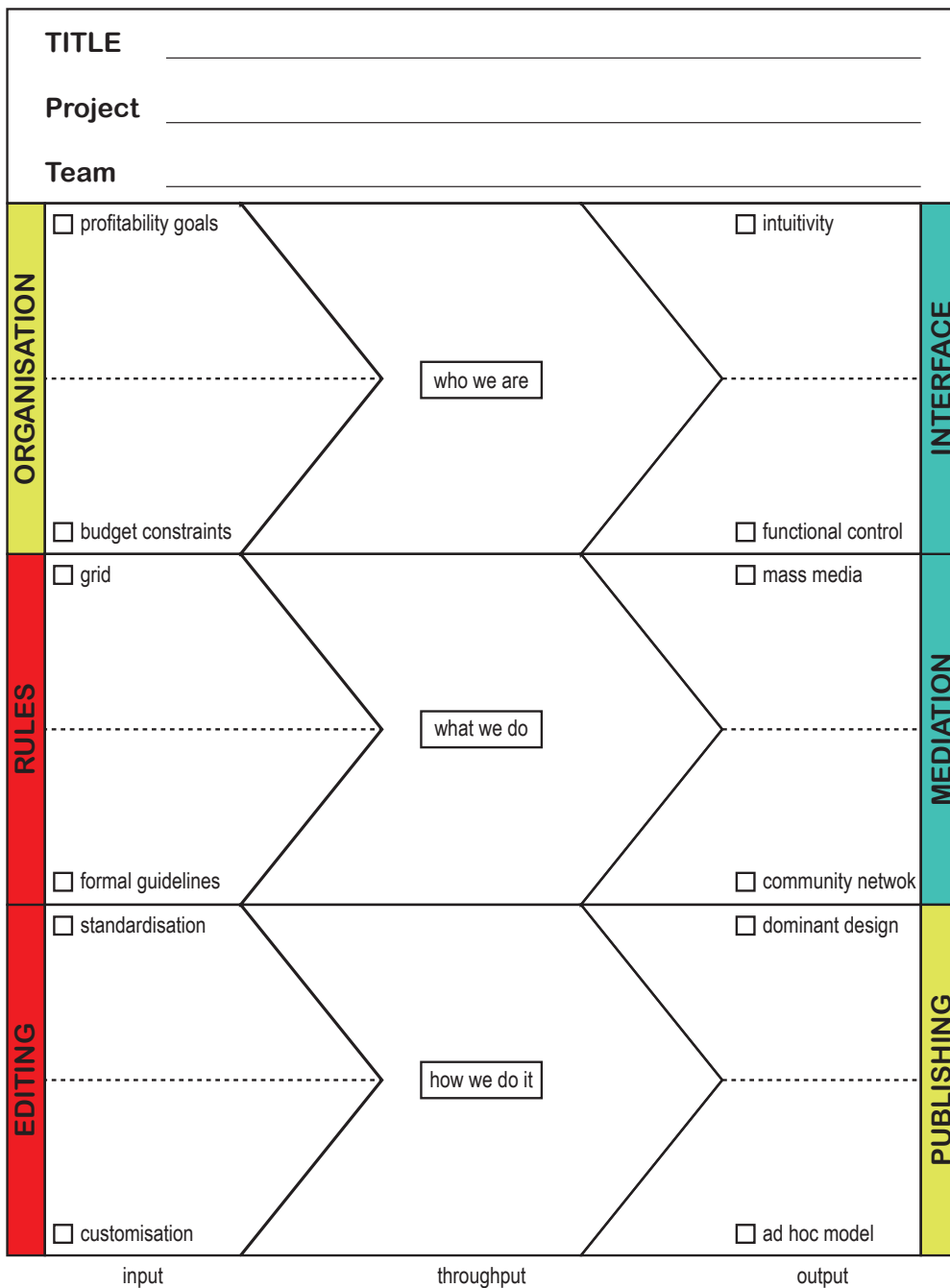


Figure 84. The form of the publishing canvas, CC BY-NC 4.0

Whether strategies are aligned or misaligned are not judgement values. The strategies are “interrelated elements which can only be defined in relation to each other” in the same manner as Ferdinand de Saussure explained for the system of linguistics. For Morin (1985) there are conditions of emergence in the systems theory when “certain phenomena are shaped as interrelations which become organisational” but there is “no natural *sui generis* organisational principle” or *deus ex machina*. In this context, “aligned” can be understood as “straightforward” or

“regular” (*efficient* in organisation theories), and “misaligned” can be interpreted as “deviant” (i.e. *innovation* in sociology³⁰).

30 As the sociologist Norbert Alter (2000) put it “innovation does not happen according to a process independent of the established order of the organisation. Both are complementary but antagonistic”* because innovation thrives on uncertainty while the purpose of organisations is to reduce uncertainty.

Chapter 14.

The benefits and limitations of the PMC

1. The values of the PMC

Media are experience goods and their social utility (their combined semantic value and network effect) endows them with economic value. This value translates as selling prices (that combine use value and symbolic value). In the specific context of book publishing, the concept of *rhetoric value* nullifies content value but encapsulates symbolic value. The theoretical basis of this concept draws on the Barthesian description of rhetoric as a metalanguage, a chiasmus of “a demonstrative block framed in between two slices of ‘emotion’”³¹ where the content is denoted and the symbol connoted. With this theory, content can be construed as a core value of a book (contained by the book as a medium).

Another issue, raised by Phillips, is the rise of a new kind of capital—“digital capital”—as a shift “from individual products to providing a service” in the networked economy. Digital capital is loosely defined as the co-creation of value around authorship and readership facilitated by digital tools. With those tools, stakeholders—customers, readers, authors—increasingly share what they are reading/writing, suggest new titles, give feedback on work in progress... This higher level of involvement encompasses the experience of reading or writing (it often involves both in turn³¹) and is “audience-centric rather than product-centric”.

2. The scope of the PMC and of other models

The Design Ladder spans the whole scope of knowledge design (see Figure 85):

- Step 1 is the realm of semantic publishing where, as the founder of Microsoft Bill Gates prophesied “content is king”³², digital content has outweighed everything else and is exponentially continuing to do so³³. At this level, “content is blob”. This metaphor expresses the shapelessness of content, as the enormous brainless cell known as the blob³⁴ which is able to move, learn and communicate. It can do things that a human would have “a hard time doing without a computer”³⁴;

31 Dacos, Marin, éd. 2010. *Read/Write Book : Le livre inscriptible*. Traduit par Virginie Clayssen. Read/Write Book. Marseille: OpenEdition Press.

32 For founder of Microsoft Bill Gates (“Content is King”, January 1996, Microsoft website), “the long-term winners [of the television revolution that began half a century ago] were those who used the medium to deliver information and entertainment. [...] Content [e.g. computer software, information or entertainment] is where I expect much of the real money will be made on the Internet [...] the Internet is already revolutionizing the exchange of specialized scientific information [...] Those who succeed will propel the Internet forward as a marketplace of ideas, experiences, and products—a marketplace of content.”

33 “Over the last two years alone 90 percent of the data in the world was generated.” (Bernard Marr, “How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read”, 21st May 2018, *Forbes*)

34 H el ene Combis, “Le blob : 4 super-pouvoirs  a conna tre”, 19th October 2019, France Culture.

- At steps 2 and 3, content is designed by and for humans and the stakeholders need to communicate efficiently between themselves in order to create an efficient knowledge system (e.g. a knowledge book) for its intended users. This is the purpose of the PMC to help formalise an informed discussion. Other tools and models can also be implemented in order to gain perspective from different angles. For instance, a management tool is widely used in publishing to monitor economic performance—the p&l (profit and loss account). Process models are already available in design, ICS and semiotics and it is therefore not necessary to create another one. For instance, the design thinking approach of the Double Diamond has been mentioned, there is an abundant literature in ICS about socio-economic models (e.g. Bouquillion, Chartron, Miège, Moeglin, Zacklad, etc.), theoretical models in both cultural economics such as the publishing protocols (Bomsel) and in publishing studies such as Bhaskar’s, and Deni’s work on “the semiotic intervention in project: from concept to object”;
- At step 4 of the Design Ladder, it is recommended to use specific tools such as the Business Model Canvas (BMC) to support corporate strategic decisions, in-depth semiotic analysis to identify myths, and to complement them with economical, anthropological, sociological, psychological analysis (the list is not exhaustive).

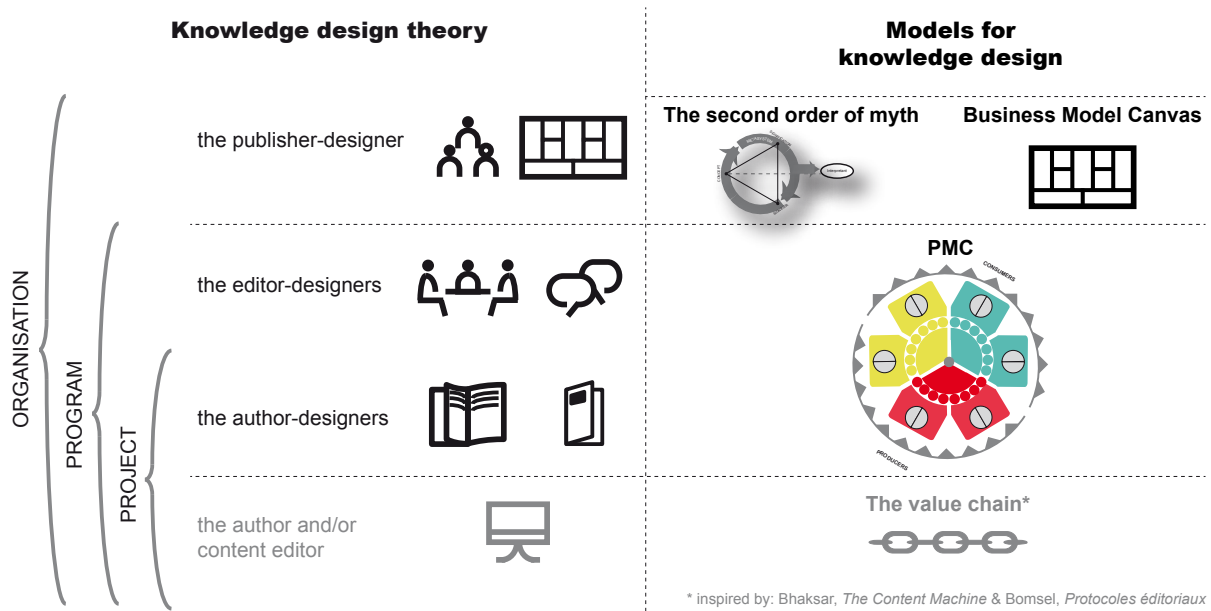


Figure 85. The PMC, the second order of myth and the BMC in the framework of the design ladder, CC BY-NC 4.0

The original idea of the PMC has been influenced by the BMC developed by Osterwalder and Pigneur (see Chapter 15). I shall mention that the BMC has been congruently developed through a design thinking process and has been designed to be used in the design thinking process. I have been using the BMC in professional workshops since its inception (for almost ten years now) both in project management and training contexts. It has proved efficient and reliable, and I do neither see any reason to try and design another model nor feel that I could improve it.

Part Four:
The case studies

Chapter 15. “Business Model Generation”

1. A thesis transformed into a knowledge book

This study is an example of how an innovative approach to business model was turned into an innovative book in order to popularise the outcome of a doctoral research to the wider business community of practitioners. What was by-default editing of a classical artefact (a thesis) has been transformed into a collective design thinking project and became a series of creative trans-media artefacts (including a book). Over a nine year period, from the inception of the thesis until the book was published, the authors followed a three-step communication process: 1. researching and writing the thesis—production and legitimisation of knowledge (information); 2. formatting the ontology into a convenient canvas to teach it to students and to use it in workshops with professionals—performance and fine-tune of knowledge transmission (media); 3. rewriting the text and designing the book—rhetorical publishing (communication).

This case study is structured in two parts: the first is about how the author wrote the thesis as an artefact to prove the worth of his thinking (i.e. focused on the author’s methodology), and the second how the author-designers and editor-designers published the book as an artefact for action (i.e. focused on the readers’ perception): 1. a comparative analysis of the writing of the thesis and of the generation of the book which was “co-created highly visual”, and thus had to touch on the “visual forms of knowledge production”¹; 2. an user-oriented approach of how readers were encouraged to adopt a transmedia attitude and navigate from a freely available online canvas and supplementary materials (instruction manual, card deck), to the book, paid-for apps and exclusive masterclasses and workshops.

2. How the features of a thesis were morphed into a book through design

For its author, Osterwalder (2004), “the two main domains that serve as a foundation for this thesis are management theory and information systems.” The thesis was thus *situated in two* disciplinary fields and *based on* established knowledge and theories. The thesis was at the same time more and less ambitious than the book. On one hand an “ontology” is wider-encompassing than a “model”, and on the other a “proposition” is less assertive than a claim “to defy out-moded business models”. The book was *designed for* a generation—with its double-meaning of the creation of something and of a group of people of the same age band.

1 Johanna Drucker, *Graphesis—Visual Forms of Knowledge Production*. Cambridge, Massachusetts: Harvard University Press, 2014.

2.1. A semiotic approach to deal with complexity—from re-presentation as memory to representation as communication.

There is indeed a long way, and a rather long period of five years in this case, from an ontology aimed at modeling an algorithmic data-processing of business information to designing a handbook for people to use better management tools and enhance communication around projects and within organizations. The thesis had originally been presented to his peers by the author who applied to become a doctor in business computing. It was then redesigned by a team of authors, editors and designers for a loosely defined audience of “visionaries, game changers, and challengers” to help them “design tomorrow’s enterprises”.

The two images presented thereafter are set towards the end of each volume (of both the thesis and the book) and are meant as synthesis or “take away”. Figure 86 in the thesis was composed of four subsystems (“Balanced ScoreCard”, “Alignment Profile”, “IT Application Portfolio”, and “IT infrastructure”) organised around a main system (unnamed)—as shown by directional arrows pointing outwards from the centre to the periphery. Those systems were drawn at different scales and juxtaposed. There are no visual cues if (or how) they are organised (or interact with each other) to form a model, and the overall image is cluttered. These cues might be unnecessary for the intended expert readers (the professors of the doctoral jury) who are supposed to possess the implicit knowledge to read this diagram. No such assumption of implicit knowledge was made in the design of Figure 87. It is an image of (two-) layered reality with the BM canvas at the background (at this stage of the book the canvas is a familiar feature which has already been displayed more than seventy times in previous pages), and the introduction of Jay Galbraith’s Star Model in the foreground.

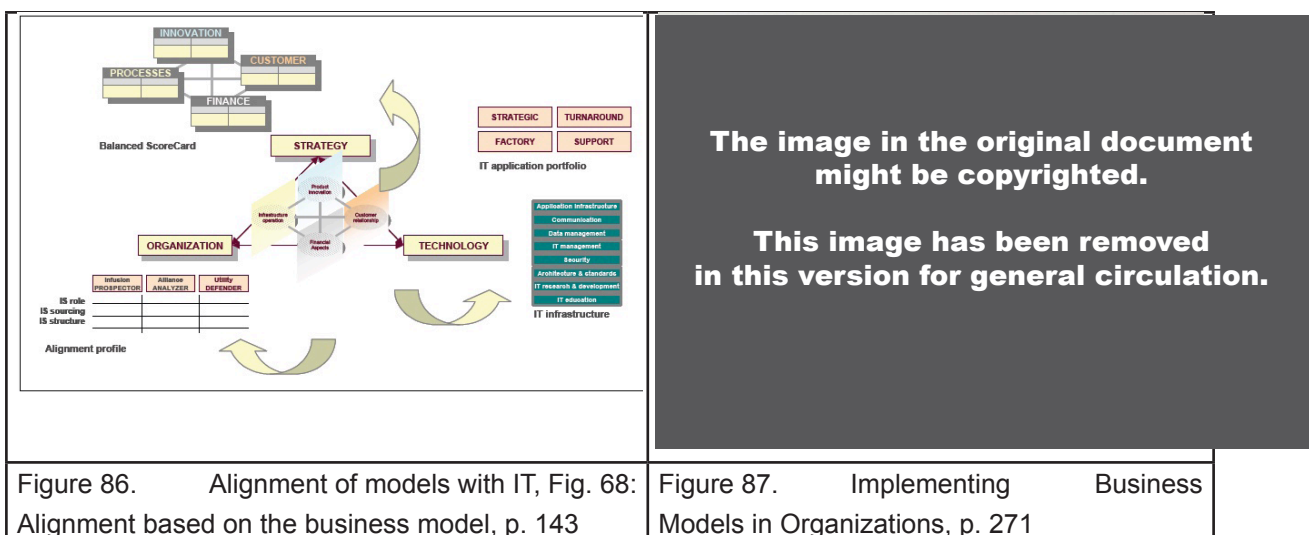


Figure 86. Alignment of models with IT, Fig. 68: Alignment based on the business model, p. 143



Figure 87. Implementing Business Models in Organizations, p. 271

For Bertin (1967) in his *Semiology of graphics* “graphic representation is an experimental tool to build a collection of comparable images with which a researcher ‘plays’”^{*} and, because i in-

formation is “polyscopic”², representation can have three functions: 1. registering information; 2. communicating information; and 3. processing information. Figure 86 is a case of registering information; i.e. the design of an exhaustive “artificial memory” of—possibly complex—figures which thus might not be easily memorable. It is a mere re-presentation. By contrast, Figure 87 embodies both functions of re-presenting and, as well, of communicating and processing information. Communication and information processing are performed through the design of a “simplified” image of a memorable “message”—not by extracting part of the information but by both ordering it qualitatively and by omitting odd data in order to “smoothen the curves”. In other words, it is archetypal modeling (i.e. representation and reduction). This second case is similar to the “process in which the makers of signs seek to make a representation [which] is never the whole object but only ever its criterial aspects”³ also described by Kres and van Leeuwen (1996).

2.2. Visual rhetoric: a leap from system thinking to visual thinking

The thesis was situated in the two disciplines of management theory and information systems which both rely on *system thinking*. The book was self-described as “a handbook for visionaries” and “many words link vision with thinking. *Insight, foresight, hindsight, and oversight. Visionary and seer*. The word ‘idea’ derives from the Greek *idein*: to see”⁴ it was thus crafted in *visual thinking* through a process of “mental imagery” which is frequently described by designers as “seeing with the mind’s eye” (Oxman, 2002).

Alexander Osterwalder (the author of the thesis and co-author of the book) seemed to have applied what he was recommending others in his book (see Figure 88). Himself a business researcher, he has acquired skills to become a design thinker—more “master of heuristics” than “manager of algorithms” (Roger Martin, “The Design of Business”, 2004)—and has shifted his focus from the thesis to the book accordingly. The first and most obvious feature of the book compared to the thesis is its landscape format (see Figure 89), versus the standard A4 portrait format.

2 For Morin (2015), information is “polyscopic” for “it sometimes appears as memory, sometimes as knowledge, sometimes as message, sometimes as program, sometimes as organisational matrix” or “*rather as all of that altogether*”^{*}.

3 Kres & van Leeuwen further elaborate the “process in which the makers of signs seek to make a representation of some object or entity whether physical or semiotic, and in which their interest in the object, at the point of making the representation, is a complex one, arising out of the cultural, social and psychological history of the sign-maker, and focused by the specific context in which the sign-maker produces the sign” in *The Grammar of Visual Design* [1996]—presented by the authors as “a resource for beginning to make inroads into understanding the visual as representation and communication—in a semiotic fashion”.

4 Robert H. McKim, *Experiences in Visual Thinking*. 2nd edition. Monterey, Calif: Cengage Learning, 1980.

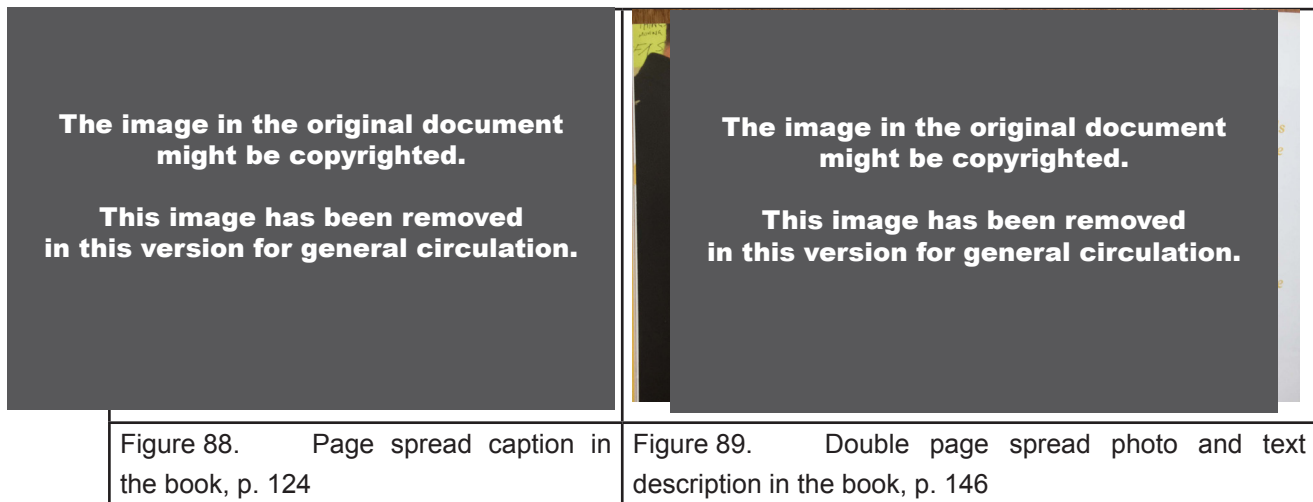


Figure 88. Page spread caption in the book, p. 124

Figure 89. Double page spread photo and text description in the book, p. 146

The substantial augmentation from the 168-page thesis to the 280-page book has been mainly graphic (i.e. non-textual). The text-to-illustration ratio of the thesis was 2:1 and became less than 1:1 in the book (see Figure 90).

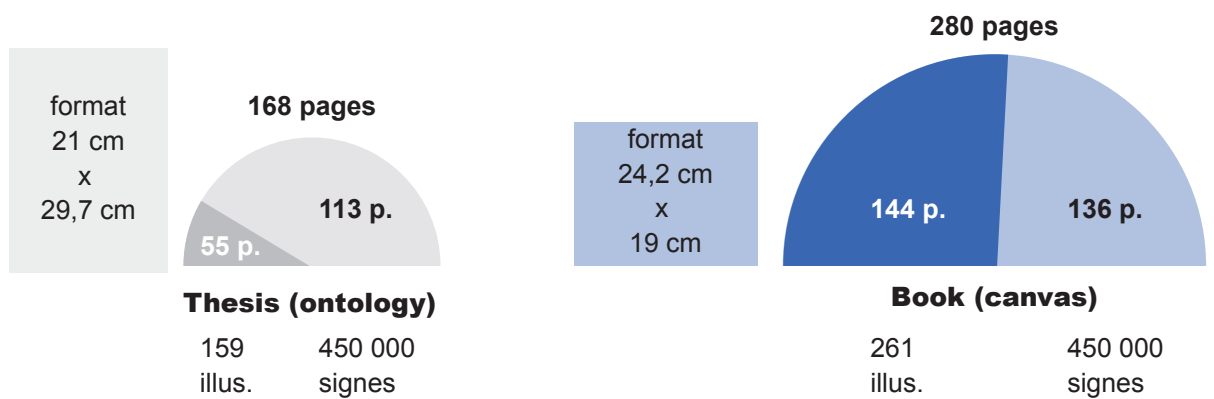


Figure 90. Text-to-illustration ratio, CC BY-NC 4.0

In the thesis there only are “artificial” diagrams which “do not describe an actual spatial arrangement”⁵ and tables, whereas in the book the visual mix includes figurative pictorial elements such as sketches and photos which ground it into the “real” world (see Figure 91). A feature of *Visual Strategies*⁶ can be drawn from the use of “exploratory graphics [which] invite the viewer to discover information” and “explanatory graphics [which] are used to communicate a point or call attention to patterns and concepts”. There are relatively more explanatory and less exploratory illustrations in the thesis than in the book, the former would thus be speculative or interpretative and the latter more matter-of-fact.

5 Jill H. Larkin & Herbert A. Simon, “Why a Diagram is (Sometimes) Worth Ten Thousand Words”, *Cognitive science*, 11, 1987.

6 Felice C. Frankel & Angela H. Depace, *Visual Strategies. A Practical Guide to Graphics for Scientists and Engineers*, New Haven Conn. ; London: Yale University Press, 2012.



Figure 91. Quantity of illustrations, CC BY-NC 4.0

In the thesis, the page-space⁷ allocation was about 1:1 explanatory-exploratory and 1:2 in the book (excluding the decorative illustrations, see Figure 92). According to Larkin & Simon in “Why a Diagram is (Sometimes) Worth Ten Thousand Words” (1987) “diagrams automatically support a large number of perceptual inferences, which are extremely easy for humans”.

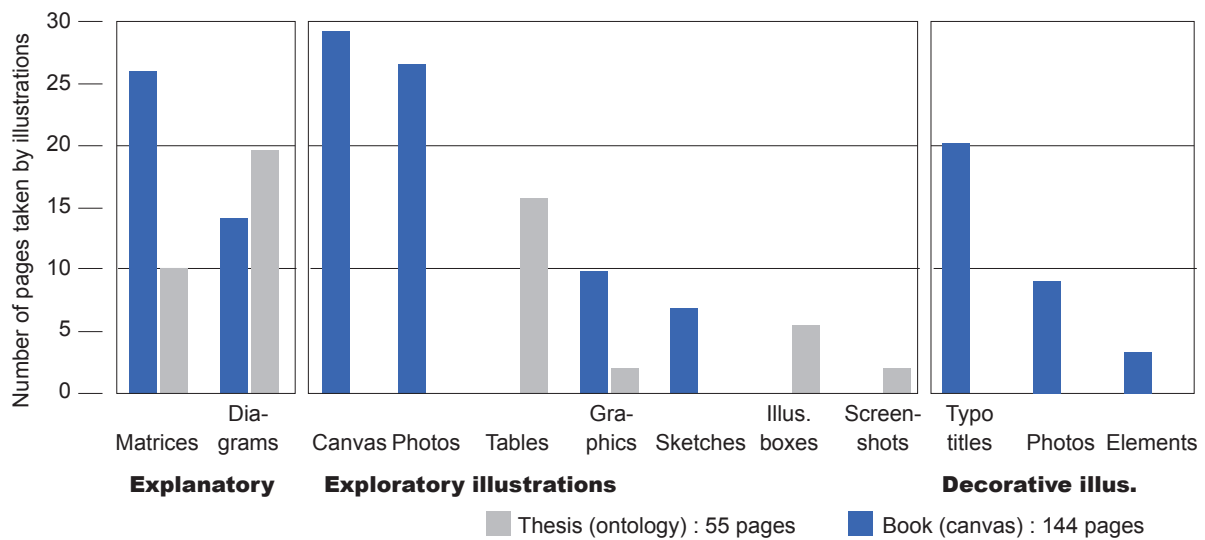


Figure 92. Surface of illustration (in page-equivalent), CC BY-NC 4.0

2.3. A form by default and a designed artefact

The two examples of the cover and of the table of contents hereafter are prominent instances of, on one hand, automated composition with a word processor for the thesis and, on the other, of a graphically designed book. The typographical analysis⁸ shows that the format of the thesis is classic and static while it is dynamic and informal for the book (see Figure 93). This analysis is based on the three dimensions of layout, images, and type design. First, the composition of the cover page of the thesis is balanced and framed. On the contrary, the layout of the book is

⁷ The page-space is the surface of pages allocated to an element, for example a graphic, a paragraph, etc.

⁸ In the French graphic tradition, typography encompasses the two dimensions of typesetting and type design which are more distinct in the english speaking world of books and publishing.

“baroque”⁹ and expresses motion and emotion. Second, there is no image on the cover page of the thesis except for the “image of text”¹⁰ which is featureless. Conversely a series of hand-drawn sketches covers the surface of the lower right of the book cover which also participate of the sense of spontaneity. Third, the family of font in which the text of the title of the thesis was set in is classic “didonic”¹¹ versus greater visual impact and more informal “lineal” sans serif type fonts for the book.

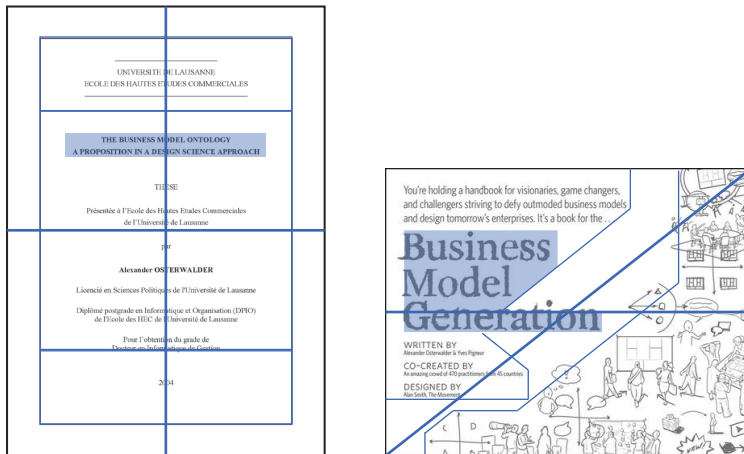


Figure 93. Comparative compositions of the covers of the thesis and of the book, CC BY-NC 4.0

The Tables of Contents (TOC) of the thesis and the book are other examples of the different design approaches of both published artifacts. On one hand the TOC of the thesis was automatically generated by a word processor (see Figure 94) and is an example of “function follows form” (i.e. a classical conception). On the other hand the two-page spread of the TOC in the book (see Figure 95) appears to have been designed according to a modernist approach of “form follows function”. It is actually not one TOC but three different forms of it (from left to right): 1. narrative with a step-by-step timeline of embedded bullet points; 2. visually semantic with a spiral form that is meant to convey sense and direction; 3. functional as a navigation tool. This threefold approach of the *BMG* is similar to what has been advocated by Burdick & Willis (2011) for a *generation* of digital natives who are “bricoleurs” and “require new ways of

9 Heinrich Wölfflin. *Renaissance and Baroque*. Ithaca; New York: Cornell University Press, 1967.

10 Emmanuël Souchier, « L’image du texte pour une théorie de l’énonciation éditoriale ». *Les cahiers de médiologie*, 6, 1998.

11 “Didot” was the name of a font family given by typographer Thibaudeau in his 1920s classification and “didonic” was the name in the 1950s’ Vox-ATypI. This was a tribute to the french and italian printers Didot and Bodoni who mastered the design and production of this kind of rational fonts at the classic period of the late eighteenth century. The main features of these fonts are their verticality and symmetry (especially for the capitals) and also their contrasting inner weight and their linear serif type. They bear a classical quality.

thinking and knowing [which] center on an expanded notion of design thinking that includes 1. visual rhetoric; 2. comprehension of situated expression; 3. a user-oriented approach”¹².

<p>1 INTRODUCTION 1</p> <p>1.1 BACKGROUND AND RESEARCH CONTEXT 1</p> <p>1.2 RELEVANCE AND RESEARCH DESIGN 2</p> <p>1.3 METHODOLOGY 3</p> <p>1.4 CONTRIBUTIONS OF THIS RESEARCH 8</p> <p>1.5 STRUCTURE OF THIS THESIS 9</p> <p>1.6 ACKNOWLEDGMENTS 9</p> <p>2 ORIGIN, DEFINITION, PLACE AND ROLE OF BUSINESS MODELS IN THE FIRM 11</p> <p>2.1 TECHNOLOGY, ENVIRONMENT, COMPLEXITY AND UNCERTAINTY 11</p> <p>2.2 HOW IT ACTUALLY IS A BUSINESS MODEL 14</p> <p>2.3 THE BUSINESS MODEL PLACE IN THE COMPANY 16</p> <p>2.4 USE OF BUSINESS MODELS 19</p> <p>2.5 BUSINESS MODEL ONTOLOGY AND BUSINESS MODEL TOOLS 22</p> <p>3 KNOWLEDGE OF THE PROBLEM DOMAIN 23</p> <p>3.1 BUSINESS MODEL LITERATURE 23</p> <p>3.2 OVERVIEW 29</p> <p>4 THE BUSINESS MODEL ONTOLOGY 42</p> <p>4.1 INTRODUCING THE ONTOLOGY 42</p> <p>4.2 THEORY 46</p> <p>4.3 CUSTOMER INTERFACE 58</p> <p>4.4 THE STRUCTURE OF THE MANAGEMENT BLOCK 70</p> <p>4.5 FINANCIAL ASPECTS 95</p> <p>5 CASE STUDY: MIF 100</p> <p>6 APPLICATION PROTOTYPES: BPM 118</p> <p>6.1 FROM THE ONTOLOGY TO A FORMAL MARKUP LANGUAGE 118</p> <p>6.2 THE BUSINESS MODEL MARKING LANGUAGE (BMML) 119</p> <p>6.3 TRANSFORMING THE DOCUMENTS 123</p> <p>6.4 VISUALIZING A CHANGE TREATMENT WITH SCALABLE VECTOR GRAPHICS (SVG) 123</p> <p>6.5 CONSIDERING A WORKFLOW 125</p> <p>6.6 CONCLUDING WHY USE BPM? 126</p> <p>7 EVALUATION 127</p> <p>7.1 LITERATURE REVIEW 129</p> <p>7.2 INTERVIEWS ON BUSINESS MODELS 132</p> <p>7.3 BUSINESS MODEL CASE STUDIES 138</p> <p>7.4 TESTING DEVELOPERS' WHAT'S NEXT? 141</p> <p>8 ONTOLOGY APPLICATIONS AND FUTURE RESEARCH 143</p> <p>8.1 RESEARCH 143</p> <p>8.2 BUSINESS MODEL COMPARISON 156</p> <p>9 CONCLUSION 159</p> <p>10 BIBLIOGRAPHY 169</p>	<p>Table of Contents</p> <p>The book is divided into five sections: Canvas, Patterns, Design, Strategy, and Process. Each section contains a list of topics and page numbers. The Canvas section includes 'Definition of a Business Model', 'Building Blocks', 'The Business Model Canvas', and 'How it Works in a Business Model'. The Patterns section includes 'Customer Insights', 'Value Proposition', 'Channels', 'Relationships', 'Revenue Streams', and 'Cost Structure'. The Design section includes 'Visual Thinking', 'Prototyping', and 'Strategic Thinking'. The Strategy section includes 'Business Model Development', 'Business Model Innovation', and 'Business Model Comparison'. The Process section includes 'Business Model Design', 'Business Model Implementation', and 'Business Model Evaluation'. The Afterword section includes 'What's Next?'. The Index section includes 'Index'.</p>	<p>Canvas Patterns Design Strategy Process</p> <p>14 Definition of a Business Model 58 Understanding Business Models 126 Customer Insights 200 Business Model Development 242 Business Model Design/Process</p> <p>46 Building Blocks 66 The Canvas Kit 134 Ideation 192 Visual Thinking 212 Evaluating Business Models 242 Outlook</p> <p>44 The Business Model Canvas 26 How to Use the Canvas 100 Prototyping 208 Business Model Preparation and Deployment 242 Afterword</p> <p>88 How it Works in a Business Model 100 Strategic Thinking 210 Strategic Thinking: Business Models 242 What's Next? Book Come Back?</p> <p>169 Bibliography 210</p>
<p>Figure 94. TOC of BMO</p>	<p>Figure 95. TOC of BMG</p>	

In a thesis the format is imposed—or at least “unthought”¹³—, on the contrary the book style of the *BMG* was selfconsciously designed in terms of both its form and function and also of the relationships between them.

3. Understanding with mind and body, making sense with senses

3.1. How did its intended audience react to the BM canvas?

In the thesis, the author was already concerned about the reception of his work beyond his academic peers. He had interviewed a dozen managers and consultants for 60 to 90 minutes each in order to assess the “ontology’s fidelity with real world phenomena” of the BM. Respondents were “all quite receptive to the topic”. Three main uses were anticipated by business practitioners: understanding quicker with a “visualization tool”, improving “communication” and “discussion quality”.

The results of a 2015 survey of 1,500 respondents who used the canvas (conducted by Strategyzer, the consultancy founded by the author-designers) confirmed its three anticipated uses. It showed that readers used it because “it is a visual tool”, “it facilitates group discussion” and “it has a practical simple user interface” for around 50% each, and “it is intuitive” for 46%; minor reasons with 10-15% each were that “it was recommended or has good reviews” and “it is affordable” (US\$ 34.95). The results of this qualitative survey were globally positive and the circulation figures of more than a million copies of the book sold were an impressive quantitative achievement that confirmed this qualitative feedback.

12 Anne Burdick & Holly Willis, “Digital learning, digital scholarship and design thinking”. *Design Studies*, 32, 2011.

13 “L’impensé du texte” in Emmanuël Souchier, “La mémoire de l’oubli : éloge de l’aliénation”. *Communication & langages*, 172, 2012.

WHAT WERE THE MAIN REASONS FOR THIS PUBLISHING SUCCESS? Three main reasons can be given: an user-oriented approach, playful 3D game-board thinking, and the augmentation of the thesis by the book.

3.2. An user-oriented approach: a shift from content-first to reader-first

In the thesis, the BM is presented page 43, after the research and the context were described. In the more circular (spiral-like) way of the book (see Figure 95), it starts with the BM canvas and revolves around its different aspects all along. The description of the BM as a theoretical system was carried out in the thesis with its nine blocks grouped into four pillars. Tables (such as Figure 96) display definitions of each term starting by [...] “is” or “describes”. This process provides a sense of order and stability, of solid reference. In the book, the nine elements are introduced together on the same two-page spread by order of appearance as a frieze-like narrative (see Figure 97). This is already a rhetoric of these elements—which are self-justified by their place in the narrative—and thus do not need to be shown to belong to a higher order of things such as the “pillars” of the ontology in the thesis.

Pillar	Building Block of Business Model	Description
Product	Value Proposition	A Value Proposition is an overall view of a company's bundle of products and services that are of value to the customer.
	Target Customer	The Target Customer is a segment of customers a company wants to offer value to.
Customer Interface	Distribution Channel	A Distribution Channel is a means of getting in touch with the customer.
	Relationship	The Relationship describes the kind of link a company establishes between itself and the customer.
Infrastructure Management	Value Configuration	The Value Configuration describes the arrangement of activities and resources that are necessary to create value for the customer.
	Capability	A capability is the ability to execute a repeatable pattern of actions that is necessary in order to create value for the customer.
	Partnership	A Partnership is a voluntarily initiated cooperative agreement between two or more companies in order to create value for the customer.
Financial Aspects	Cost Structure	The Cost Structure is the representation in money of all the means employed in the business model.
	Revenue Model	The Revenue Model describes the way a company makes money through a variety of revenue flows.

Figure 96. A table of the nine building blocks in the thesis, Table 16, p. 43

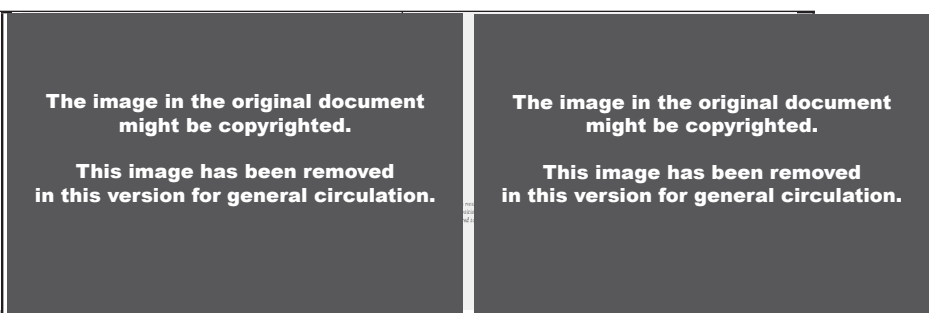


Figure 97. A depiction of the nine building blocks in the book, pp. 16-17

3.3. A shift from a two-dimensional diagrammatic thought to 3D game-board thinking

Figure 99 shows what Kress and van Leeuwen (1996) described as a pre-designed “linear” and pre-ordained “non-linear” diagram combining both a flowchart and a network representation¹⁴. It is a complex representation of the inner workings of the author’s mind which are difficult to understand at first glance by the readers. It is an ambiguous structure—at the same time narrative and conceptual—of something in between a process and a system, alternately,

14 For Kress and van Leeuwen (1996) this “‘linear’ (flowchart) and ‘non-linear’ (network) representation [...] provide the reader with many choices, many paths to follow, but on the other hand tend to obscure the fact that the range of choices is ultimately pre-designed and limited” for “the taxonomy [or flowchart] is modeled on a static, hierarchical organization in which everything has its pre-ordained place in a grand scheme” and “the flowchart is modeled on a form of [...] organization which is a vast labyrinth [...] in which it is difficult, if not impossible, to form a coherent view of the whole”.

where boxes represent participants, connecting lines represent the process that relate them, and arrows represent what participants are doing to, or for, each other. Contrarily to this sole frontal representation of the mind’s eye of the author in the thesis, Figure 99 in the book shows the same representation of a BM from three different perspectives. The same object is apprehended by the reader first as a perspective of a 3D set of building blocks, then as a gameboard seen from above, and finally as a canvas (metaphorically described in its caption as a tool which “resembles a painter’s canvas [...] which allows you to paint pictures of new or existing business models”). As for Figure 97, this succession of images is a message and, in addition to communicating, it is rhetorically encouraging the readers’ engagement. It is a call to action (as formulated in the caption, e.g. “allows you to”, “people can”, “tool that fosters”). In this narrative visual proposition, the first lefthand box is an actor, the one in the middle can be read alternately as a goal and as an actor, and the right-hand box is the ultimate goal. The whole process is unambiguously transactional and, as Barthes (1964) wrote in “*Rhétorique de l’image*”: “the caption helps me to chose the right level of perception; it allows me to adjust not only to my vision but also my intellection”**.

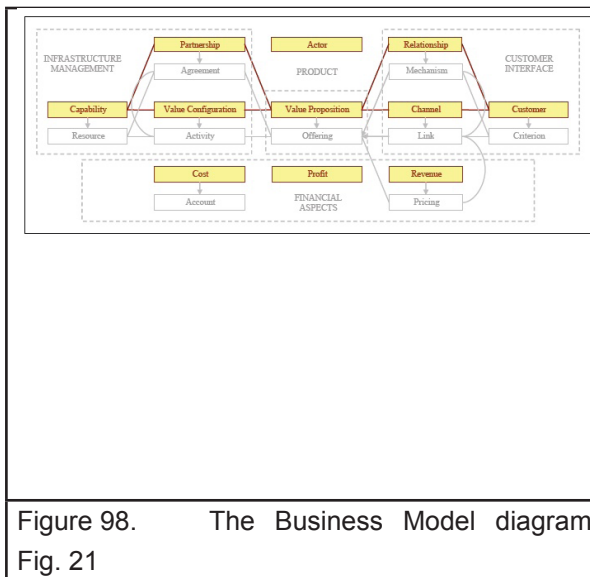


Figure 98. The Business Model diagram, Fig. 21



Figure 99. The Business Model Canvas, p. 42

3.4. Comprehension of situated expression: the book augmented the thesis

As in any thesis, the researcher needed to demonstrate his academic peers-to-be that he had understood the topic he was addressing. But for this book to be a success the authors (the now doctor Osterwalder and his ex-director, professor Pigneur, plus a team of designers) also needed to convince their readers (digital natives amongst others) of its practical value and ease of use in real-life environments. In other words, the book *augmented* the thesis with a layer of “physicality”—from comprehending (“to seize with the mind”¹⁵) to apprehending (“to seize, either

15 *Online Etymology Dictionary*.

physically or mentally”¹⁶). This apprehension can be described in Piagetian terms as the three successive stages of human development through childhood: a body-centered stage, a visual stage and a symbolic stage (beginning at age eleven or twelve). According to Faste (1994), efficient didactic methods should allow a circulation between these stages because “when problem solving becomes blocked at the symbolic level, humans must revert to the right brained abilities associated with these previous stages.”

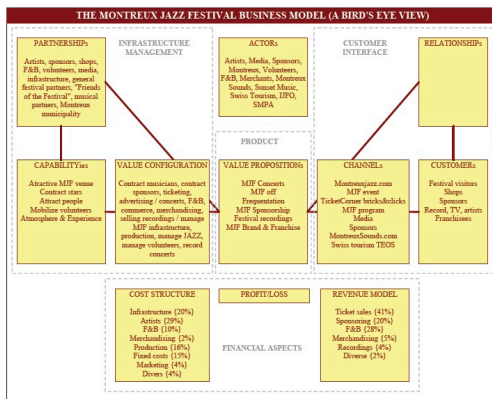


Figure 100. The Montreux Jazz Festival Business Model, Fig. 52

Figure 100 is a comprehensible (although difficult to read) diagram which is fully, and only, symbolic. It is as complex a representation as Figure 98; in other words, this “bird’s eye view” is represented as seen through the author’s mind’s eye. The problem is that what is seen through a double perspective (literally the bird’s and the author’s) has been flattened into a two-dimensional image: the representation does not represent these layers of interpretation. It leaves the reader with the problem of his/her own interpretation of reality through his/her own eyes; is what is shown real and is it the same *real* for the reader and the author?



Figure 101. An example of applied Business Model to a multi-sided platform, pp. 94-95

¹⁶ Merriam-Webster dictionary.

This is a design paradox that the complex composition of Figure 101 helps to deliver a message in a simpler form. At first sight, this double spread composition is Augmented Reality (AR) in that it consists of three layers, each one of them adding information to the others. From the foreground to the background, the first layer is the photo of the smartphone; the second are the photos of the highlighters and the highlighted sketch which appear to be part of the book itself (because they are under the white line framing the two pages and also because the white lines linking the captions with the images continue over them; and the third is the image of the text which is printed in the book. Thus, the reader can read the text and the images, and move from one to the others, at will. He/she can alternately resort to his “right brain” or “left brain”¹⁷ as ambidextrous designers do when they created this image. The reader, as Barthes wrote, is enabled to choose his/her “right level of perception” between images and captions. At closer observation there is a paradox in terms of perspective for the third layer which is simultaneously positioned in the background and superimposed over the second layer by the white lines connecting captions with images; it is similar to the optical illusion of the “impossible” Penrose triangle which artist M. C. Escher has contributed to popularize since its inception in the 1950s.

4. A modernist design approach to publishing that makes sense

This case study shows how knowledge design, applied to the thesis *Business Model Ontology*, in its classical conception of “function follows form”, is a method for registering information with tools such as explanatory graphics. It also shows how design can successfully be applied to communication as in the example of the book *Business Model Generation* with a more modernist approach of “form follows function”. A more extensive analysis would show the other aspects of the shifts from the Virtual Reality (VR) of the thesis to the AR of the book. In the book there are numerous examples of AR by adding layers of visual information (versus juxtaposition of information in the thesis) and other instances of hyperrealist photographic composition (vs. abstract diagram).

As Saussure (1916) recommended, I have proceeded to a “synchronic”¹⁸ comparative analysis between the thesis and the book. It should also be borne in mind that the process—the successive writing, editing-and-designing, and publishing of the two artifacts—were transformational and should be apprehended in a “diachronic perspective”. In other words, there was a shift from making sense of information in the thesis (sense with its dual meaning of “meaning” and “direction”) to communicating sense through senses in the book (“senses” as a plurality of meanings, and also as haptic “senses” such as vision). This aspect from comprehending to apprehending

17 Advances in cognitive sciences have shown that there is actually no clear distinction between right and left brain, one main reason being brain plasticity. Still we propose this concept as a metaphor in order to simplify our communication.

18 “Are facts belonging to the diachronic series at least of the same order as those of the synchronic series? In no way, because we have established that changes are happening outside of all intention. On the contrary the fact of synchrony is always significant”* (de Saussure, *ibid.*).

and from content-first to reader-first should also be developed. That is an approach more akin to user-centric design thinking influenced by the Peircean semiotics of the interpretant than to book publishing as creating content in the sense of an industry of prototypes in which many fail and the few happy successes make up for them.

5. PMC: opposite aligned strategies

As the PMCs for the two examples hereafter show (see Figure 103 and Figure 104), all the links between the semiotic signs are straightforward relations of complementarity. For example, “dominant design-standardisation” for the *Business Model Ontology* and “ad hoc model-customisation” for the *Business Model Generation* are each aligned. The comparison of the two PMCs also show that, within each myth the semiotic signs are opposite. For example, in the myth of “the book chain” the semiotic sign “dominant design” of the thesis is in relation of contrariety with the “ad hoc model” of the book. Thus the point-to-point comparison of the PMC for the thesis and of the PMC for the book are complete opposite and illustrate a shift from one to the other.

Alexander Osterwalder presented his doctoral thesis *Business Model Ontology* in management computing under the supervision of professor Yves Pigneur of the Université de Lausanne in 2004. The media aspects of this thesis were largely imposed. It can be said that they were unthought by the candidate. The formal characteristics of the thesis were conventional in the sense that its format was standard and it followed the prescribed peer community practices, and the proverbial impecuniousness of PhD students meant that it was virtually published with a zero-based budget. Hence the three strategic features of the PMC were aligned as follow: “budget-functional control”, “standardisation-dominant design” and “community-formal guidelines” (see Figure 103 and Figure 103).

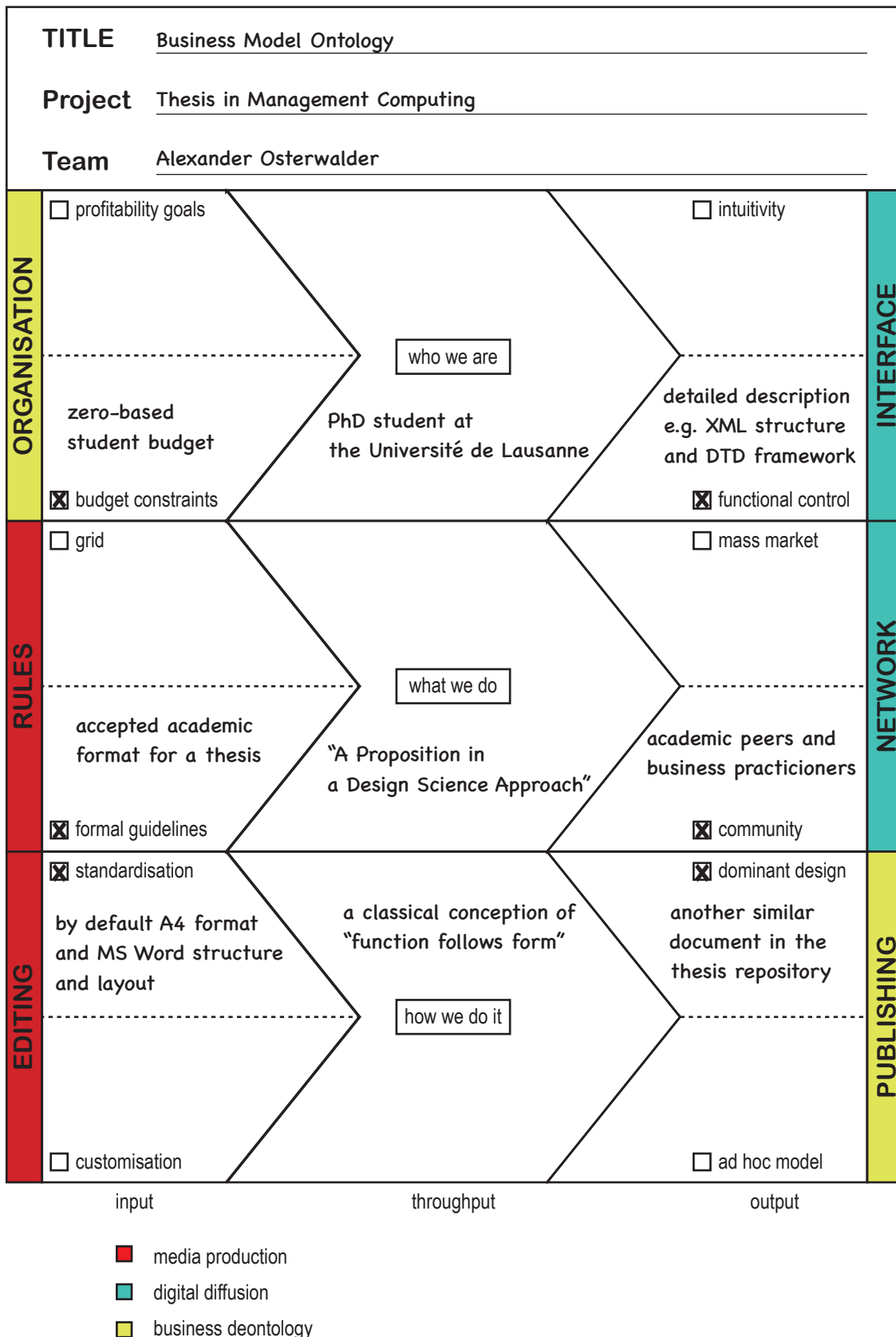


Figure 102. The publishing canvas for *Business Model Ontology*, CC BY-NC 4.0

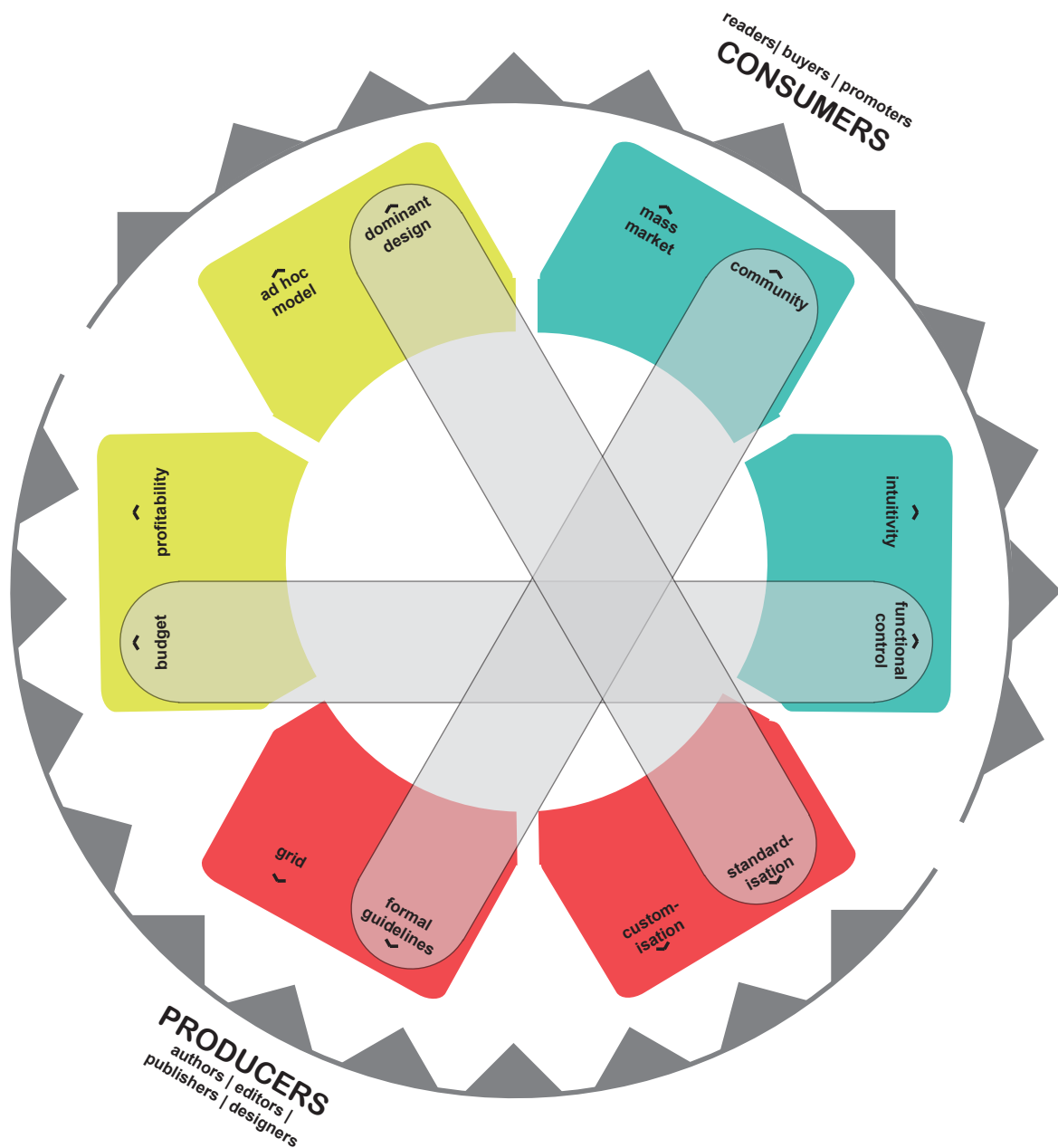


Figure 103. The PMC for the thesis *Business Model Ontology*, CC BY-NC 4.0

The contacts he has had with consultants and managers and the articles he wrote during and after his PhD (2001-2004) gained Osterwalder popularity with professionals, and his teaching encouraged him and helped simplify his innovative approach of business models into a canvas. This process led him to partner with his ex-PhD supervisor Pigneur, business consultants and designers to set up the Hub (an online platform of User Generated Content—UGC), for practitioners to contribute business cases and insight, and to co-write, edit, and design the book *Business Model Generation*¹⁹ which was released in 2009. Contrarily to the classical design

19 For a more detailed analysis of the editorial shift from the thesis to the book, please read my paper “A case of book design turned mass media: *Business Model Generation*” to be presented at the doctoral conference of the SFSIC of the 12^h-14th June 2019.

of the thesis, the book was designed according to a modern design approach of “form follows function”²⁰ and through an open innovation iterative cycle of sharing materials with the prospective readers and collecting their feedbacks (see Figure 104—aligned PMC: “ad hoc model-customisation”).

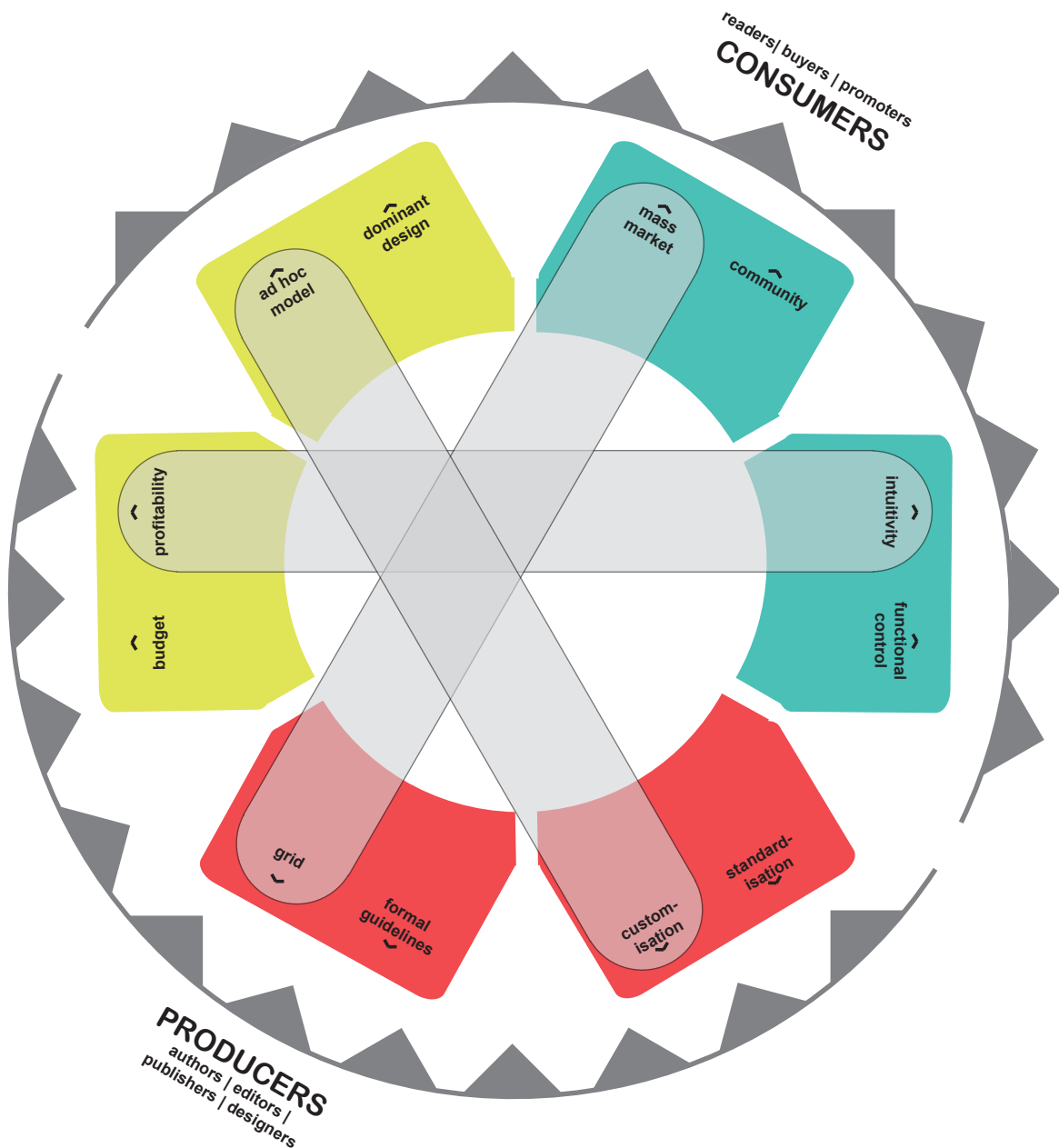


Figure 104. The PMC for the book *Business Model Generation*, CC BY-NC 4.0

The authors aspired to innovate in publishing as they had innovated on business models. They also wished to respond to the expressed needs of business practitioners to better understand

²⁰ The analysis of *This is Service Design Thinking* and *Business Model Generation* presented in my paper “An ontology of design thinking for book publishing and books” at the doctoral conference of the 4th July 2018 at Dicen-IDF would show the same PMC settings (fig. 9).

business models. In order to do so, they used a “visualization tool”, improved “communication” and “discussion quality” which translated into a canvas. This business model canvas itself was a pivotal element of “an innovative model” that the authors strived to create. It was made freely available online with a Creative Commons license and downloaded on a massive scale²¹. The overall transmedia strategy was to disseminate the basic tool (the canvas), to hook and lock the Hub members into a club model. Hence they became contributors to the model before they were users of it. They were charged a fee upfront in order to finance the book in advance (Figure 105—aligned PMC: “profitability-intuitivity”). The book was eventually sold as an “how to” handbook with business cases as a bonus (Figure 105—aligned PMC: “grid-mass market”). Subsequently, courses, workshops and masterclasses for practitioners were proposed, and companies were able to acquire premium services through the authors’ consultancy Strategyzer (see Figure 106). This approach illustrates what Bouquillion, Miège, & Moeglin (2013) call the “industrialisation of culture and the culturalisation of industry”^{22*}.

21 Strategyzer claims (website visited 3rd May 2019) that “Over 5 million people use our Business Model Canvas”.

22 This example is also a paradox of the “culture for amateurs”^{*} of the Web 2.0 supposedly built by “fans who became entrepreneurs”^{*} and derive an income for their activity (Bouquillion, Miège, & Moeglin, 2013) because, in this particular instance, the situation is reversed with *entrepreneurs who became fans* and instead were willing to pay to contribute UGC and provide feedback through the Hub online platform.

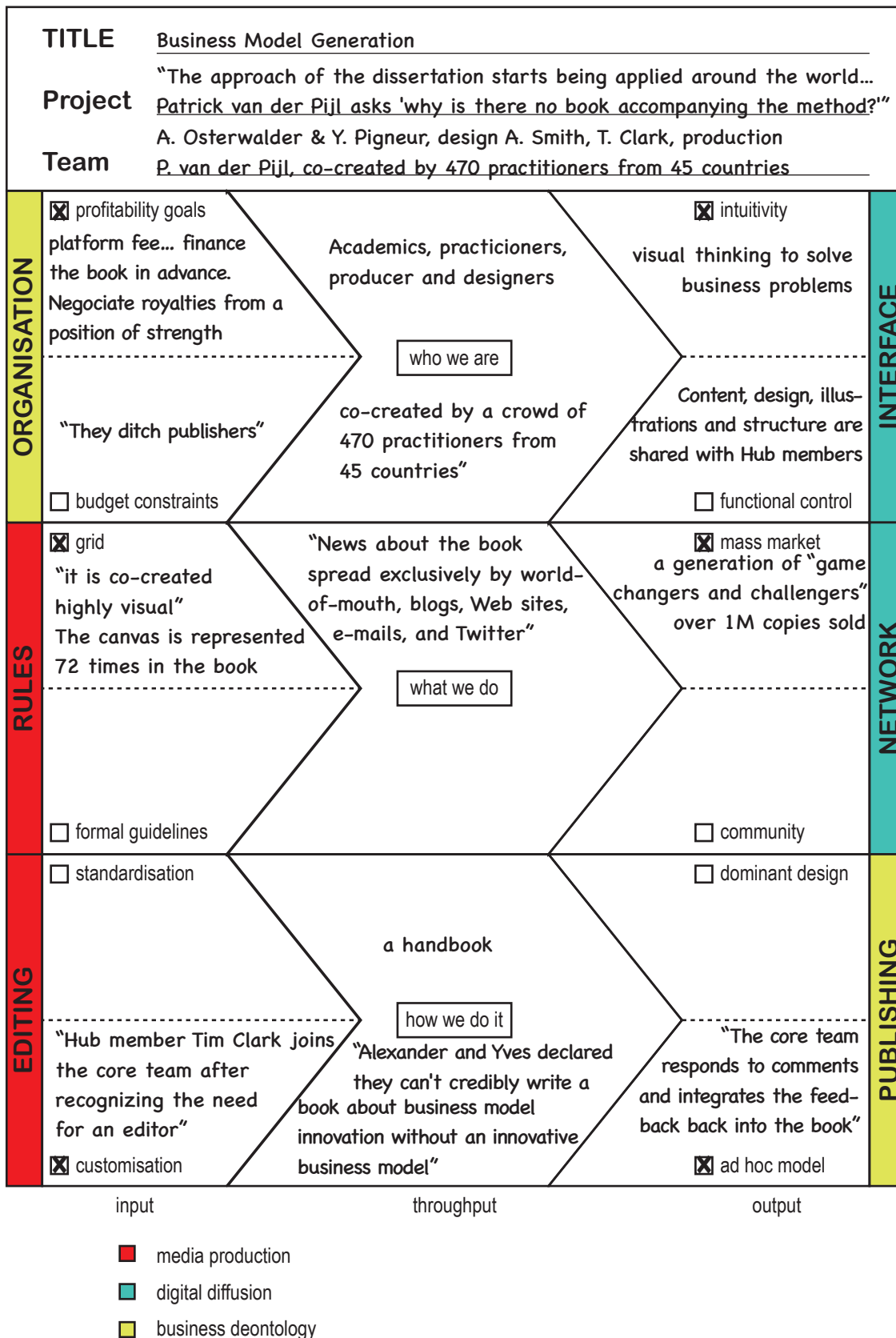


Figure 105. The publishing canvas for *Business Model Generation*, CC BY-NC 4.0

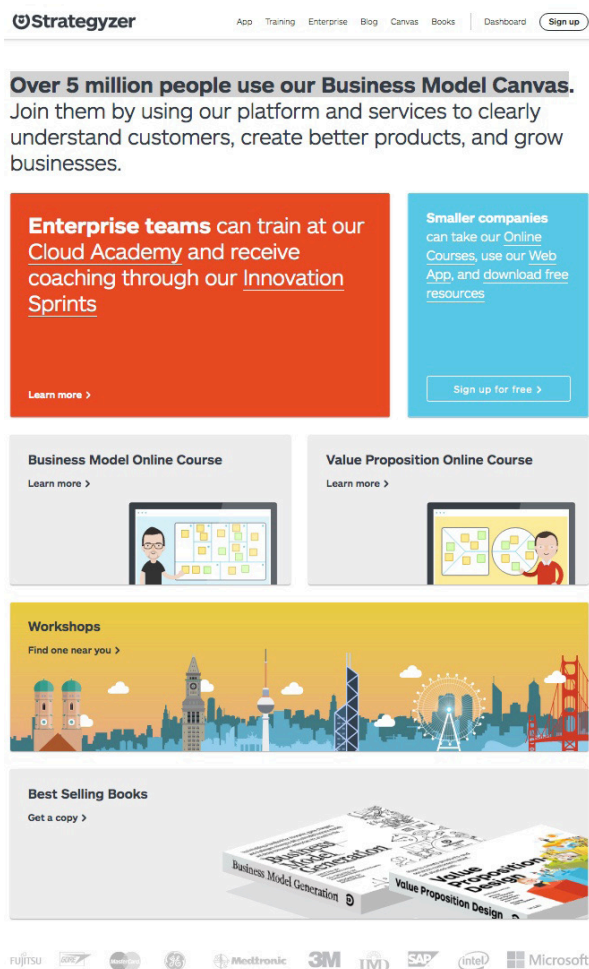


Figure 106. Strategyzer homepage (visited 3rd May 2019)

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6.2. Appendices

See Appendix 1

Chapter 16.

De-booking McLuhan

1. Massaging an essay into a visual book

Published in 1964, *Understanding media* was a product of McLuhan's influential thought and discursive imagination which, though difficult to read, became an unexpected bestseller. Producer Agel and designer Fiore were inspired by the concepts developed in the hardcover and decided to popularise them for a wider audience. In order to do so, they proposed an illustrated version of McLuhan's metaphors and aphorisms. Their irreverent approach went as far as maintaining a serendipitous typographical mistake as a pun in the title of *The Medium is the Massage*. In a way, this book was an attempt to make McLuhanism cool and to match a creative form with the author's original content.

I propose that this transformation process of an intellectual essay into an illustrated book can be analysed through Lévi-Strauss' dualistic vision of the world (tempered by Goody) and with McLuhan's dialectic between modernism and postmodernism. The whole endeavour is a paradox that could be summarised as typical designer's ambidextrous thinking for its authors, and as infotainment²³ for its intended readers. It can be argued that *The Massage* is a design project to collapse the form and the content into the unified "whole pattern" of a hybrid "non-book". This publishing experience is not about what a book is but about what can be done with a book and what a book does (i.e. its effect on the readers).

2. *Understanding Media*, an electric myth

McLuhan is concerned with "all forms of transport of goods and information [...] all technologies [as] extensions of our physical and nervous systems to increase power and speed". *Understanding Media* is a two-part book. There are seven chapters about general media notions (e.g. hot and cold, translators, creativity...) in the first part. The title of the first chapter "The Medium Is the Message" (see Figure 114) has become a famous aphorism although it still needs explaining more than fifty years after it was first formulated. McLuhan is more concerned with cognition than with intellection, more with the social impact on man (social selves²⁴) of conveying a message—he uses the metaphor of the nervous system—than with the intellectual processing of a content by the mind (private selves)—he does not refer to the human brain. Even though, toward the end of the book, he muses about the distant possibility of something that would

23 Infotainment is a portmanteau word that we associate with the *Bushidō* (Japanese "the way of warriors") aphorism "Light matters should be dealt with seriously. Serious matters should be dealt with lightly." (Yamamoto Tsunetomo, 1659-1719) It also refers to McLuhan's own admission that "his books constitute the process rather than the completed *product* of discovery".

24 Media of communication are "extensions, not of our private but of our social selves" (ibid.).

currently be referred to as Artificial Intelligence (AI)²⁵, most of his book is interspersed with organic metaphors²⁶. It is about how electric media became extensions of our nervous system, when mechanical media used to be merely extensions of our body²⁷. In other words, because of the contraction of space (i.e. “the global village”) and time (i.e. “nowness”) by electric media, they literally compressed “content”²⁸ and hence collapsed *object* and *sign* together in “an inclusive *gestalt*, not an analytic dissociation of senses and functions”.

Although there is no direct reference to Peirce in the book, neither in the body nor in the bibliography, I argue that his conception of media is better understood with the Peircean semiology of Object → Sign → Interpretant through a Material Medium. For example, “the electric light”: the *Object* is “the ‘content’ of any medium” (e.g. “the electric light is pure information [...] totally radical, pervasive and decentralized”) → the *Sign* is “these activities” (e.g. “the electric light”) → “that shapes and controls the scale and form of human association and action”—the *Interpretant*. In short McLuhan is concerned “with *effect* rather than *meaning*”. So was Peirce: for whom “the meaning lies [...] in the interpretation of the perception. [...] thinking *is* behavior.”²⁹

Part 2 of *Understanding Media* can be seen as a catalogue of twenty-six more specific chapters—each about a medium (e.g. roads, clothing, wheel, phonograph, television, weapons, etc.). There is, as such, no chapter about books (except for chapter 17 about the comics *MAD* addressed as a “Vestibule to TV”). However the book and its history are evoked in at least six chapters (“The written Word”, “Paper Routes”, “The Print”, “Comics”, “The Printed Word”, “The Typewriter”). I am focusing on these topics in relation to the purpose of my thesis. I have already emphasised that McLuhan considers media content as a system of boxes-within-boxes. In the case of printed publications, “the ‘content’ of writing or print is speech”. For Goody, after language, “the reduction of speech to graphic forms, in the development of writing” was—as

25 “Computers seem to ‘think’ [...] they can be made to simulate the process of consciousness, just as our global networks now begin to simulate the condition of our central nervous system”. (ibid.)

26 “If political and commercial institutions take on biological character by means of electric communications, it is also common now for biologists [...] to think of the physical organism as a communication network [...] electricity is organic in character and confirms the organic social bond by its technological use” (ibid.).

27 McLuhan mostly refers to artists and literary authors and not directly to scientific thinkers of his time (postwar America until the mid 60s). But he was immersed in the American culture and in academic circles and did not ignore the contemporary works on cybernetics, systems thinking and complexity. Proofs of that are the following excerpts: [cybernetics] “automatic involves ‘feedback’. That means introducing an information loop or circuit, where before there had been merely a one-way flow or mechanical sequence.”; [complexity—from objects to systems] “it is not possible to speak of atoms as pieces of matter”, “as *anything* becomes more complex, it becomes less specialized” (ibid.).

28 “The ‘content’ of any medium is always another medium [and] blinds us to the character of the medium” “no medium has its meaning or existence alone, but only in constant interplay with other media.” For example, stereo sound is “wrap-around” and it was “for music what cubism had been for painting”: “when a medium becomes a means of depth experience the old categories of ‘classical’ and ‘popular’ or of ‘highbrow’ and ‘lowbrow’ no longer obtain” because *depth* means “in interrelation”. (ibid.)

29 James Hoopes (ed.), *Writings on Semiotic by Charles Sanders Peirce*, 1991.

a “technology of the intellect”—the most important advance in the “means of communication” (see Table 9). It was not within McLuhan’s scope to stress this prehistorical breakthrough. Instead, he focused on medieval, modern, and postmodern history. For him, in the Middle Ages the “cool” manuscript tended toward “compressed forms of statement, aphoristic, and allegorical”. The student was an “editor-publisher” and the classroom tended to be a *scriptorium*. With Gutenberg came mechanisation, “division of labour and new marketing processes” and the book became “the first mass-produced commodity”. Subsequently, publishers have endeavoured to give the public what it wants, because they sensed that “their power is the *medium* and not in the *message*”. In cognitive terms, the book also became “the first teaching machine” a “hot” simplification and “‘spelling out’ of meanings”. Men became less involved because of the “detachment and noninvolvement” allowed by typography which turned the book into a “private confessional form”. Goody later concurred that the “process of conceptualisation” has encouraged the recognition of individuality³⁰.

Table 9. Lévi-Strauss’ dualistic view of the world³¹ in *La Pensée sauvage*, Goody, 1977.

Domesticated	Wild	References (1962)
“hot”	“cold”	309
modern	neolithic	24
science of the abstract	science of the concrete	3
scientific thought	mythical thought	35,44
scientific knowledge	magical thought	33
engineer(ing)	bricoleur(-age)	30
abstract thought	intuition/imagination/perception	24
using concepts	using signs	28
history	atemporality ; myths and rites	348, 47, 321

The distinction between hot and cold media is introduced by McLuhan in the second chapter of *Understanding the Media* (“Media Hot and Cold”) and he elaborates on it throughout the book (see Table 10). This is also a key anthropological distinction. According to Goody, it is one of Lévi-Strauss’ major concept in *La Pensée sauvage* (*The Savage Mind*). And although these authors seem to ignore each other by and large, an analogy can be drawn which defines the modern man similarly and versus the prehistorical man (Goody and Lévy-Strauss) and the postmodern man (McLuhan).

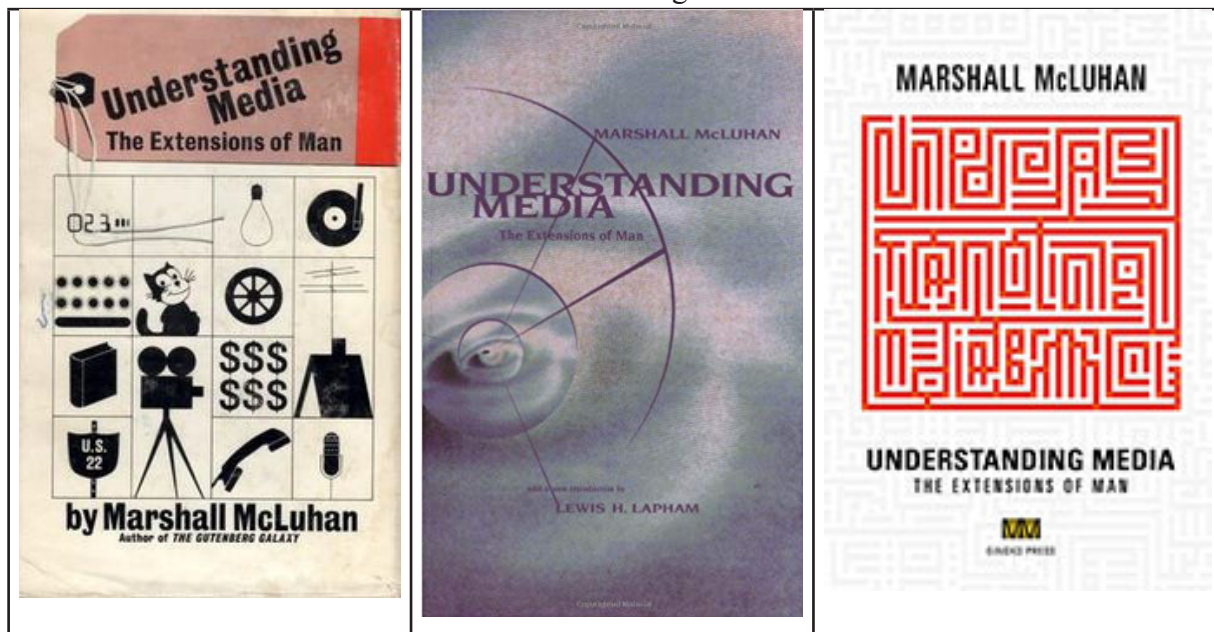
30 In the same manner that McLuhan is more interested in the medium than the content, he is also more interested with the reception of books than with their writing. He largely ignores the question of the authors and elaborates on the readers (and also, but to a lesser extent on the intermediaries—editors and publishers). His concept of media is difficult to reconcile with the Kantian concept of *representation* by which a work is thought of as immaterial, always “identical to itself whatever its printed forms”* (Chartier, 2015) and for which the proof of the personal rights of the writer on his text lies in his original handwritten manuscript.

31 “A dichotomy which becomes ‘wild’ (savage, *sauvage*) and domesticated (*domestiquée*) in [Lévi-Strauss’] own terminology [which] takes the following form, explicit or implicit” (Goody, 1977)

Table 10. McLuhan's dialectic formulated as a set of antonyms, Lapham, 1994.

PRINT—"the ascendancy of the printed world [since] Johann Gutenberg's invention of printing with moveable type"	ELECTRONIC MEDIA—the rise of the postmodern sensibility since "Thomas Edison's invention of the electric light"
visual	tactile
mechanical	organic
sequence	simultaneity
composition	improvisation
eye	ear
active	reactive
expansion	contraction
complete	incomplete
soliloquy	chorus
classification	pattern recognition
center	margin

Visually, the original book cover in a mosaic form³² (see Figure 107) conveyed coolness but the book content itself was unmistakably hot. More coherently, for the design of the covers of its two later editions (see Figure 108 and Figure 109) hot images were represented³³. Still, for McLuhan it must have been a paradox to write a book—which is by his own definition "hot"—to address the issue of media in the "cool" electric age.



32 A cool print medium is the press. It has been changed and shaped by the telegraph, the typewriter and the telephone (see chapters 25 to 27). As a result, it has taken a "mosaic form" and the reader of the mosaic "makes his own news, or just *is* his own news" (ibid.).

33 The cover of the MIT edition of 1994 is more coherent in terms of design as it precisely represents an eye and its extensions which is archetypal of the bookish culture. As designer Fiore wrote "the book is an extension of the eye" and "the rational man in our Western culture is a visual man" (in *The Medium is the Massage*, 1967).

Figure 107. original cover of <i>Understanding media</i> , 1964	Figure 108. cover of the 1994 edition of <i>Understanding media</i>	Figure 109. cover of the 2013 edition of <i>Understanding media</i>
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HOW TO MAKE *UNDERSTANDING MEDIA* COOL? Writing the book must have been a complex process for its author and I can testify that reading it was not a straightforward experience either. I would not go as far as the book reviews in *Time* which deemed McLuhan's books as "virtually unreadable by soporific syntax and mastodonian metaphors" but would agree with Neil Compton in *The Nation* that "the author's naturally discursive imagination" should have been tamed by "a healthy discipline" for the readers' sake. But, however I might evaluate his style, McLuhan's long-stated claim was that "his books constitute the process rather than the completed *product* of discovery" (Schnapp & Michaels, 2013).

For McLuhan, TV is the archetypical tactile postmodern medium and it transforms the book into something else; i.e. the paperback as "the book in 'cool' version" which is content-agnostic as it can accommodate "profound matters" and "froth" alike. Contrarily to manuscript—a cool medium—, with print—a hot medium—the private life of authors has become of the utmost interest to readers. Print "projects the author at the public". In a way authors of print books have themselves become cool media. McLuhan seems to have been a good example of this trend, as pointed in a review after the release of *The Medium is the Massage*: "McLuhan is becoming the medium" (Anthony W. Hodgkinson, *A V Communication Review*). Schnapp shared a similar view of him (the public figure) as an avatar of himself (the author) "as McLuhan moved out of the academic context into public view, he became interested in a whole series of iterations of himself as a public persona" (in Guffey, Michaels, & Schnapp, 2014). McLuhan thought of media not as "make-aware agents" but instead as "make-happen agents". It looks just like what media such as conferences and TV made to McLuhan as a person and to *Understanding Media* as a book. They made them cool.

How could a book be designed "cool" upfront? If this is a recipe for success, what are the ingredients, how should they be prepared and what should the end result feel like? McLuhan lists two kinds of cool printed books: comics³⁴ and paperbacks. Another cool medium is the photograph. It "extends and multiplies the human image to the proportions of mass-produced merchandise" in a major step "from the age of Typographic Man to the age of Graphic Man". In a cool book "the fragmented specialities of form and function" tend to be eliminated. Hence, formally, automation is an heir of cubism³⁵. The book which is traditionally bound to provide a "point of view" can be made cool by design if it provided a cubist multifaceted perspective.

In design terms, the "sharp cleavage between form and content" of the book medium should implode and collapse into a "whole pattern, of form and function as a unity". Since everybody experiences far more than he understands, it is "experience, rather than understanding, that

34 Comics "being low in definition, are a highly participational form of expression, perfectly adapted to the mosaic form of the newspaper" (ibid.).

35 For E. H. Gombrich in *Art and Illusion*, cubism is the most radical attempt to "substitute all facets of an object simultaneously for the 'point of view' or facet of perspective illusion". (ibid.)

influences behavior”. After an age of enlightenment and an age of mechanisation, the electric age of automation is cool—literally an age of *illumination*. As “light is at once energy and information”, the “all-at-once” electric automation “unites production, consumption, and learning” and “ends the old dichotomies between culture and technology, between art and commerce, and between work and leisure.” As such, it is an age of *entertainment* but “it does not end the world of learning” and it paradoxically “makes liberal education mandatory” and renders the departmentalization of knowledge in schools and universities strange.

3. How did *The Medium is the Massage* de-book *Understanding Media*?

Publicist and publisher Jerome Agel teamed up with graphic designer Quentin Fiore to approach McLuhan with a draft of a co-authorship contract by which “they’ll be doing all the work; he’ll be approving”. Their original concept was of “a McLuhan’s book for children”, “a ‘non-book’ for the masses” (Michaels, in Schnapp & Michaels, 2013). Upon release, Edmind Fuller’s book review in the *Wall Street Journal* captured the feeling that “*The Medium is the Massage* is a heroic effort to de-book the core ideas of *Understanding Media*”. McLuhan was keen to let Agel and Fiore develop and implement the concept, but publishers were less enthusiastic. Consequently, the pair had to work with a limited budget on a tight schedule. They had to make do in a creative way with what was available to them, in a typical can-do bricolage attitude.

Agel and Fiore’s work was described as summarising and adapting the original concepts in images “whittling down McLuhan’s thought to a terse, visually driven argument”. Fiore used a toolbox, “an inventory of effects” to design the book (as the subtitle of *The Medium is the Massage* suggests). What he did not have in terms of budget, he had to invent in order to produce the desired effects. It also fitted their self-referencing approach and Fiore cast himself (see caption in Figure 112) or part of his body (e.g. his fingers in Figure 110) on several occasions. McLuhan, a man of the book himself, referred to cubism as an artistic movement to illustrate automation. But cubism was a movement situated in post-World War 1 Europe and the design of the book merely hints at it through the technique of collage. It did not replicate it in dull mannerism. Instead, a graphic design challenge was to identify what American movement contemporary of the 60s could be used to illustrate nowness. Pop Art and its reference to comics and industrial pointillism (in the form of low definition pixellation) was an ideal candidate for Fiore (see Figure 111). And its effect is potent and unmistakable.

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Figure 110. Double spread, pp. 34-35, in McLuhan & Fiore, 1967.

Figure 111. Double spread, pp. 110-111, in McLuhan & Fiore, 1967.

Another graphic design stance was that, even though they are “interwoven”, images and words should be approached “on their own terms” (Schnapp & Michaels, 2013). Images are not illustration of the text. In a total upheaval of the text-only *Understanding Media*, images are often given preeminence in *The Medium is the Massage*. Another major shift was operated from McLuhan’s authorial point of view to the reader’s perspective of “you” (see Figure 112). The new graphic book is based on an elementary form that Fiore refers to as “patches” (i.e. “local verbal-visual suite”) and it is composed with “eclecticism as a design strategy” (Heller in Schnapp & Michaels, 2012).

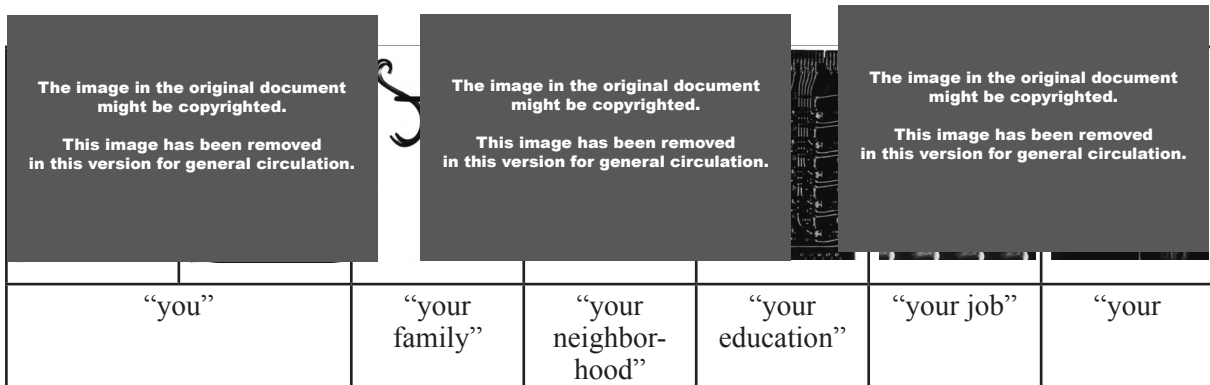


Figure 112. Subsequent “patches” in odd pages, pp. 11-23 in McLuhan & Fiore, 1967.

Guffey, Michaels, & Schnapp gave an account (2013 & 2014) of the presentation of *The Medium is the Massage* as “a collide-o-scopic journey through the Marshall McLuhan-looking glass”. Not only was it a hybrid “part book, part magazine, part storyboard” but it is also not only part Fiore and another part McLuhan. It is instead “Fiore’s design work collapsing or imploding McLuhan’s work”. Jerome Agel was not even mentioned on the cover of the first edition, it was only upon later that it appeared it was “produced by” him. Fiore described the book as “films between covers” that goes beyond comics storyboards as they are “kinetically composed” for a “book-as-performance”.

offt plaid on the codes of the protest culture and fake demonstrations were staged against the “controversial” album. In order to attract maximum attention young women in miniskirts were hired to walk up and down sidewalks in Los Angeles and New York. As a result, the *New York Times* covered the “demonstration”. Within six months of its publication, the book was already in its eleventh printing and approaching sales of half a million copies. A subsequent and less bold attempt at popularising another McLuhan book proved less successful.

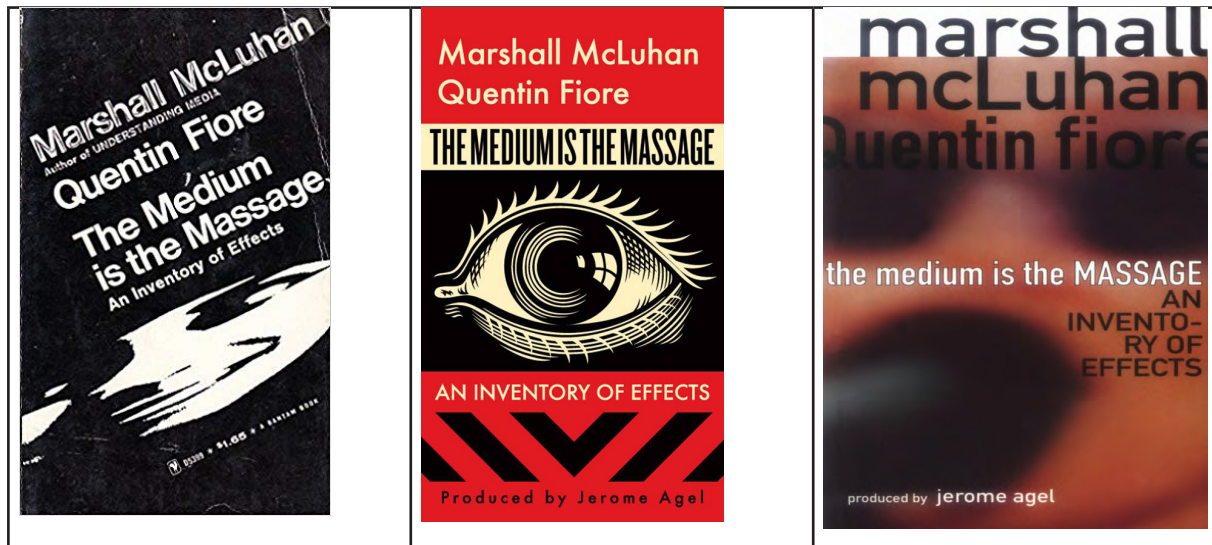


Figure 113. Subsequent covers of *The Medium is the Massage*.

In a nutshell, the elements of a cool book in a McLuhanesque perspective are as follows: it should read as a comic, be materialised as paperback, and include photographs; it should be entertaining—its design should be de-fragmented and experiential. The title given to the book that collapsed *Understanding Media* became, by mischievous typographic accident (another definition of serendipity), *The Medium is the Massage* (see Figure 113, Figure 114 and Figure 115).

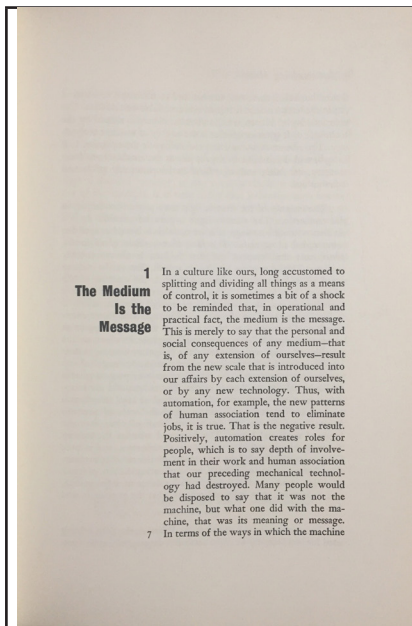


Figure 114. Chapter 1 “The Medium Is the Message”, p. 7 in McLuhan, 1964



Figure 115. Double spread “...the message?”, pp. 4-5 in McLuhan & Fiore, 1967

HOW COULD SEMIOTICS COPE WITH MEDIA? AS Peirce noticed, and it was seminal for the development of his semiologic system, men can not communicate immediately from mind to mind (telepathy has not been proven). Thus, men need media. In this sense media are “The Extensions of Man” (as McLuhan expressed in the subtitle of *Understanding Media*). In Table 11 below it can also be seen that the spirit *needs* either media or body to communicate.

Table 11. Semiotics of media, Fig. 2 “Homologations entre pratique nue et pratique outillée” in Badir, 2007.

Practice		Media artefact	
naked	with tool	semiotized	semiotizing
Organ	Instrument	[e.g. book] records instructions	[e.g. computer] develops functionalities (functions of functions)
Body	Machine	[e.g. TV] functions	
Spirit	Media	↑ →	↓ ←

Analysed with Badir’s semiotics of media, the McLuhan book *Understanding Media* is a semi-otized medium artefact. For its author it was “hot” and an “extension of man”, and—in semi-otic terms—as a medium it is a tool and more precisely an “instrument”. For Fiore and Agel the design of *The Medium is the Message* was “kinetically composed” and the intended result is a “book-as-performance”. In other words, for its authors this book performs. As the verbs “to perform” and “to function” are synonyms, we could logically infer that this book was—in semi-otic terms—designed to function. It would then paradoxically induce that what appears to be a book

(and thus an instrument) is a “machine” by design. In McLuhan’s terms it would mean that *The Medium is the Massage* is a “cool” medium (following the same line of thoughts by which he had already explicitly wrote that comics are cool). In summary, books are a versatile medium by design and can accommodate a level of complexity and performativity.

For semiotician Sémir Badir, media are often versatile in terms of the types of contents they accommodate (e.g. artistic, scientific, pedagogical, etc.). The dialogic principle applies to works which are independent and, yet at the same time, always depend on a medium.

4. PMC: budget constraint as a spur to innovate

Fiore and Agel’s production and design approach of McLuhan’s writings was original and yet consistent. Transforming the rather traditional structure and the text-only content of the original book into a cubist “collide-o-scopic-journey” based on pop culture styled “patches” was novel. It was also quite unorthodox not to involve McLuhan in the creation process and to translate his metaphors into actual images—to hijack McLuhan’s content with his consent. But in a certain manner it was consistent to adapt the original hardback high-brow bookish content into a somehow more popular softcover illustrated version. In this respect, this process is close to adapting a thesis into an illustrated book, for example the *BMO* to the *BMG*, and the PMC reflects this similarity. Where the PMC is both different from the *BMG* and misaligned (see Figure 116 & Figure 117), it is on the entrepreneuring-ergonomic interface axis. Initially, Agel was confident that he would persuade publishers to invest in their book project, but they could not be convinced. As a result, Fiore and Agel had to work with a limited budget but could not compromise on their pretence to deliver an intuitive UX. So, they had to make do, find innovative ways and resort to DIY.

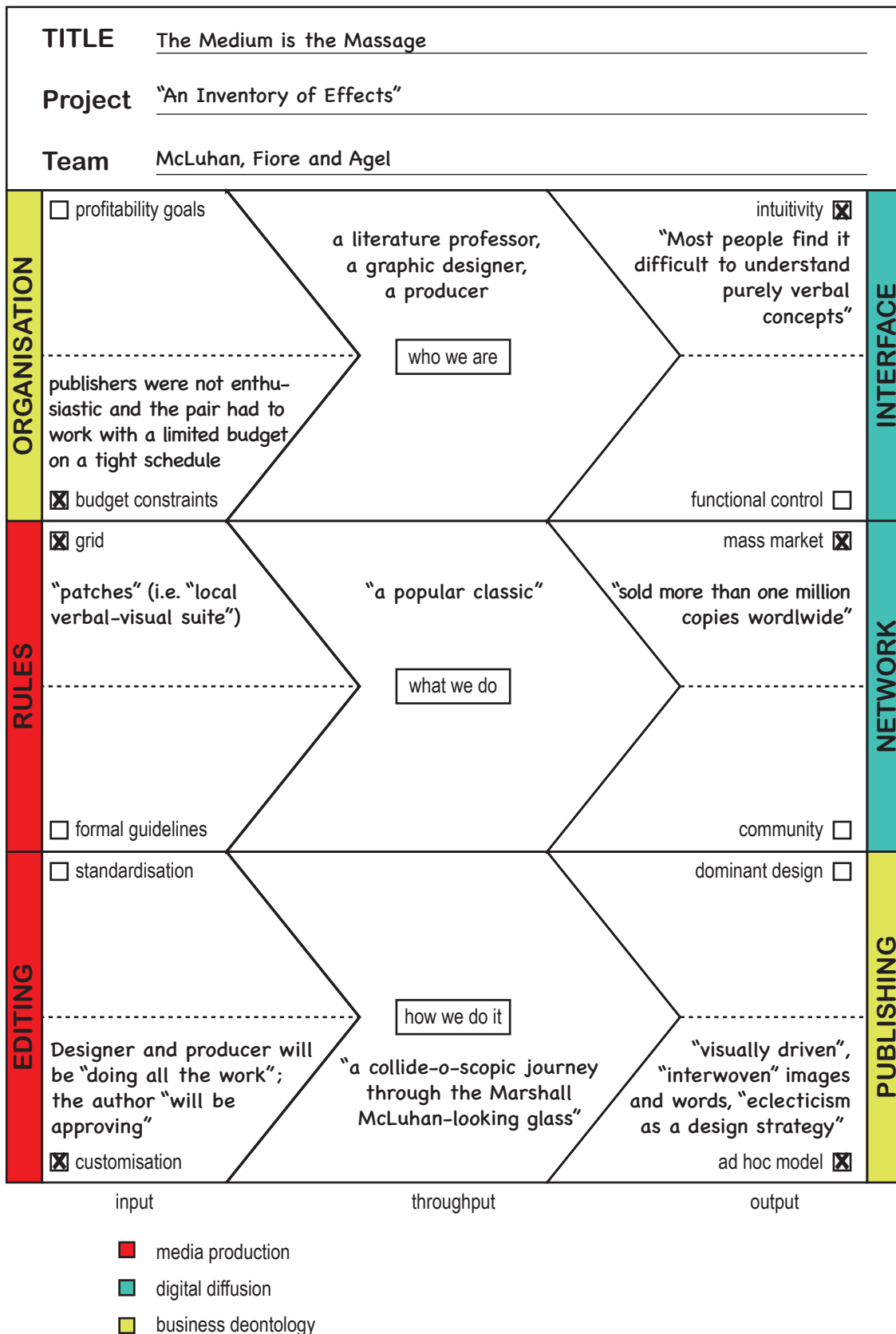


Figure 116. The publishing canvas for *The Medium is the Massage*, CC BY-NC 4.0

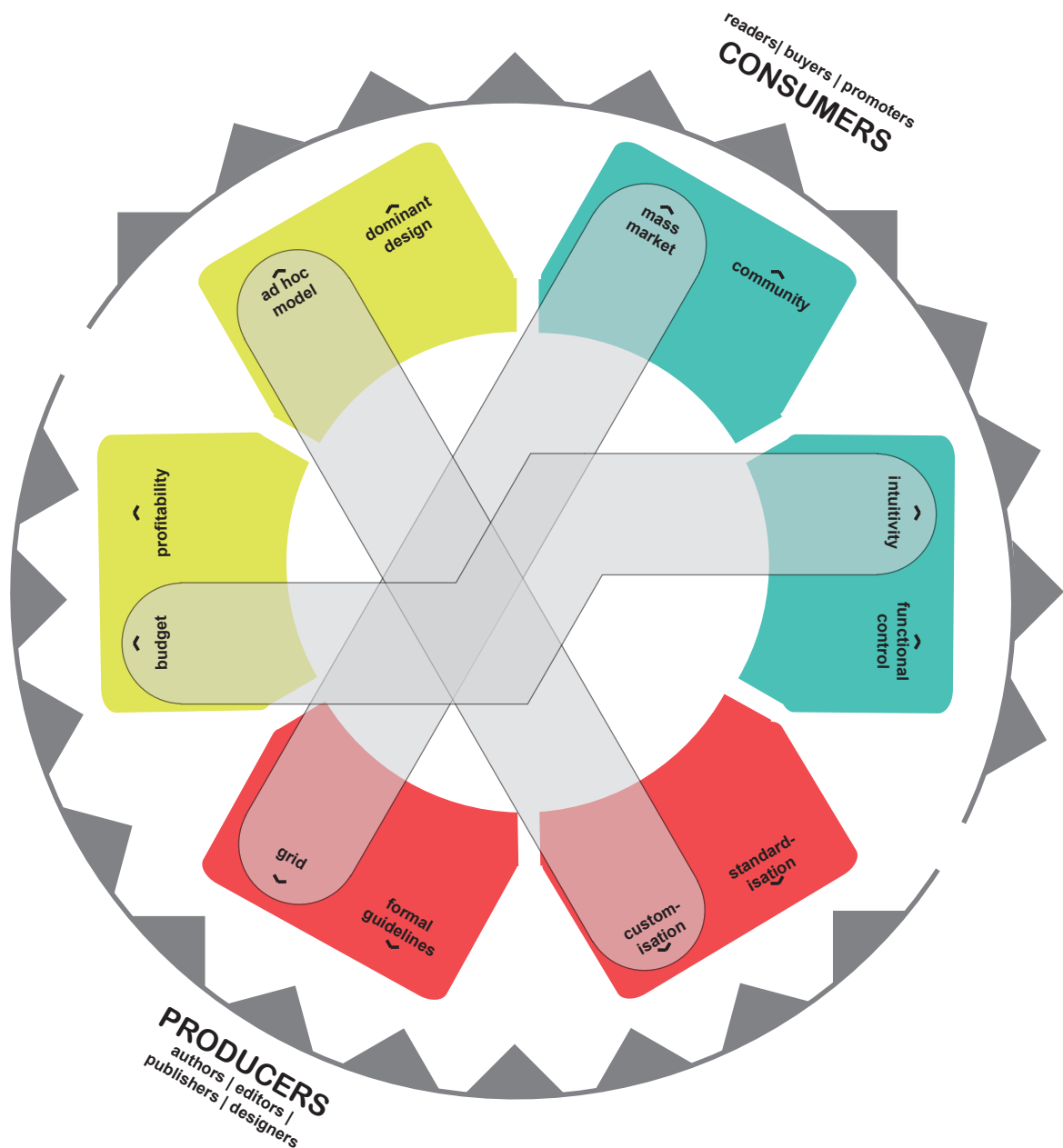


Figure 117. The PMC for *The Medium is the Massage*, CC BY-NC 4.0

5. Afterthoughts on media, and offsprings of McLuhan

First was McLuhan's *Understanding media*. Second was Fiore and Agel's *The Medium is the Massage*. Third, almost fifty years later, *The Electric Information Age Book* is an account and a study of *The Medium is the Massage* by academics Schnapp and Adams published in the "Inventory Books" series. The experience of reading *The Electric Information Age Book* enhances the understanding of *The Medium is the Massage*. For instance, the "frames" (pp. 76-83) are comments-as-captions (Figure 118 right) of pages in the original book. At closer inspection (I had originally missed it) the thorough reader might see that the original pages of *The Medium is the Massage* are actually reproduced in the background of the blue printed pages. They can not really be seen but merely perceived as they are printed as faint watermarks. The captions

are better read with both books opened in front of the reader. The reading experience is akin to using a smartphone application while reading a book to augment it with a layer of superimposed material. It actually looks like AR with a print book superimposed on another, instead of a digital device (generally a smartphone) superimposed on a p-book.

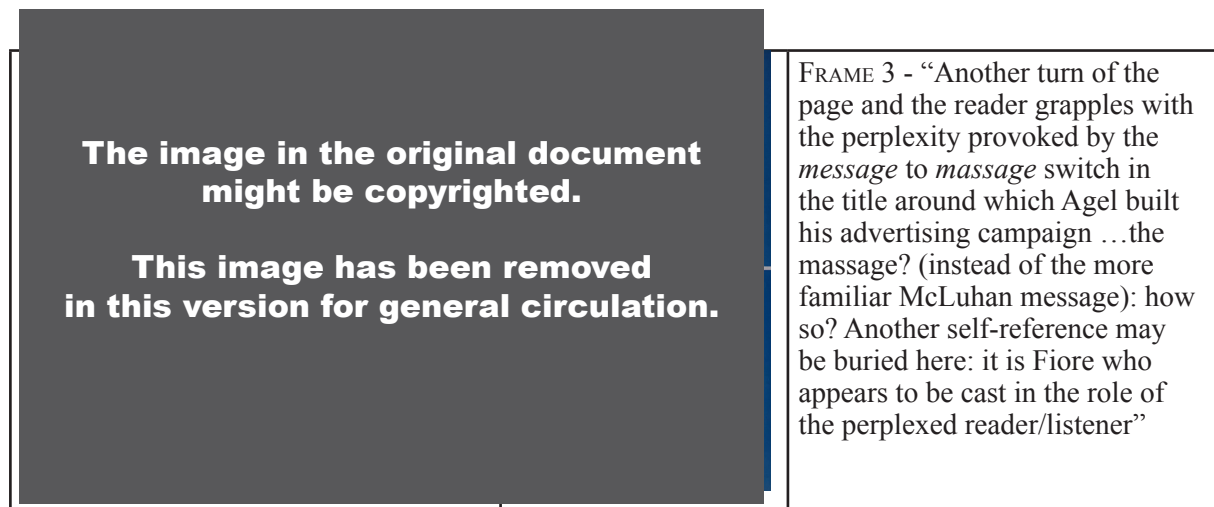


Figure 118. [left] “the e/a switch”, pp. 66-67 [right] Frames 1 and 3, description, p. 76 in Schnapp & Michaels, 2012.

Fiore had enacted “the designer as author” for *The Medium is the Massage* (a combination of the author-designer and of the editor-designer in the KDT). For its author-editors, *The Electric Information Age Book* is “simultaneously a work of new research, a theoretical statement, and itself a visual artifact”. Blauvelt, Schnapp and Michaels undertook the exploration of publishing itself and enacted “the designer as publisher”. Their account is that the design and writing process were intertwined as they “wrote to the design and designed to the writing” via drafts and sketches. By their own admission, it gave them the feeling of “two musicians jamming out a composition”. They even went one step further in the music metaphor, taking it literally and forming a band which released a limited-edition vinyl LP and performing live. They also had a custom bag produced to package the book and LP. The overall intent being to endow the book with “a multichannel existence and have some fun in the process”.

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Chapter 17.

“Unflattening” and “Understanding Comics”

1. Comics thinking as visual knowledge design

These two comics can be considered together because, even though their graphic styles are visibly different, they belong to the same rather trivial form of serious comics (almost a contradiction in terms) and deal with similar complex topics (comics thinking and visual thinking) which are of particular interest for this doctoral dissertation. Also, they interweave what they are discussing with how they discuss it in a typical designerly thinking of form and content. Both authors take a political stance that they, as intellectuals and (comics) artists, should make their work pleasant and understandable to people who work and whose little idle time they can spare to reading should at the same time be enjoyable and knowledgeable. Comics fit the bill because they are visual, and visual apprehension takes less effort than text comprehension. But comics narrative is also enjoyable because it offers a particular mode of storytelling—between passively watching animated movies and actively reading books—with their own blend of rhetoric and delinearisation based on frames (topic units), cartooning (style) and diagrams (graphic representations).

2. Two reflexive comic books

In his “introduction”, cartoonist and comics theorist Scott McCloud lets his avatar (his comics-self character) describe his work as a “sort of a *comic book* about *comics*”. It consists of nine chapters of unequal length. “Setting the records straight” is a definition of comics, a short illustrated history (a history of comics in general and the author’s story). Four more chapters delve into technical considerations such as “The vocabulary of comics”, “Blood in the gutter”, “Time frames”, “A word about color”. More general issues are wrapped up in two chapters: storytelling—“Show and tell”, and medium—“The six steps” (see Fig. 43). The last chapter concludes with “Putting it all together”.

Nick Sousanis decided to present his doctoral dissertation (in education) as “132 comics pages along with references”. *Unflattening* (2014) is “a metaphorical argument for the importance of visual thinking in teaching and learning”. Images and text are connected in nonlinear fashion because “the form itself embodies the content”. The author addressed the issue of interdisciplinarity through the metaphor of *perspective* (“an insurrection against the fixed viewpoint”). He considered “composition as a whole experience” and used “the collage-like capacity of comics”. It refers to composition with Art Spiegelman’s term of “architectonics” and highlights the connection between comics and architecture, and—through architecture—establishes a shortcut connecting comics and design. An iterative process of addressing aesthetic concerns prompted him to doing more research, and it pushed him to pursue new images. He found that

comics are not only a means of presenting serious inquiry, but also that they serve as a powerful expansive “thoughtspace”.

Both serious comics are connected in several ways and their authors insist on weaving and interrelationships. What they discuss (comics on one hand and perspective on the other) is interwoven with how they discuss it (comics for McCloud and collage-like composition for Sousanis).

3. Storytelling with comics

Each in their own style, both comic artists resort to the same two storytelling processes of rhetorics and delinearisation.

3.1. What is comics rhetoric?

Rhetoric has many affinities with typographic design—it can be superficial, merely decorative and insincere, or it can represent the marshalling of practical techniques of clear communication. [...] a five-part system in classical rhetoric—*elocutio*, or style. Leaving aside the two minor stages, *memoria* (memory) and *pronunciato* (delivery), the three main stages were *inventio* (invention), *dispositio* (arrangement) and *elocutio* (style) (Waller, 1987)

Comics authors like McCloud and Sousanis create their own reflexive comic books like *Understanding Comics* and *Unflattening* or are solicited to co-author other serious publications (e.g. an user manual for Google and an article in *Nature*). Even when co-authoring, they are not willing to be considered as mere illustrators—who are handed text to which they would then add pictures—but instead they insist on taking part in a collaborative creative process. Both authors adapt their own style of rhetoric to the genre of publication they are commissioned to co-create (e.g. advertorial user manual and scientific article).

In his comics, McCloud features an avatar of himself as a character and a narrator who interacts with a virtual environment (see Figure 122, Figure 127, Figure 128, Figure 129, Figure 130). When he was commissioned by Google to present and explain how to use their internet browser Chrome (see Figure 121), in a similar manner he sketched members of the development team and staged them in a virtual metaphorical environment to create a kind of augmented reality. The process of characterisation and of letting characters navigate a virtual environment is a potent metaphor with which real people who navigate the Internet can easily associate themselves. But obviously Google’s intention is not only to let people know how to use Chrome. It is also to convince them to use it. The storytelling has to be convincing, there has to be an underlying call to action.

Designing convincing storytelling is another way to describe rhetoric. Rhetoric plays at two levels. At the higher level of convincing people to read the story, promises are made that it gives the reader a vantage point of view about Chrome “behind the project” and that the story is going

to be easy to understand thanks to the “clear-line”³⁶ style. It is also enjoyable to read because it is told in the fun form of comics by a famous talented author. This is a rhetoric sandwich of two slices of emotion around a rational core: the privilege to join the team as an insider / the clarity of the explanations / the fun to read a good comic. At the lower level of the episodes of the story, rhetoric plays as well. These successive stories are told with a similar three-step structure: 1. what is the problem? 2. how to solve the problem; 3. description of the solution (e.g. Figure 121).

Contrarily to McCloud’s approach, for Sousanis (who was approached by *Nature* to create a comic on climate change and the history of climate meetings) “drawing people sitting at meetings and depicting either my co-author or myself as visible narrators was the wrong way to go about this”. I will not elaborate on the higher rhetorical level of why people should read *Nature* because it is treated in the case study about this journal and *Science* (see Chapter 21). I shall focus on the lower rhetorical level of how to tell a convincing story in a comics form as a *Nature* article. For Sousanis, *Nature*’s editorial, his science journalist co-author and himself should make a collaborative effort to inform and bring people into these important conversations not “by dumbing the work down”. Instead, the end result shows that the story unfolds in three steps. It starts with dramatisation, then proceeds to explaining the discussion as a negotiation, and closes with an outcome (see Figure 122).

In short, these two examples, even though McCloud’s and Sousanis’ styles and their storytelling structures differ, are structured according to a similar rhetoric model. As reported by Waller in his 1987 PhD dissertation, linguist Gray had studied a corpus of popular science writing and found that their rhetoric was based on a problem-solution pattern by reference to the “formulaic sequence” (situation-problem-solution-result-evaluation). Our two examples tend to belong to the genre of popular science and unsurprisingly conform to this same pattern.

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36 “The Belgian ‘clear-line’ style of Hergé’s *Tintin* combines very *iconic* characters with unusually realistic backgrounds. This combination allows readers to *mask* themselves in a character and safely enter a sensually stimulating world.” (pp. 42-42, McCloud, 1994)

Figure 119. Rethoric comics storytelling in McCloud & Google Chrome Team, 2008	Figure 120. Rethoric comics storytelling in Monastersky & Sousanis, 2015.
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[1. *Problem*] “Something bad could be running” [2. *how to*] “you close it. It’s gone” [3. *solution*] “security model which has three levels” in Figure 119.

[1. *Dramatisation*] “Swelling oceans would be a major problem because half of humanity inhabits coastal regions [...] the Rio Treaty was clearly not enough” [2. *negotiation*] “nations gathered in 1995 in Berlin to negotiate” [3. *outcome*] “Angela Merkel brokered a deal” in Figure 120.

3.2. What is comics delinearisation?

Another feature of comics storytelling (beyond rhetoric) is that it can distort the three spacial dimensions, plus it can also play with the fourth dimension of time (it can distort its traditional linear flow). Rhetoric in comic books, or articles, can play at two levels: the higher level of the whole publication itself (*the thoughtspace*) of the story (why read it?), and a lower level of successive frames (*the stories*) which is more or less associated with a page, a double page spread, or a short series of pages (what does it tell?). In addition, for Sousanis each page actually needs to be considered as a whole unit (contrarily to prose document which can stop in midthought and continue on the next page, comics can not). This core subunit is the frame (*the work space*) which Sousanis also describes as “the panel”. Authors should be concerned “not just for what goes in the panels”, but also with the context (“where they are and what they’re next to”).

At this third basic level of the panel, the reader’s and the author’s imaginations interact (author’s intention—what does the text say and what does the image show? / reader’s perception—what do I read and see?). Complex spatial issues can be expressed—as fractal or boxes-within-boxes (see Figure 121)—as well as complex time issues such as nonlinearity—as frames-within-frame displayed in a spiral or circular format (see Figure 122). While rhetoric storytelling was playing with people’s rationality and their emotion, complex storytelling is stimulating their imagination and is more speculative (“is that *necessary*?”, McCloud, 1994). Complex images would be the comics equivalent of the typographic suspension points: a lapse that allows the mind to pause and wonder; a realisation that time flows in an objective manner... but it is also subject to our subjective appreciation (contrarily to rests in music which are marked by different symbols according to how long the silence should last, suspension points do not indicate the length of the pause and there is no indication of how long a frame takes to read). Subjective time is an important issue which is defined in the *Merriam-Webster Unabridged Dictionary* as “the subjective feeling of duration”, also called “experiential time, private time”. It refers to what Drucker calls *capta* and it is also worth mentioning that time perception is a field of study within psychology, cognitive linguistics and neuroscience.

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Figure 121. Fractal space and boxes-within-boxes		Figure 122. Nonlinear time	
“frames [...] are work spaces to blend ideas [...] dimensions curled up within us accessible only through imagination” (p. 96).		“Time runs in one direction [...] <i>yet</i> , there are brief instances when things do swirl back against the flow”.	“Comics readers are also conditioned by other media [...] to expect <i>linear progression</i> [...]. But is that <i>necessary</i> ? (p. 106)
Sousanis, 2015.		McCloud, 1994.	

For Sousanis creating comics is also a way to conduct research because it is opening authors to “the making of unforeseen connections” and “weaving together diverse ways of seeing drawn from science, philosophy, art, literature and mythology”. It is an actual generative cycle of doing more research to address aesthetic concerns which takes the author to places he would not have considered if he were working only in text. Comics serve as a powerful thoughtspace to help expand the research process. Comics author-cum-researcher Sousanis draws “to generate ideas” in order to extend his thinking. In a way that resonates with his colleague Schuiten who draws observation sketches of *Machines à dessiner* in order to study them carefully. It is also a common practice of designers reported by Cross as “the exploration of problem-and-solution together, using ‘languages’ of drawing” (1991). It is a kind of *poiësis* (i.e. for Morin *poiësis* is creative production—as opposed to reproduction—of a model or a program). In the same manner as Cross referred to the “*languages* of drawing” (italics added), Sousanis explains that “making science and other complex subject matter into comics is not a simple matter of *translation*” (italics added). Designer and editor of “Inventory Books” Adam Michaels also described his series as an “active synthesis of editing and design [...] to *translate* academic research into a form that’s accessible and enjoyable” (italics added). Cross, Sousanis and Michaels do not consider literal translations of thoughts into images, instead they should be understood as contextual adaptations (which can include text and images interwoven; e.g. see Figure 123 & Figure 124).

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<p>Figure 123. “distinct vantage points [...] actively interweaving multiple strand of thought [...] allow the complex to remain complex [...] a way of thinking [...] reconceived as an interconnected inclusive network” (p. 37, <i>ibid.</i> Sousanis, 2015).</p>	<p>Figure 124. “two distinct kinds of awareness—the sequential and simultaneous—correspond [...] to the left and right hemispheres of the brain [...] to bring two distinct types of attention [...] at the same time” (p. 63, <i>ibid.</i> Sousanis, 2015).</p>
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The use of the concept of “weaving” by Sousanis is a reminder of Morin’s etymological definition of complexity (as *complexus* “that which is woven together”). In a typical designerly way of thinking (i.e. form and function interwoven together) complexity is a common feature addressed by McCloud (“simple elements can combine in complex ways”, p. 45) and Sousanis (“in comics [...] we have a form [...] to capture and convey our thoughts, in all their tangled complexity”, p. 67). For them, comics is an apt form to deal with complexity, both from the author’s and reader’s point of view. Thinking through comics and thinking with comics could be more adequately be called *comics thinking*. And comics thinking would be similar to design thinking. For Sousanis, it is a “kind of spatialized thinking” that goes beyond *adding* illustrations to existing text, even further than a *combination* of prose and illustration, but instead is better thought of as a *blending* of poetry (see reference to Morin’s *poïesis*) and graphic design. It is inspired by data visualization and could be referred to as dependent beauty for it is aesthetics *simultaneously* (see Figure 124 “at the same time”) blended with a topic or the rhetorical process of stimulating the reader’s emotional (right hemisphere) and rational (left hemisphere) of the brain.

3.3. Comics thinking is similar to design thinking

It does not have to be the deed of polymaths on their own. Even talented comics artists McCloud and Sousanis work in teams (e.g. their publications for Google and *Nature*). In the world of comics it is common that illustrators, editors, scriptwriters, colourists, inkers work together as a team, as different professionals work together in project-based design thinking. It can also be the case that serial comics and mangas are produced not by individuals but by studios, as is also the case in the world of design (e.g. renowned studios like Ideo or Frog). But comics and design projects can not be created and implemented satisfactorily without talented (or at least skilled) comic artists and designers. Thus, the fuss about design thinking without designers is as absurd as comics thinking without comic artists.

4. Comics thinking

Comics thinking is visual and it is also a political statement. This stance is similar to designing for the people or people-oriented design.

4.1. What is visual thinking?

Visual thinking could be defined as a form of expression and McCloud’s pyramid (see Figure 125) can be used as a palette and an analytical tool. The bottom left (“beauty of nature”) and upper (“beauty of art”) angles of the triangle could be associated with Kant’s free beauty. The bottom right angle (“beauty of ideas”) is more akin to dependent beauty. My definition of design thinking would draw on the “conceptual edge” (right side) and the “representational edge” (base of the pyramid) to make sense and impact people’s behaviour. Since the rational man is a visual man (see “The users are rational and therefore visual” in Chapter 8) because he acknowledges both his intellectual (rational) and perceptual (emotional) selves and does not irrationally think he is only rational. He is a man concerned with design and the science of the artificial (Simon). Even though it is not my purpose in this work to do so, I should mention that the left side of the pyramid (“the retinal edge”) is more about arts (“beauty of art” and “visual arts”) and how they can affect our senses and modify our vision of aesthetics.

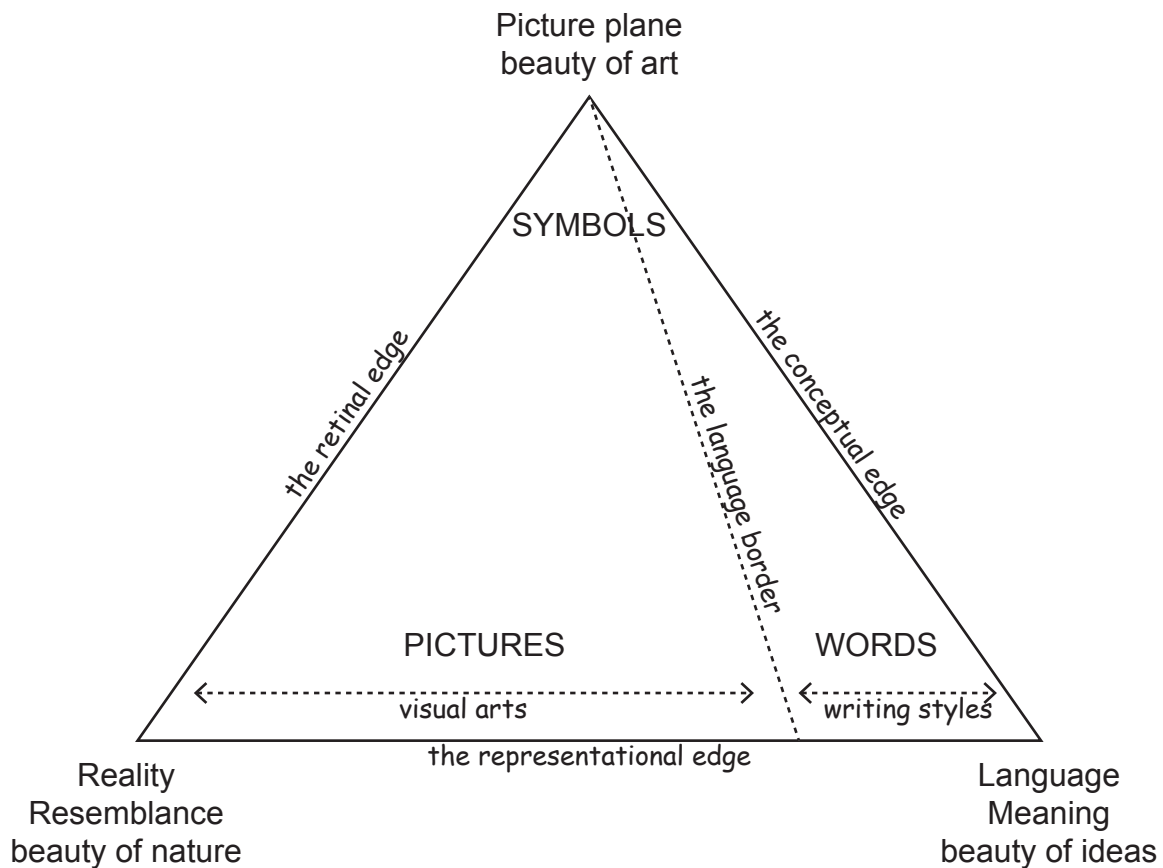


Figure 125. Pyramid of forms of expressions, styles [drawing and writing], and vocabulary of comics (adapted from pp. 50-57, 145-147, 161, 202, in McCloud, 1994).

Comic artists like McCloud and Sousanis are neither illustrators nor scriptwriters, they are both at the same time. They are storytellers who compose comic books with text and images interwoven. As they also are reflexive thinkers, they recognise that reading verbal information in writing is linear—“it takes time”—, while visually perceiving images is simultaneous—“instantaneous” (see Figure 126 & Figure 127). Therefore, the art of designing good comics sits in between text and images—it is “relational”. There is a fine line between art and entertainment in the popular art of comics and this fine line—which refers to design (*A Fine Line* is the book by famous designer Esslinger³⁷ about his thoughts on and his experience of design)—can be seen as a link between comics thinking and design thinking.

37 Esslinger, Hartmut. 2009. *A Fine Line: How Design Strategies Are Shaping the Future of Business*. 1st edition. San Francisco, CA: Jossey-Bass.

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Figure 126. “The verbal marches along linearly” the visual is “simultaneous”, “relational”, p. 58, in Sousanis, 2015.

Figure 127. “Pictures are received information [...] instantaneous [...] writing is perceived information, it takes time”, p. 49 in McCloud, 1994.

4.2. Why is comics thinking political?

People who spend most of their lives working may not be inclined to come home at night to further labor away through reading long, densely written theoretical books [...] the question of making books politically—trying to think through using novel techniques not only for their own sake, but as a method of directly engaging with wider potentially interested audiences [...] a reader can learn something substantive from quickly skimming the book (as aided by various typographic devices), as well as through a cover-to-cover close read [...] the intent is that the larger points are more immediately discernible than in a traditional nonfiction text format. (Adam Michaels in Guffey, Elizabeth, Adam Michaels, et Jeffrey Schnapp. 2014. “Reinventing the Paperback Book in the Digital Age”. *Design and Culture* 6 (1).

In a similar manner as to what Adam Michaels strived to achieve with *The Electric Information Age Book* in 2013, Sousanis declared in an interview for *The Paris Review* in 2015 that he gave his comics to a random guy “who hung out [...] in Spanish Harlem” where he lived. The guy said “Yeah, it’s all about how we perceive things”. The author was happy that this person (as well as academics had when they read his thesis beforehand) got it because his purpose was “both public and scholarly”. Rendering complex things in a simple manner is a political statement, one of popularisation, not to be confused with “crass commercialism” (see Figure 128). For example, because he thought that Deleuze and Guattari wrote an “unreadable book”³⁸ but that the concept of rhizome they developed was worth democratising, Sousanis tried to repre-

38 Deleuze, Gilles, & Félix Guattari. 1980. *Capitalisme et schizophrénie. : Tome 2, Mille plateaux*. Paris: Editions de Minuit. For Sousanis “rhizomes are this thing where everything’s connected, and each one is a point of view, but it’s more of a visceral concept, rather than an intellectual one, or a visceral concept that can then become an intellectual one.” (Nick Sousanis in Hodler, Timothy. 2015. “Thinking Through Images: An Interview with Nick Sousanis”. *The Paris Review*, 2015)

sent it more “viscerally” (*Unflattening*, p. 45) in order to make it more accessible. In the case about *Science and Nature* (see Chapter 21), it appears that “science for the people” is a contemporary issue (parallel to open science).

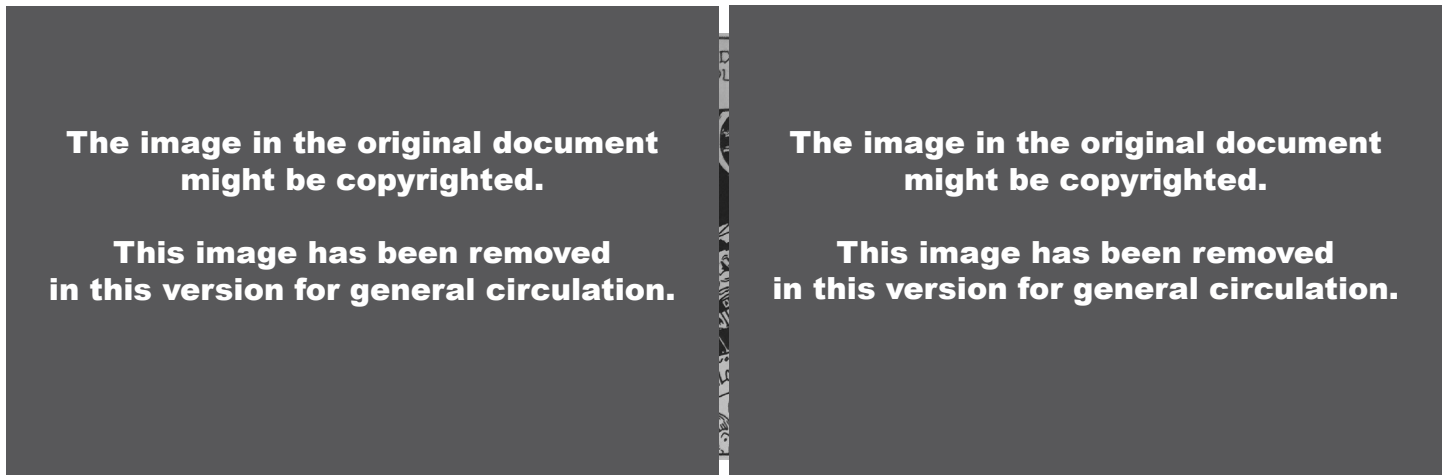


Figure 128. Words and images: “words and pictures together are considered [...] a product of crass commercialism”, p. 140, in McCloud, 1994.

5. Cartoons and diagrams are elements of comics thinking—used in other media

5.1. What is cartooning?

Comics is a storytelling process with frames and strips. But it is also the combination of a meaningful “style” and a communication “medium”. Cartooning is a style—“an approach to *picture-making*” which allows to *focus on specific details* (i.e. “essential meaning”; see Figure 129).

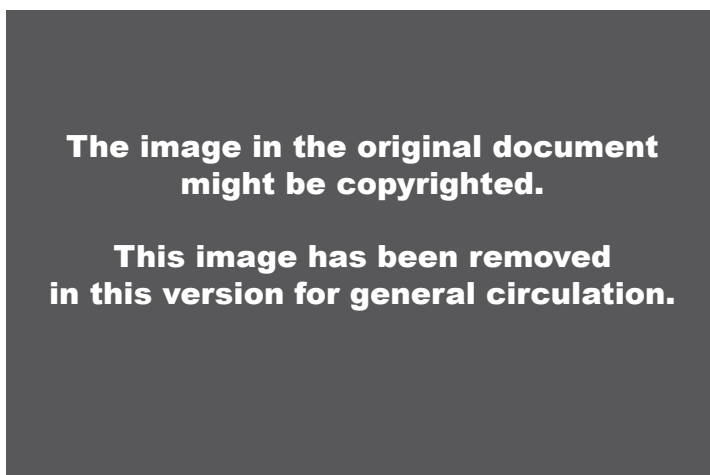



Figure 129. “Cartoons are not the same thing as comics”, p. 21, in McCloud, 1994.

McCloud asserts that through cartooning “by *stripping down* an image to its essential ‘meaning’, an artist can *amplify* that meaning” (see Figure 130). This is what Bertin called an *efficient*

image. An image is “a significant visual form” and it is efficient if its perception time is lower than for another, hence its “mental cost” is reduced (e.g. Figure 131).

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<p>Figure 130. “Cartooning [...] can amplify the meaning”, p. 30, in McCloud, 1994.</p>	<p>Figure 131. The Transformation of the Book Publishing Industry—Old Model vs. New Model, detail pp. 70-71, in Osterwalder & Pigneur, 2010.</p>

5.2. What is diagrammatic thinking?

Diagrams are a medium—an “excellent communication tool”. It is a sub-element of comics thinking—which applies within frames (see Figure 132) or strips (a limited number of usually two to four frames that are displayed horizontally on the width of a page). Waller considers “text-as-diagram” (“graphically-realizable topic structure in a relatively pure form”) because of their typographic layouts. It is a reason to associate them with the comics form of text interwoven with images. Another reason is that diagrams are “unconstrained by the conventions of linear-interrupted written language”. Thus, diagrams, as media, are adapted to the delinearising possibilities of comics as a medium.

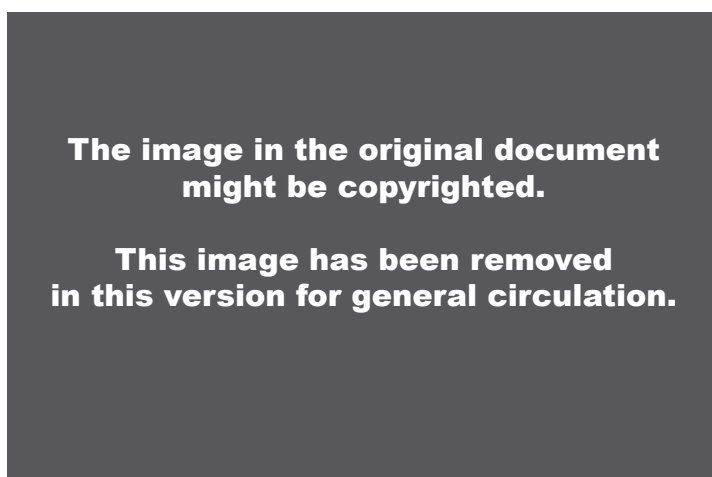


Figure 132. Diagrams as “pictures in sequence are [...] excellent communication tool”, p. 20, McCloud, 1994.

But diagrams (and what Bertin calls “graphic representations”) are also widely used in other media than comics for two main purposes:

- Yates (1966) views them as “mnemonic devices”, in the sense of the “artificial memory” systems of classical rhetoric. This *memoria* technique was to imagine a familiar building and associate the various facts to be remembered with rooms of the building and things in the rooms. This is also close to what Bertin describes as the first two functions of graphic representation: *recording information*, and *communicating information* as a simple and memorisable image.
- Another use of diagrammatic thinking is for the initial planning of prose—an aid to creativity. This practice is very similar to what Sousanis described as *drawing to generate ideas* and what Cross calls the designers’ “exploration of problem-and-solution together, using ‘languages’ of drawing and modelling” (Cross, 1991). This is also close to the third function of graphic representation according to Bertin; i.e. “an experimental instrument” with which the researcher “plays”.

Waller quotes Ong as warning that “attempts to reduce everything supplied by the other senses—sounds, smells, tastes, pressures—to charts and tables” is deceptive. He himself is very adamant of “over-systematization” and of the lack of attention to the graphic implementation of diagrams by people “with few graphic skills”. It is yet another instance of an issue similar to those we have already seen of design thinking without designers and of comics thinking without comic artists.

For comic artist Sousanis “the medium we think in defines what we can see”. For example, he uses the swimming metaphor of a character immersed in the sea and asserts that the conversation in his comics doctoral dissertation is conducted “amphibiously” (i.e. “text immersed in image. Pictures anchored by words”). Thus “we have a hard time thinking about how to think through images.” McCloud’s 6-step theory of the creative process (see Figure 133) could help understand how to think through images. To do so, he plays with diagrams and cartoons. First, he uses the conventional frame by frame left to right conventional reading direction to show how artists create. It is a conventional comic strip designed as per the law of the genre, it is a Gestalt based on three (proximity, similarity, and closure) of its six visual principles (the other three being common fate, good continuation, and area and symmetry). Second, he displays the same 6-step process as a diagram within only one frame. Because this diagram has to be read against the grain from right to left, he first had to make the reader pause to read this complex frame, then give indication that the reading direction is an unconventional right to left (his message is emphasised by the caption that the journey is “from *end* to *beginning*”³⁹). The effect o,

39 McCloud notes that children at a young age start to use words and images “interchangeably” as long as it works to communicate but our education system makes them “grow out of it”. A similar line of thoughts is shared by other visual researchers such as Kress and Leeuwen (1996) who wrote that “materials provided *for* children make intense representational use of images; in materials demanded *from* children writing remains the expected and dominant mode.” So it is no surprise that learning the creative process should go backwards and possibly start with unlearning. It is also what designers refer to as ambidextrous thinking.

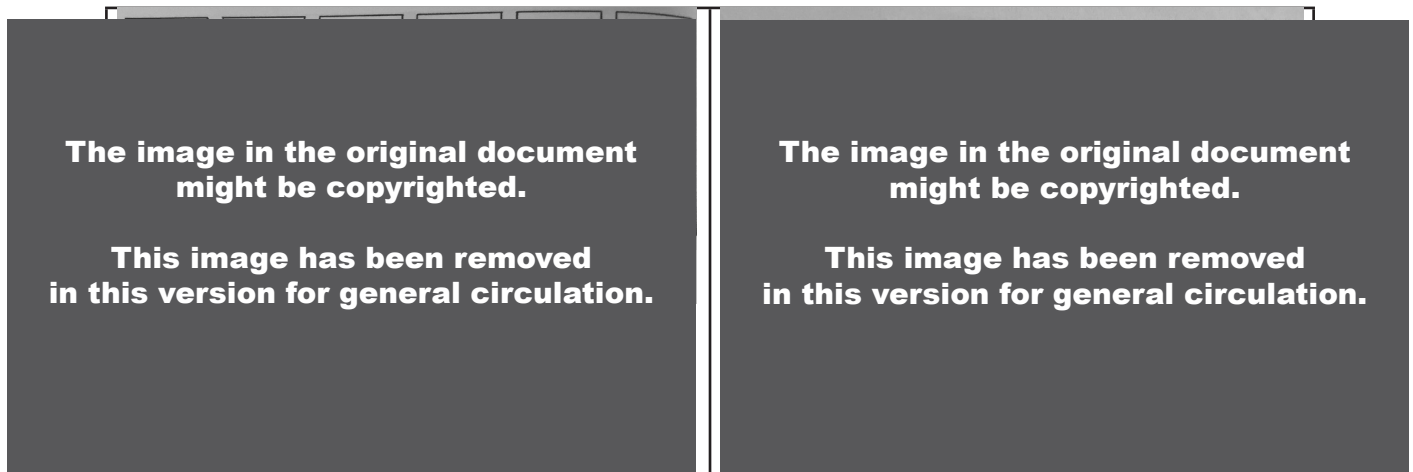


Figure 133. A 6-step comprehensive theory of the creative process (pp. 170-183, 213, in McCloud, 1994.)

What comic artists achieve by the means of frames, book designers achieve with grids (see Figure 134). One of the differences between composing with frames and with grids is that the firsts are often materialised by visible borders—which are received by the reader—while the second are visible at the design stage (these systems exploit what Waller calls “a logic of assembly”)—but are not apparent in the published version (even though they can be perceived as a gestalt by the reader). Book designers who use grids (arguably inspired by the Gestalt visual principles and especially the closure principle) can combine different elements such as heading, block of text, cartoon, diagram on the same page (simple and predictable visual patterns are easily understood). Pages composed with grids are designed to be read in a modular way (i.e. possibly nonlinear and partial since not all the elements have to be read to make sense). For Waller (1987):

grids were found to solve aesthetic “problems”. By following the modular principle, a visual unity could be imposed on complex material. [...] A dichotomy emerges between a linear model of written language in which a relatively discreet typography “scores” or notates the reading process for compliant readers, and a diagrammatic typography in which some concept relations are mapped more or less directly on the page for access by self-directed readers.



Figure 134. The Transformation of the Book Publishing Industry—Old Model, p. 70, in Osterwalder, & Pigneur, 2010.

The same warns that modular grid can be monotonous and methods of assembly “impose their own visual logic on the things assembled”. Again, it is the graphic designers’ talent to devise and apply a graphic system that does not look dull.

6. PMC: serious comics thinking is aligned design for the people

If *Understanding Comics* was compared with a text-only hardback treatise on comics, and *Unflattening* with a thesis, it could be concluded that their forms, and the association of their content with these forms, are very innovative. But instead, I have decided to analyse both comic books per themselves. This analysis shows that comics thinking is a coherent system which works as an efficient process that goes beyond modelling (representation and reduction) and allows for the creation of an expansive thoughtspace for authors. The way McCloud and Sousanis play with frames, instead of being constrained by them, is similar to how graphic designers play with grids, for example in *Business Model Generation*. It seems as if the lengthy authoring process of comics thinking (i.e. adapting ideas and concepts into images, interweaving text and images, composing frames into pages, etc.) paradoxically saves the readers some of the psychic efforts of reading by making it easier to receive formally customised conceptual chunks. In other words, because the comics artists have invested a lot of their time, energy and talent into designing their books, the public reception of complex matters (e.g. business models, the art of comics, visual thinking in education) is enhanced. As a result, the three myths of the PMC for both comics are aligned, and their pattern is the same as the PMC for *BMG* (see Figure 135 & Figure 136). In other words, these books were well-designed to be well-received by a wide audience.

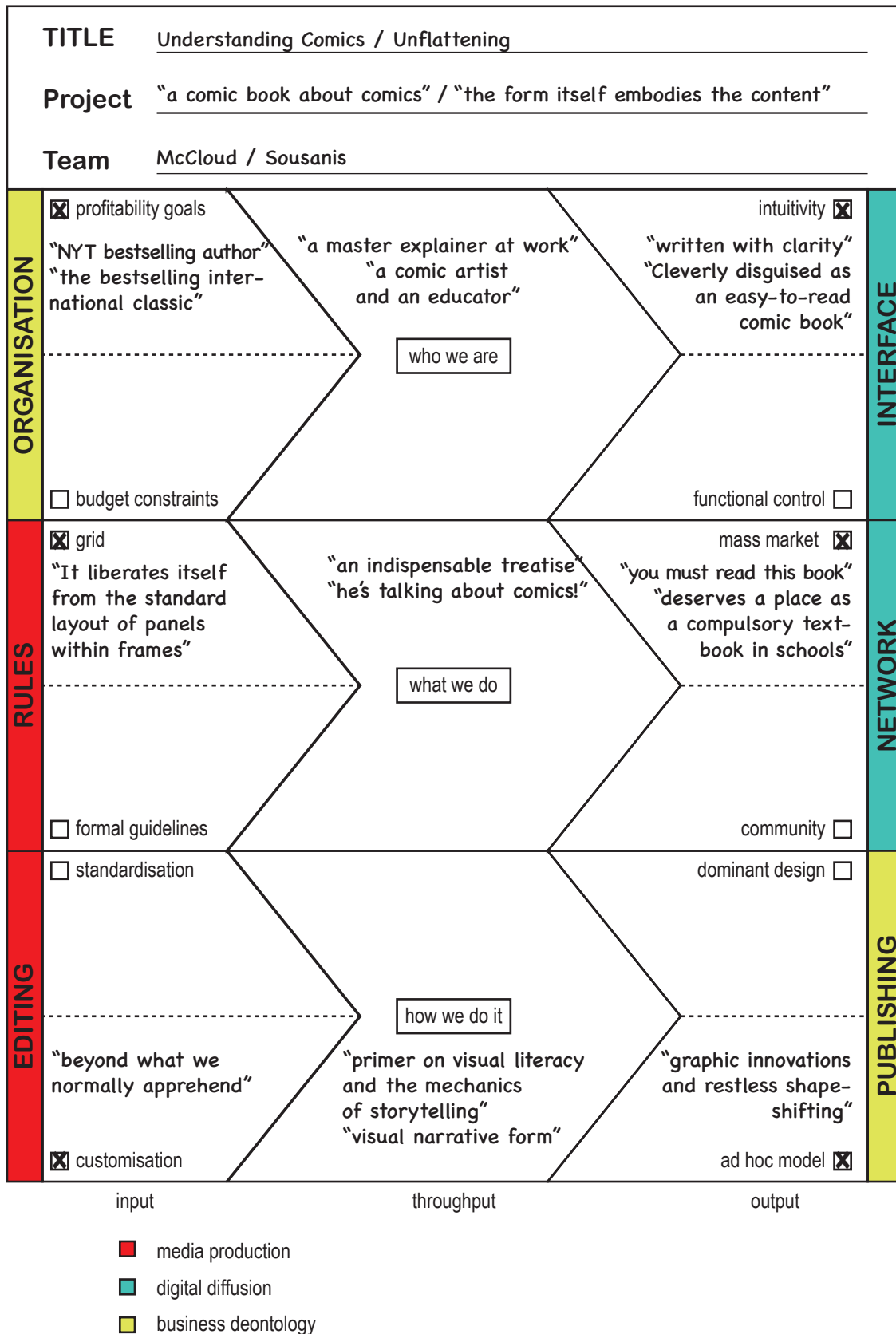


Figure 135. The publishing canvas for *Understanding Comics* and *Unflattening*, CC BY-NC 4.0

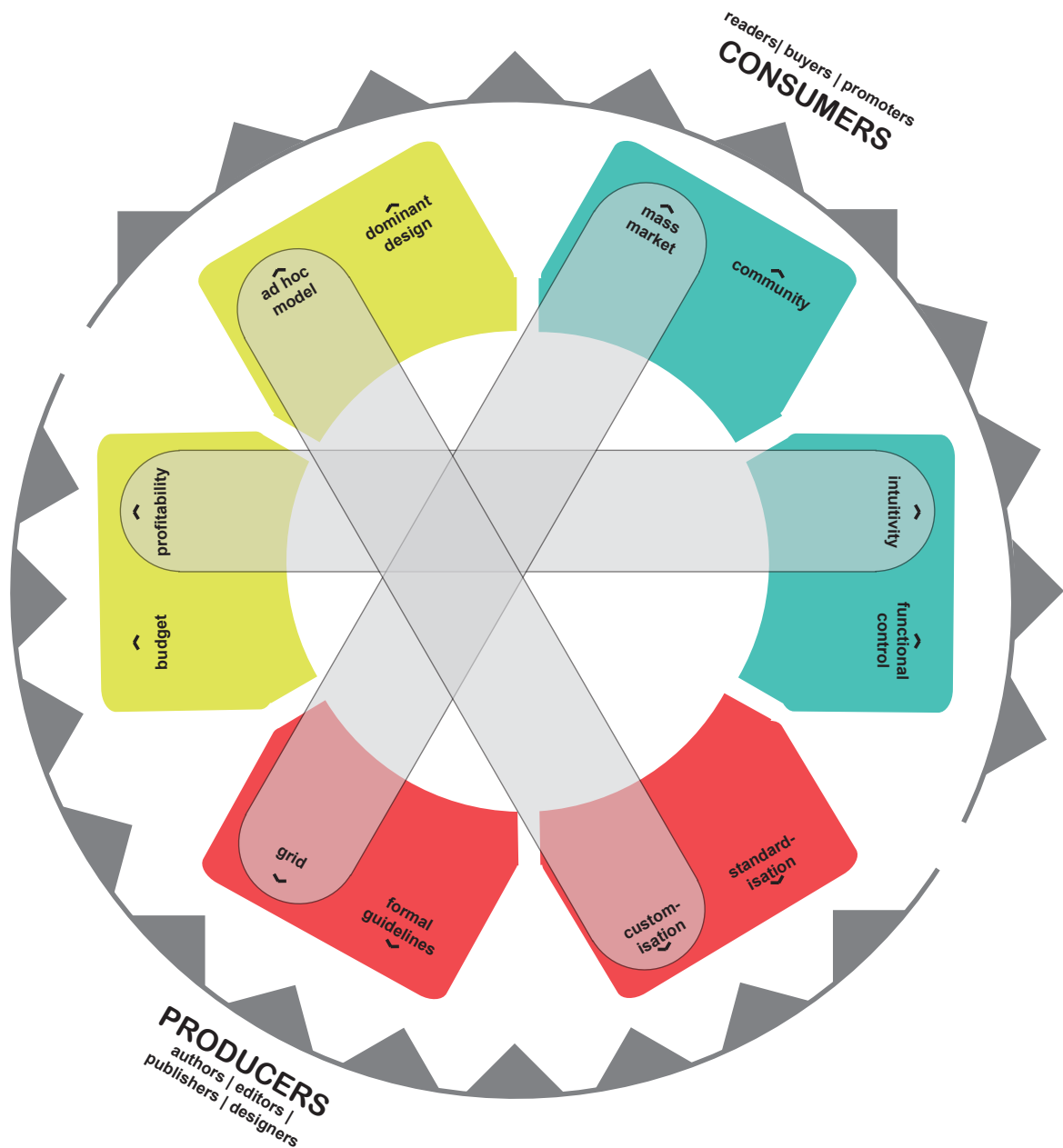


Figure 136. The PMC for *Understanding Comics* and *Unflattening*, CC BY-NC 4.0

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Chapter 18.

Brigitte Borja de Mozota

1. A quest to popularise design management with corporate leaders

This case study is not an extensive account of professor Borja de Mozota's career or even of her bibliography. It is a partial and selective view of her approach of knowledge dissemination by the means of book publishing and associated activities. My objective is to illustrate how she designed the design of her publications about design management, and how aligned were her initial objectives with the perception of her published work. Her academic works (doctoral dissertations, articles and books) successfully complied with the scientific standards and were well received in her community of peers. Her book *Design Management* became a "bible" of the discipline for graduate and PhD students alike. She even managed a spillover from design and management to art and a non-specialist (and largely undergraduate) audience with the series of books she created and directed at Parsons school.

I have focused on her academic dissertations and her books and I will eventually insist on a recent series of articles that she co-authored with consultant Valade Amland on the professional social network LinkedIn. This is a case study of how the initial project of a book became a self-published series of non-academic papers on the online platform of this social network. I argue that this is an innovative endeavour. But its design lacked the formal qualities to reach a wider circle than the communities who were already interested in the works of both authors, because they could not reach a well-formed consensus on what they wanted to achieve for what audience. Instead, they produced an in-between artefact, not for lack of talent but because of misaligned and by default options.

2. The beginning of an academic career in France in the 1980s

Brigitte Borja de Mozota enrolled as a PhD student in Economics with Université Paris 1 in 1981. She had previously been the head of purchasing and projects in a department store and was exposed to design through the concepts of style and collection (as in fashion) that she had to coordinate. In parallel to her research, she also trained as a designer at Ensci-Les Ateliers between 1982 and 1985.

Her doctoral dissertation was based on seven case studies and a seven-page bibliography. One of the most decisive books she read was *Éléments de Design Industriel* (1984) by Danielle Quarante which introduced her to Peircean semiotics. Her thesis was thus organised around his triadic semiotic approach (see Figure 137).

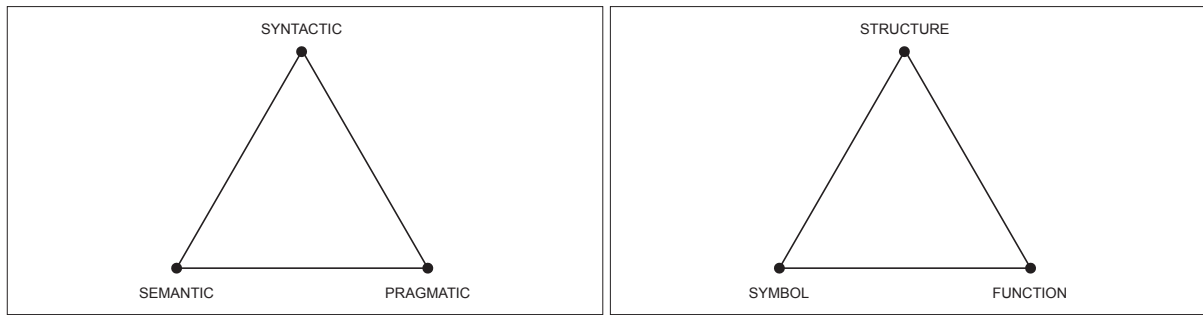


Figure 137. Semiology: the three dimensions of the sign-object (Fig. 6 in Borja de Mozota, 1990)

Her aim in the thesis was to introduce design as a management tool. She argued that because aesthetics is pervasive in organisations, form must therefore be managed consciously. Beyond formal communication, design itself is a form of communication, a communication system. Thus, design must systematically be integrated in the innovation process in order to coherently manage the economic, technological, human and aesthetic factors of the products in particular, and of the general “system of objects”⁴⁰ that characterises the organisations in general. As a result, design efficiency can be assessed by the sign-value (see Figure 138).

$$\text{Design} \longrightarrow S \left[f (x_m + x_o + x_p + \sum S_j) \right] \longleftarrow V = f(y_i)$$

où

S = signe	$\sum S_j$ = environnement des signes
x_m = structure du signe	V = valeur-signe
x_o = fonction du signe	y_i = critères de mesure de l'efficacité du signe
x_p = symbole du signe	

Figure 138. Equation of the sign-value (Borja de Mozota, 1985)

This doctoral dissertation was innovative and interdisciplinary and inserting the term “design” in the title was controversial and difficult. The thesis was eventually submitted in 1985 (see Figure 139). Fifteen years later, in her habilitation thesis to supervise research (*habilitation à diriger des recherches*—HDR) in 2000, Borja de Mozota acknowledged some limitations due to the exploratory nature of her pioneering work but reiterated that it was instrumental to introducing “design” in the vocabulary of Management science.

40 Baudrillard, Jean. 1984 [1968]. *Le système des objets. La consommation des signes*. Denoël/Gonthier. Coll. “Médiations”. Paris, France.

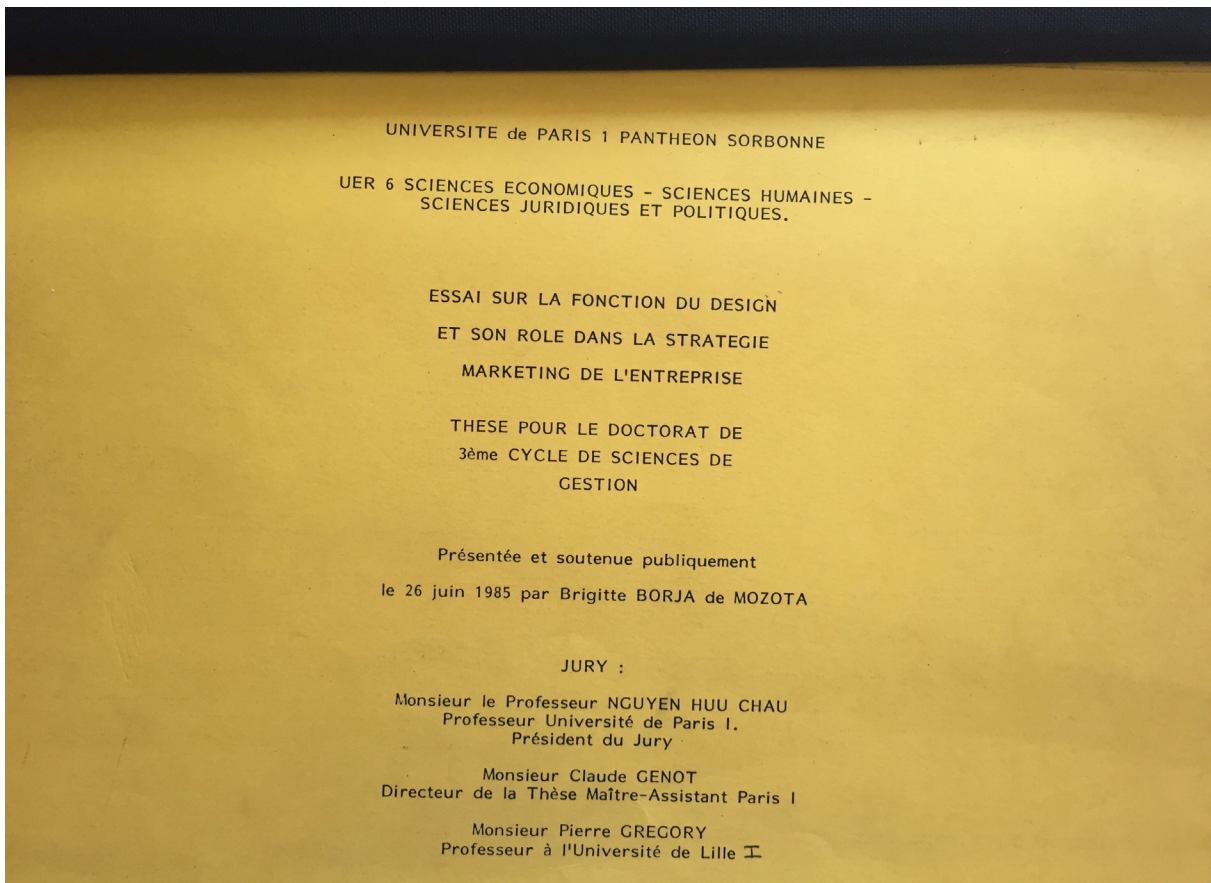


Figure 139. Cover page of Brigitte Borja de Mozota's thesis, « Essai sur la fonction du design et son rôle dans la stratégie marketing de l'entreprise », 1985.

Five years after her thesis, the *Design & Management* (1990, see Figure 140) book was released in french. It was aimed at managers and more generally at all those who are in touch with design professionals. It was meant to help them “better understand this domain [and] the notion of aesthetics” but it also argued that professional designers who “only live through business were reluctant to be defined and presented in ways understandable by a manager”*. The author went one step further—from her thesis where she introduced design *in* management—to introduce the concept of design *and* management as “design management”; i.e. the “management of a [visual] system of forms”*. She argued that design as a visual system is part of the corporate culture and therefore aesthetics is a strategic business value.



Figure 140. Brigitte Borja de Mozota, *Design et management*, Éditions d'organisation, 1990.

3. The emergence of design management in the 1990s

Teaching design to managers had started in 1975 with the foundation of the Design Management Institute (DMI) at the Massachusetts College of Art in the US and in 1976 in the UK as a joint venture between the Royal College of Art and the London Business School. In the 1980s design research was burgeoning but it was still marginally perceived in business. 1990 was probably a pivotal year in the introduction of design as an emerging field in Management science and in the corporate world with the release of *Design Management. A Handbook of Issues and Methods* by over 40 contributors and directed by Mark Oakley. Its aim was to offer “a comprehensive review of the role of management in design and the role of design within management structures”. 1990 was also a pivotal for Brigitte Borja de Mozota who publicly appeared as a member of the Design Management research community with her contribution to the handbook *Design Management* and who became more public in France with the release of her own book *Design & Management*.

In her book, she offers a short history of design which really started “in Germany in 1919 with the apparition of the Bauhaus school” until the 1980s when Philip Kotler wrote⁴¹ that “each company has to decide on how to incorporate design into the marketing planning process”. She draws four lessons from the past: design is international, design is both internal (process) and external (recognition), design is contagious, and designers are entrepreneurs. I have chosen to examine more closely how two concepts at the core of her work have evolved: 1. the organisational dimension (the horizontal imbrication of design with marketing, management and communication) and 2. the semiological dimension (the parallel between design and semiology).

41 Philip Kotler, “Design: A Powerful but Neglected tool”, *Journal of business strategy*, 1984.

I will first discuss the organisational dimension of design. In *The Sciences of the Artificial* (1969), Simon drew a parallel and proposed a comparative analysis between Artificial Intelligence (AI) and Operations Research (OR). “OR provides algorithms” and decisions which are “optimal for the simplified approximation [of] the real world”. The “heuristic search” of AI finds decisions that are “good enough” in the real world, “satisfactory solutions, not optima”. But they approximate the real world “with much more accuracy and detail than the OR models can admit”. Those approximations are better representations because they are carried out in a “more complex and less well-structured problem space”. Contrarily to quantitative OR methods, AI can handle combinatory problems because it is heuristic and extends to “all situations that can be represented symbolically, that is, verbally, mathematically or diagrammatically”. I will focus on the two issues discussed by Simon: first of design as a better business methodology (heuristic), and second of design as effective representation (visual impact). It brings me to the concluding remark of Borja de Mozota in her doctoral dissertation that both education *in* and professional practice *of* management must include design because “design is a management tool”* and “managers find it difficult to understand the role of design”*. Diagrammatic representations of design and management fit the bill of visualisation and didactic (see Figure 141).

Politiques marketing → Domaines design ↓	produit	prix	distr vente	publ R.P.
Graphisme	X			X
Produit	X	X		X
Packaging	X	X	X	
Architecture			X	

Figure 141. The domains of application of design are imbricated in the various marketing functions [matrix diagram], Borja de Mozota, 1985

Second, I approach the dimension of design (both as a process and as a product) through semiology and Gestalt (theory of form). In fact, both process and product (artefact in terms of design) can be defined as “systems of interacting elements” (see Figure 142).

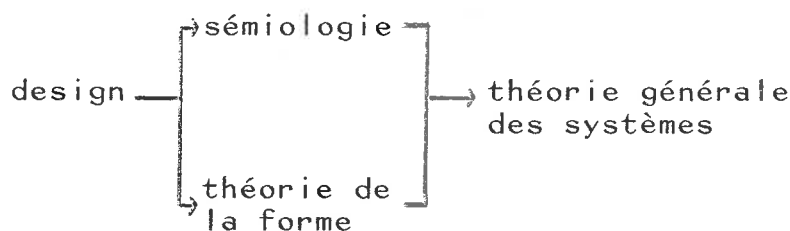
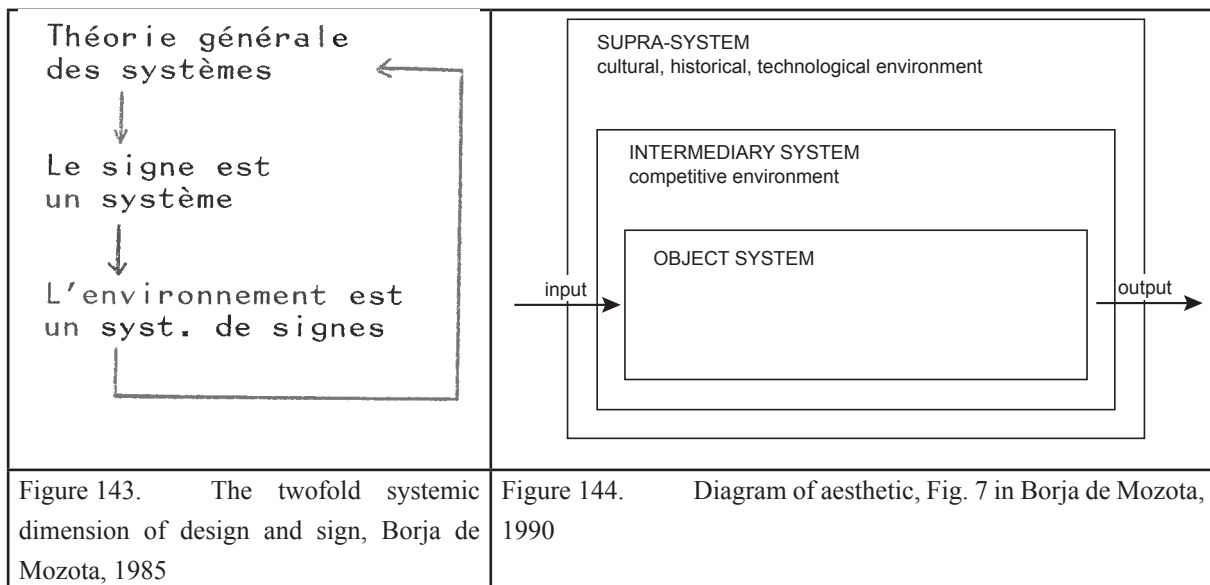


Figure 142. The theoretical foundations of design as a coherent system of interacting elements, Borja de Mozota, 1985

For Edgar Morin in *La Méthode* (1985) the concept of object (which encompasses the discipline-specific concepts of product or artefact) has entered in a crisis since the beginning of the 20th century. It has started with physics when it was discovered that the atom was no longer the primary irreducible and indivisible unit it was previously believed to be, but a system made of mutually interacting particles. This crisis spread to all the key objects and elements of physics, biology, sociology, astronomy such as atoms, molecules, cells, organisms, societies, stars, galaxies. In other words, “our organised world is an archipelago of systems in an ocean of disorder. Everything that used to be an object became a system.”*⁴² Hence design is better understood as a system which external representation can be analysed from the outside by semiology, and which internal coherence can be apprehended by Gestalt.

In a Peircean semiotic perspective, the sign-object is interacting with the interpretant through the material medium and vice versa. In terms of design, there is a similar two-way interaction between the user and the artefact through the material medium. Representations of sign-as-a-system and artefact-as-a-system are coherent with the idea that “the environment or system of signs (J. Baudrillard) influences the sign and the new designed sign in turn influences the environment”. In other words, signs as systems can be part of larger-scale systems and interact with other systems at the same scale. This concept of inter- retro- actions (see Figure 143) and scale or boxes-within-boxes (see Figure 144) is widely used in design (e.g. Deni, 2010) and is reminiscent of the “secondary semiotic system”* of the myth.



The system represented by Borja de Mozota in Figure 144 is that of aesthetics. In terms of aesthetics, design is not assessed as Kantian “free beauty” or contemplation of works of art, but

42 “Most scientists are quite aware that since we have acquired some knowledge of electricity it is not possible to speak of atoms as pieces of matter. [...] it is a variable condition that involves the special positions of two or more bodies. There is no longer any tendency to speak of electricity as ‘contained’ in anything. [...] the electric age [...] establishes a global network that has much of the character of our central nervous system.” (McLuhan, 1964)

instead as “dependent beauty”. This assessment implies engagement with an object on the part of the user, an aesthetic experience of design to “use it, handle it, wear it, and not simply judge it by its appearance alone” and how it “performs its function with excellence and style” and is “good *for us*” (Forsey, 2010). This aesthetic experience of design is dependent upon the artefact (the object system), the context (the intermediary system) and the culture (the supra-system, see Figure 145).

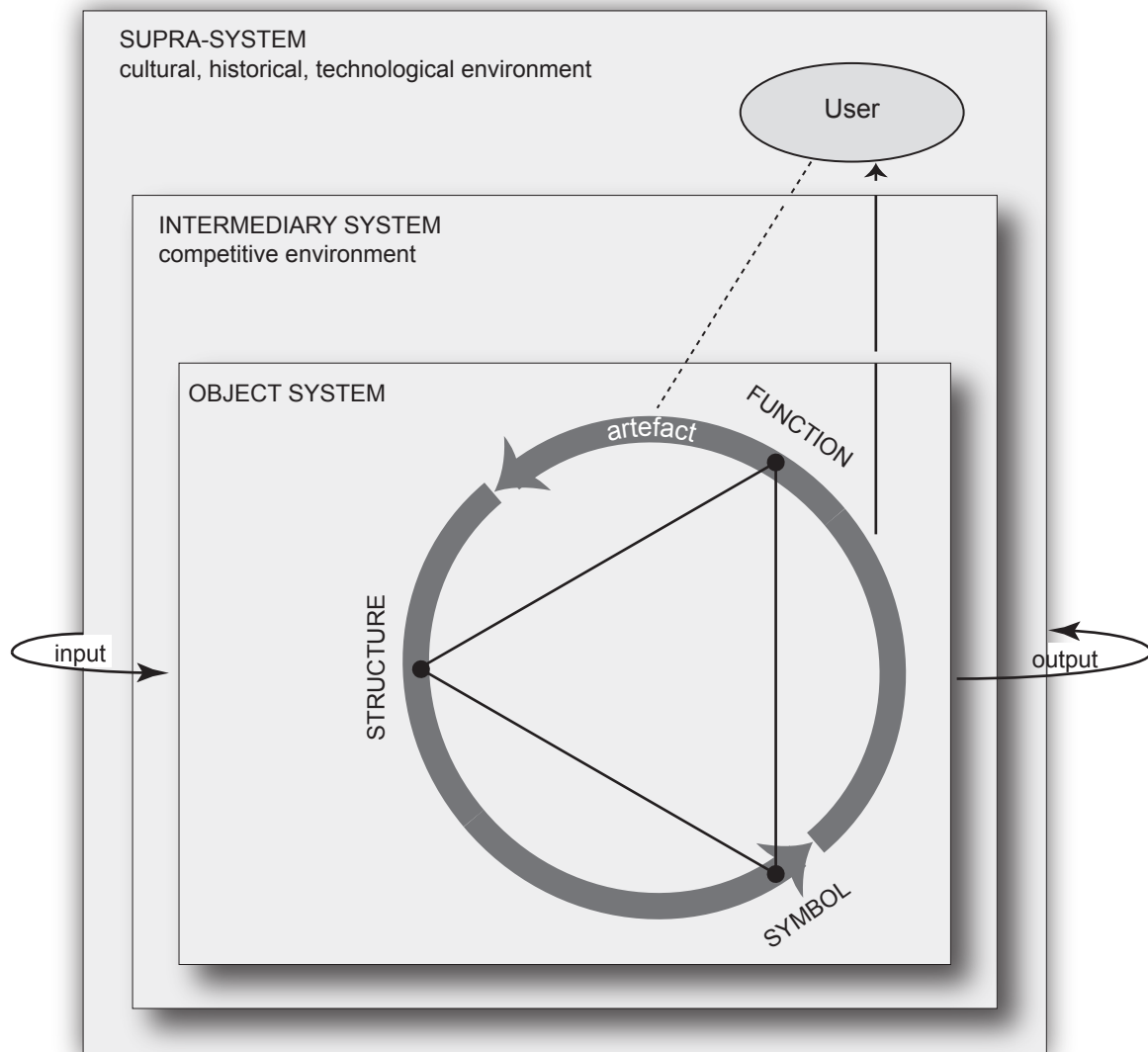


Figure 145. Dependent beauty and the user, CC BY-NC 4.0

4. Going global: from “Design & Management” to “Design Management” (1990-2011)

During the 1990s Borja de Mozota’s intellectual influence in design management grew, specifically in France, in the US and the UK, and more generally internationally. She had started organising a research seminar at the DMI in 1990 and coordinated the six following editions, each time in a different country. In parallel, she founded the research chapter of the DMI in 1994 and was its director until 2005. She also participated in the creation of the quarterly

*Design Management Journal*⁴³ in 2000 in which she occasionally published papers. This more theoretical journal than the preexisting *dmi:Review* completed the program of publications for the DMI members, and it published case studies and professionally-oriented articles. In France, she also published papers in a similar hybrid⁴⁴ (academic-professional) journal, the *Revue française de gestion*.

She presented her HDR in 2000 with a reflexive discussion of her doctoral dissertation, an extended bibliography of twenty pages and a wider perspective on Design Management. Her approach was influenced by the Porter’s Value Chain model in terms of strategy, patterns and clusters and was enriched by her own case study of thirty-three European firms which participated in a design award contest. With her HDR, she was able to direct PhD students which in turn endowed her with a more central position in the emerging field of Design research. Based on her research work, her reflexive exercise and her teaching experience she wrote the reference book *Design Management* which she presented as “the first book to bring together the theory and practice of design management” and was to become the reference in this field. The first edition in french was released in 2001 (see Figure 146) and it took the author a lot of convincing in the form of professional and academic testimonies and recommendations for the publisher to release it. An augmented (two additional chapters) American edition (see Figure 147) was published two years later with the support of the DMI as a “commitment to continuously advancing the profession and the understanding of the crucial role of design in business”.

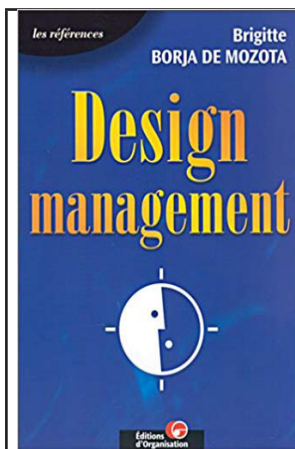


Figure 146. Brigitte Borja de Mozota, *Design management*, Éditions d’organisation, 2001.

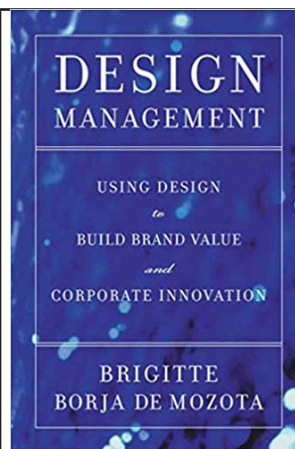


Figure 147. Brigitte Borja de Mozota, *Design management*, Allworth Press, 2003.

Rather than attempting to summarise this 184-page book in a chapter, I will try to give a quick *look and feel* of its structure and style. It is organised in three parts of roughly similar length of 80-90 pages each. They revolve around the three issues of design management: what, why

43 Brigitte Borja de Mozota, “The Four Powers of Design : A Value Model in Design Management, *Design Management Journal*, 2, 2002.

44 On its website [visited on 31st October 2019] the *Revue française de gestion* is presented as “generalist and multidisciplinary”* for “teachers, trainers, students and professionals in management”* and publishes “conceptually rigorous articles written in a style accessible to non-specialist but business-savvy readers”*.

(what value?) and how (what is it in practice?). The style—not unlike that of Edgar Morin’s—is thought-provoking. Rather than descriptions, the first part abounds with dialogic slogans: e.g. “rather than understanding design, design the understanding” or “rather than conceiving products, design conceives *platforms*”. In the second part about the *why*, marketing, innovation and strategy are hybridised with design. For example, mixing engineering design and marketing creates a model of corporation which is neither “technologically driven” nor “market driven”, but of another type that is “interaction driven” between “the subject and object”. Those subjects and objects are cognition, emotion, semiotics, and aesthetics. The second chapter of part 2 is an introduction to necessity: “‘innovate to survive’ is our world’s motto”. And the third chapter provides evidence that “design is concerned with fit, and so is strategy”. The ultimate third part contains a warning that “since there are books written for designers on the ‘how to’ aspects of business, this book does not go into these areas”. So the *how* that is discussed is higher-level and more paradoxical and concerns the three levels of operational, functional, and strategic issues. For example: “Just as the designer must encroach on others’ work, in the same way, others must stimulate the designers in a disciplined form of anarchy.” Or “design is also about thinking *differently*. Rather than communicating after doing, communications is itself a design process.” And “optimizing the circulation of information necessitates new visualization skills [...] charts are constructed that resemble ‘visual trend mapping’ or ‘cognitive charts’ and act as representation of a problem. They help to resolve connection problems”.

What are the similarities and differences between the designs of those two books? How do they *look* (their structure) and *feel* (their style)? On the back of the excerpts I have chosen in *Design Management*, how is the *understanding* designed, what is the *fit* between the subject and object of this book and are new *visual skills* implemented? In a nutshell how does the 2003 reference book visually stand compared to the formally more conventional 1990 *Design & Management*? The first book was heftier with 340 pages and its content was more structured. It consists of 7 parts, including 14 chapters subdivided into 38 sections. Despite its claim to be for *managers* and addressing the issue of their “difficulties to understand the role of design”, I argue that this first book was actually meant for academics in Management science and presented findings in Design research. There are two main reasons for this argument. The first reason is structural: most of the book does not directly concern managers. The introduction is conceptual, the design methodology in part 1 is conceptual, parts 2 and 3 are for designers and marketers (not general managers), and the fifth part—“Conclusion”—remains theoretical and lacks practical advice on how to implement design management. In short, this book is intellectually stimulating but the path from research to development—or the “how to” of design management—is not explicitly stated. The second reason is formal: the book is thick and densely written and typeset, and therefore intimidating. It is logocentric as illustrations (tables, diagrams and sketches) occupy only 3% of the pages. The 15-20 title and white pages (accounted for in the overall illustrations; see Figure 148) appear necessary as a typographic arrangement to allow breathing between chunks of dense text.

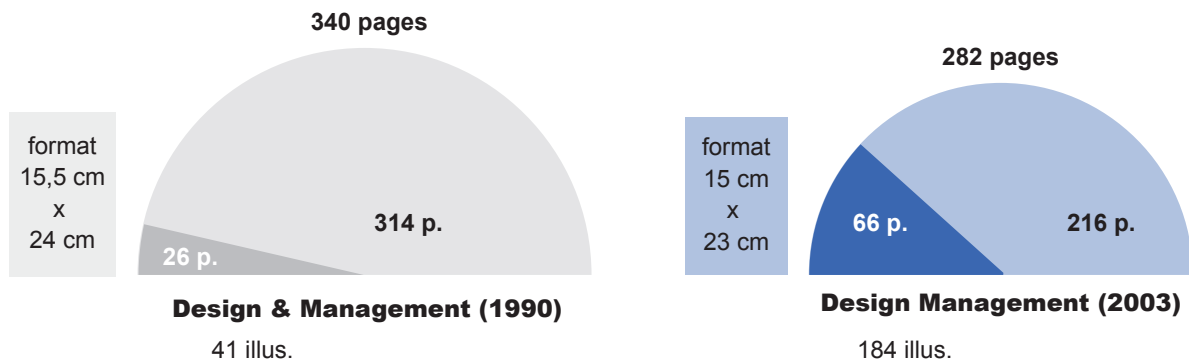


Figure 148. Format of *Design Management* versus *Design & Management*, CC BY-NC 4.0

A striking feature of Borja de Mozota's writing style is list-making. Open either book randomly and you will probably find one or more bullet-list or checklist on the double-page spread. Jack Goody devoted a chapter to "What's in a list?" in *The Domestication of the Savage Mind* (1977) which he presented as "an examination of the means of communication, a study of the technology of the intellect". He saw the "making of tables, lists and formulae [...]" as a change in consciousness". For him, writing does not duplicate speech but—through decontextualisation (or, as he preferred, "recontextualisation")—performs the two main functions of storing (communication over time and space) and visually re-ordering (for inspection in an abstract form). He distinguished three kinds of lists: 1. retrospective inventories; 2. teleological shopping lists; 3. lexical lists such as inventories of concepts, dictionaries or encyclopaedia.

I will focus on the third type which associates a storing function of records (type 1) and a performative function (type 2) not for physical action but for mental cognition; i.e. the last two items in this chapter which are "writing and listing" and "listing and cognition". In the process of writing, lists are "a mode of classifying, of defining a 'semantic field'", since they include some items and exclude others and they allow a "perception of pattern" through a process of "over-generalisation". Subsequently "the list is then utilised as a teaching device as well as an instrument of learning". In cognitive terms, Goody suggested that "list-making alters not only the world out there but the psyche in here". I obviously have no pretence to analyse the inner workings of the author's mind (I am no psychologist) but I noticed a striking feature in the second book which was not seen in the first. 94 quotes and short case studies (excerpts varying in length from two lines to one page) have been interspersed (for a total of roughly 24 pages) in the overall volume of 282 pages (i.e. a significant 13%). The insertion of these nuggets of real life and/or external reference could be interpreted as a balancing act with the "over-generalisation" of lists; i.e. specific and particular examples counter-balancing general patterns. Without the quotes and the tables (which are another format similar to lists), illustrations, diagrams and sketches in *Design Management* only amount to the same 3% of page space (see Figure 149) as in *Design & Management*.

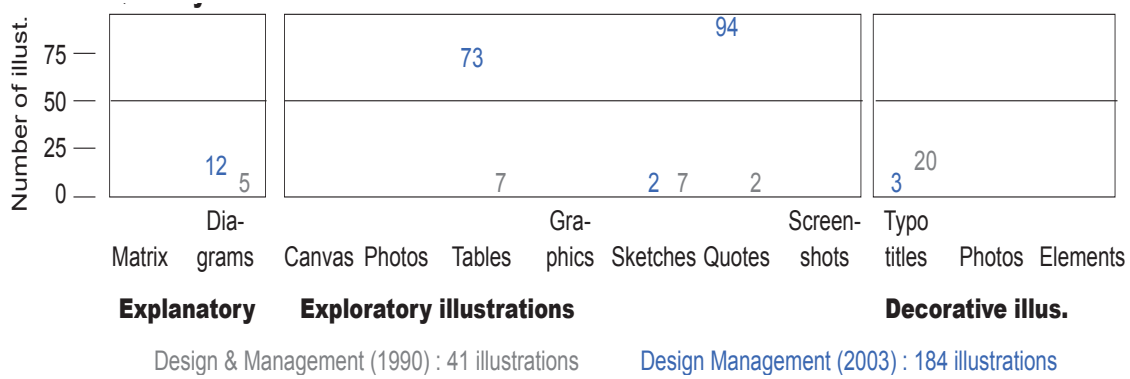
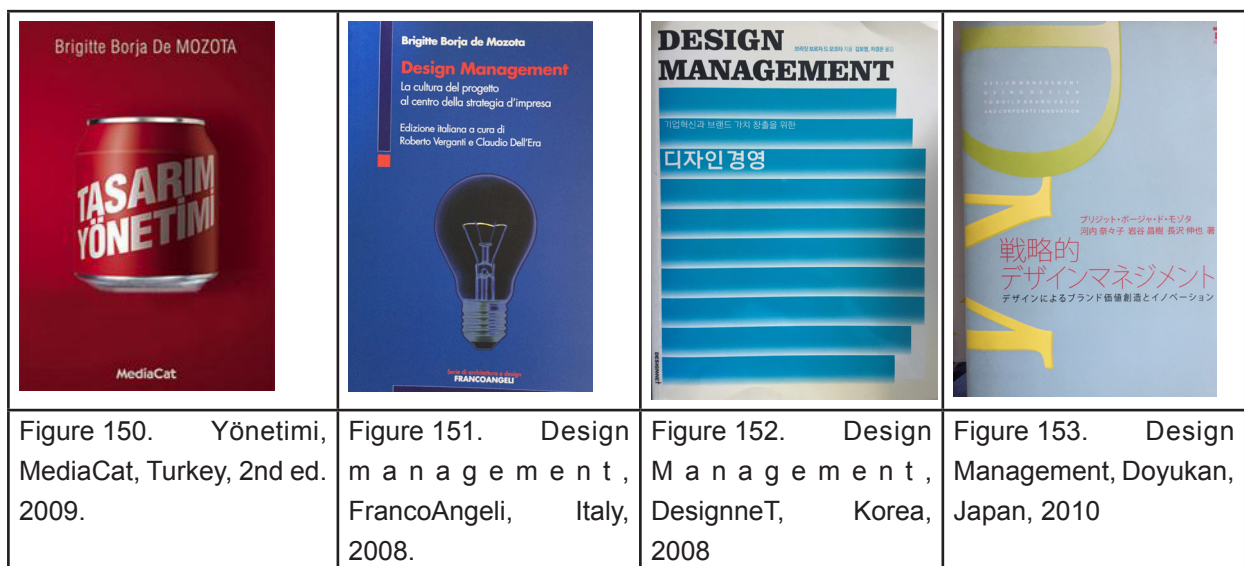
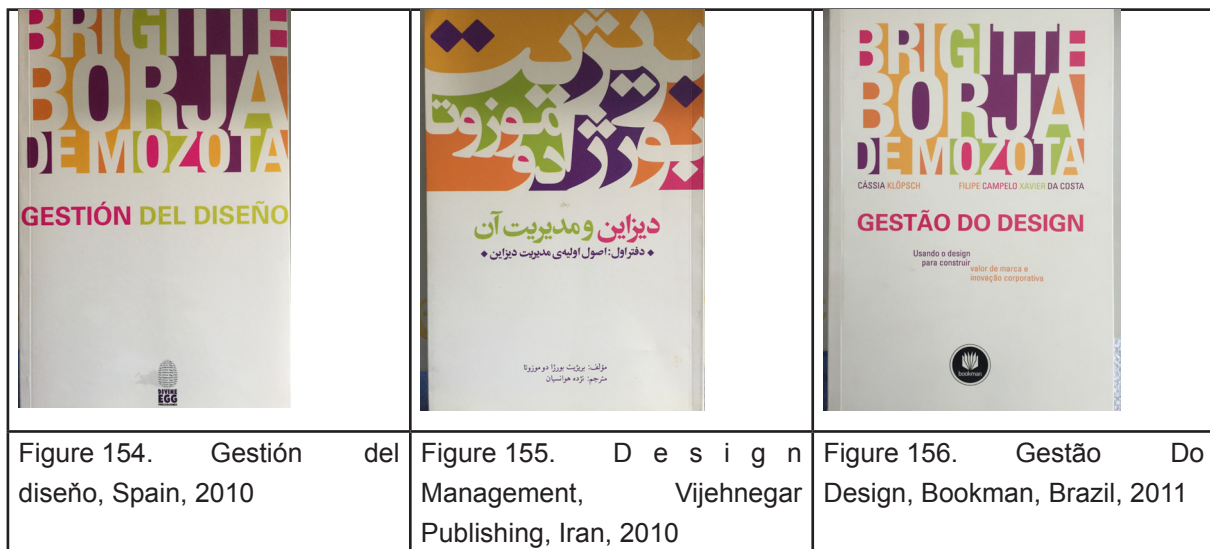


Figure 149. Quantity of illustrations in *Design Management* versus *Design & Management*, CC BY-NC 4.0

The academic status and the standing of the author as a prominent expert of design management continued to grow thanks to her enduring involvement in professional organisations, as a lecturer and invited speaker and as a published researcher (of articles and books). Without her being preliminary consulted, fellow professors in various countries had approached local publishers, which in turn had contacted the french publisher of *Design Management* to buy the local right to translate and publish the book. In 2005, the first outcome was the release of a turkish translation (see Figure 150), followed in 2008 by local translations in Italy (see Figure 151), Korea (see Figure 152), and China. The variety of the covers of those translated versions of the book visually illustrates the lack of coordination of these initiatives. The author decided to regain the initiative. She collaborated with a publisher, professors and one PhD student she had directed in her doctoral dissertation to adapt the book in Japan (see Figure 153). The text was localised (i.e. rewritten in japanese and local examples and cases were included) and her ex-doctoral design student Nanako Kawauchi created explanatory illustrations to augment the book with images. Borja de Mozota found the process and the outcome very satisfactory as the redesigned book gained in internal coherence. But the various books still lacked external coherence as they did not share a family look.



How could coherence be attained between the book’s object and subject and between the translations in different languages? The re-design of the Japanese edition was a turning point and the author also wanted to co-design the future translations with a team of designers. Thus, subsequent adaptations were directly negotiated and coordinated by the author (instead of the French publisher) who worked with local contacts, often ex-students. She also worked on her identity. For the Brazilian version of her book, a french design agency with a subsidiary there created her visual identity (see Figure 156). This “logo-isation” of her name was a complimentary offer of the Parisian TeamCréatif studio. This same identity was duplicated on the covers of the Spanish (see Figure 154) and Iranian (see Figure 155) translations. “Brigitte Borja de Mozota” has actually become an author-brand since then. In addition, to re-conceiving the text, augmenting it with illustrations and re-designing the covers, the layout of the Brazilian edition was published according to a graphic charter consistently designed with the cover (see Figure 158)



In parallel, Borja de Mozota—in her capacity as professor of the Parsons Art School in Paris—launched and directed a series of books. The objective was to foster links between Art training and research at the school and to enhance Parsons’ profile out of the school. The editorial concept was to mix and match seminal texts already published (translated if necessary), to commission articles and to handpick students’ works. In order to popularise and illustrate scientific texts, explanatory diagrams or models were designed. Some authors were reluctant to allow this popularisation of their work—which they considered as over-simplification—and sometimes lengthy, controversial negotiations had to be undertaken. Compromises were limited to what the editorial team considered understandable by the Parsons students and they insisted that the layout was graphically balanced between text and images (e.g. Figure 157). Based on these principles, five books were released in this series between 2010 and 2013.

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Figure 157. Brigitte Borja de Mozota (dir.), *Art + Design and Economics*, coll. “Collection” #5, Parsons School, Paris, 2013

Figure 158. *Gestão Do Design*, Bookman, Brazil, 201

Those writing, co-designing and editing experiences with the Parsons collection and the translations of *Design Management* helped her realise the complexity and intricacies of publishing ventures. In the iterative process of conception and feedbacks she explicitly formalised that her intent had been to make books understandable by students.

5. Designence: from researcher in design management to promoter of design management (since 2012)

In her HDR, the design management model “designence” was presented as a “convergence model for total quality”* (2000) between the design process and the organisation process. The two development paths for this model were described as 1. *evolutive*—through the gradual implementation of (a) design in management functions (e.g. in the finance or the human resources departments) in order to enhance their efficiency and (b) management practices such as assessment and control in design functions—or 2. *revolutionary* and aesthetics driven by implementing “sign management”* in order to identify an “alternative reality”*. In the 2003 book *Design Management*, “the ‘Designence Model’ of Design and Management” was also meant to converge through quality management as an active principle. The wording had changed and the evolutive path became the *managerial approach*, while the revolutionary avenue was renamed as the *strategic approach* (see Figure 159). The desired outcome was also better defined as to “overtake competitors and exceed the expectations of potential customers [...] through creative innovation and intuition”.

Design management approach	The objective of design management	Its application to quality management
The managerial approach to design management	Enhance design with managerial methods	Contribution of "qualiticians" to designers and design managers
	<ul style="list-style-type: none"> • design and organizational performance • design/brand, identity, strategy • general management and design management methods 	Data on design's impact on "zero defects" Test of quality perceived
The strategic approach to design management	Improve management with design knowledge	Contribution of designers to "qualiticians"
	Theories of form; design principles	Rethinking processes
	Creativity and idea management	Shared vision, continuous improvement

Figure 159. Designence in 2003, Table 4.4. in Borja de Mozota, 2003

In 2005, Designence was redesigned as “a research-based value model for design management [...] using Robert Kaplan’s and David Norton’s Balanced Score Card decision tool” (see Figure 160). The aim was to “bridge the gap” between designers and managers at a time when “the trend in favor of design [...] tends to forget about design management”. The paradox remained that designers still suffered “from lack of recognition and support from managers”. Thus the author’s approach was geared towards helping the design profession effect “a change from project-based to knowledge-based”. This was an important shift—from the objective of total quality to that of value—in increasingly complex environments in which “mental visualization models can help”. The model itself was no longer referred to as the designence model but as “the balanced scorecard concept model” and Designence© became a brand protected by a copyright owned by Borja de Mozota⁴⁵. That step could be assimilated to a personal repositioning from teacher and researcher in Design and Management to consultant and proponent of design management, not unlike those of Pigneur and Osterwalder when they founded Strategyzer™ to disseminate their business model and value proposition model developed in the academics into the corporate world.

45 Borja de Mozota, Brigitte. 2008. “A Theoretical Model for Design in Management Science: The Paradigm Shift in the Design Profession, from Management as a Constraint to Management Science as an Opportunity”. *Design Management Journal*.

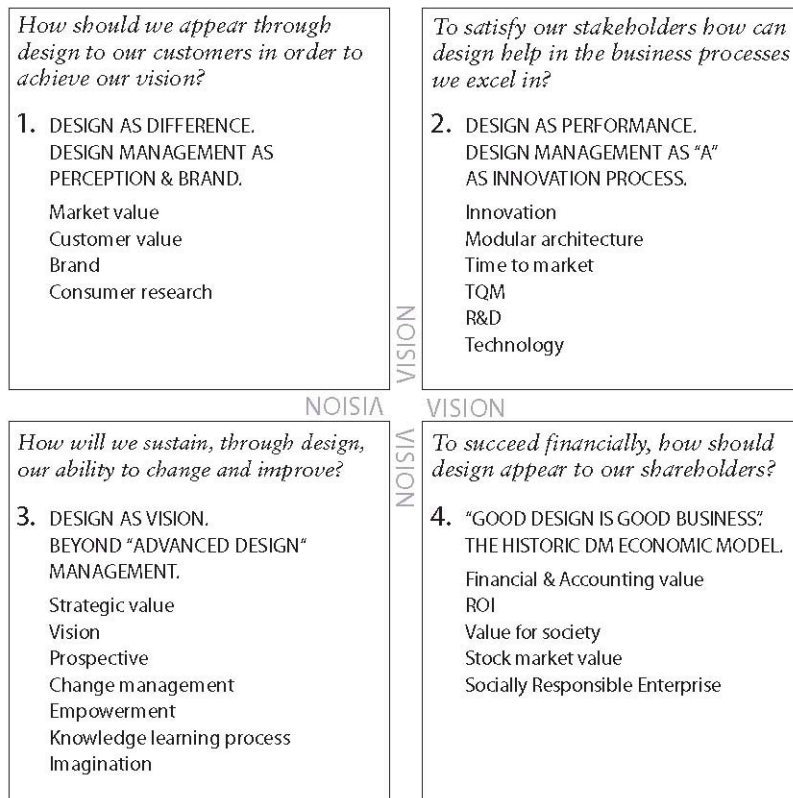


Figure 160. Designence in 2006, Fig. 3, Borja de Mozota, 2006.

Designence™ was founded in August 2012 by academic-cum-entrepreneur Brigitte Borja de Mozota. Her aim was to better manage the dissemination of her design management approach and model. Primarily, she wanted better control over the editions of *Design Management*. Her book was, and still is, widely used as a manual for graduate students and as a reference for PhD students. But it has not been widely adopted by strategic consultancies (e.g. BCG, McKinsey) which usually is a powerful communication channel to impact the strategic thinking of C-suite leaders. In addition to this strategic dimension, Designence is also an endeavour to make design management more operational for entrepreneurs and managers. So, it should be made easier to appropriate by professionals who have not read the book, for example through training and consultancy services. Borja de Mozota has been discussing this initiative with a group of designers and a coach in order to train and lead a team of initially seven to eight people.

6. Design management for corporate leaders and strategy consultants

I initially contacted Brigitte Borja de Mozota and Steinar Valade-Amland after they had published their series of seven texts about design management as weekly episodes on the professional social network LinkedIn in the first months of 2019. I wanted to know what was behind this initiative of which there are more and more similar examples on this professional social network. When I told each author, over separate interviews, that one of the main benefit I appreciated from their series was that it explained the difference between design thinking and design management I was surprised to hear that they did not feel it was the case. On second thought, I probably underestimated their frustration that design management did not make it

as a business buzzword (while on the contrary design thinking has become a “MBA darling” during the last decade). Valade-Amland put it mildly as a “dilemma” while Borja de Mozota expressed more strongly that she is “fed up with design thinking” and that “nobody cares about design management”. They both concur that there is a lack of understanding of these concepts and that “design thinking and design management are not the same, they are complimentary [...] interdependent” (Valade-Amland) and Borja de Mozota’s expertise is about giving them coherence through “the weaving between design research and design management research”. They had known each other for years from participating in design organisations and conferences. During one such conference in Ljubljana, they started an informal conversation and decided to cooperate to publish a book. Valade-Amland’s initial editorial concept was a “follow-up” of the standard *Design Management* (which is fifteen years old and therefore should be updated for this fast-moving professional field) while Borja de Mozota (regretting not having reached a high-level business audience) wanted to publish a “guide-manifesto”. They wanted a 100-page publication framed as a discussion, not another 20-page research article in an academic journal which had been the bread and butter of Borja de Mozota for the last thirty years.

As an independent consultant Valade-Amland had a different publishing experience with his first and only book, recently published: *Innoliteracy* (2018). Before the release of the english version, his book had been published in January 2016 in Denmark. The author then translated it from danish to english after it was accepted by the US publisher Business Expert Press (which he spotted on LinkedIn). It has sold modestly overall but significantly more in the first year in the US than the danish version had in three years in Denmark. But the best part for Valade-Amland is that this book has had a lot of impact on how he is being perceived professionally. It is a “discussion-opener” and gives him an automatic credibility as an expert. It is a trump card as a consultant and has allowed him to do occasional guest lectures in Denmark as well as elsewhere in Europe.

The Innoliteracy model (see Figure 161) is similar to the Double Diamond (not mentioned in the book’s index). These two four-step heuristic and iterative processes (Understanding, Relevance, Viability, and Aesthetics—versus—Discover, Define, Develop, and Deploy) initiate with a general problem (to be “reframed”—versus—“problem finding”) go through the interim phase of a specific reformulation (“proof of concept”—versus—“problem definition”) and end up with a solution. The main difference seems to be that the third step of Viability (as function) and then the fourth step of Aesthetics (as form) are explicitly emphasized by the Innoliteracy, whereas form and function are apprehended as an implied design *whole* by the British Design Council’s model which considers the two last phases of Development and Deployment as successive. These differences might be suitable to address a more business-savvy audience with the Innoliteracy model on one hand and a design-literate population with the Double Diamond on the other.

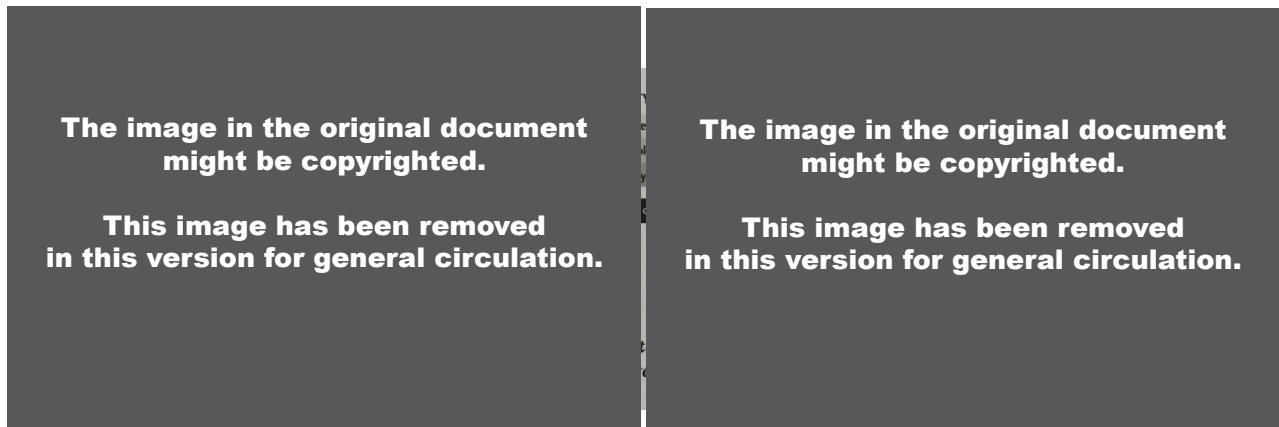


Figure 161. Innoliteracy™, fig. 3.8, p. 99 in Valade-Amland, 2018.

The concepts of *follow up* and/or *guide-manifesto* were still to be aligned when the co-authors decided to start to work on their publication anyway. They also had to agree on how they would publish it. Borja de Mozota had been working with many publishers, especially for the various local editions of *Design Management* and she was very critical towards that relation. She wanted to involve publishers and designers “to design the design” of the book. She even wanted to go beyond the book to design an “hybrid experience” between an app and a printed-and-bound artefact. The co-authors convened in Paris in February 2017 for a mini workshop between themselves to decide on the content and the structure of the publication and on how they would co-write and co-edit. Their ensuing work routine was that Valade-Amland wrote the initial draft that Borja de Mozota would comment and augment with models (references to other books and to research) and relevant case studies.

Since none of them could invest a lump sum of money to hire a designer, they had gotten in touch with design schools to help them design their design. The schools were not keen because they felt that designing a book did not fit into their curricula. Valade-Amland also had reservation about making knowledge too visual and too compact in order to make it more accessible through graphs or graphics. Even though he is not an academic, he enjoys long sentences and long books and thinks that “it is underestimating people in senior positions to say that they don’t read books” and he does not want to “make people dumber”. So the two co-authors carried on without designer anyway, and after a year and a half they felt ready to publish their material. They approached english speaking publishers to no avail. They realised it could add another year or more to the release if they insisted to publish with an imprint. But, for them, time was crucial because there was a discussion going on then, a dilemma in the design thinking and design management communities. So they decided to forego publishers but not to self-publish. Their middle ground was to publish on LinkedIn to just see what happens. In order to do so, they had to cut the book and edit it into seven portions. It did not take very long since Borja de Mozota had been familiar with the article format for all the years of her academic career. As with Valade-Amland’s Danish and American versions of his book, they were aware that they would not have any economical incentive to do it.

Still they expected “some kind of payback or success”. Success could be assessed in terms of metrics (e.g. the number of people who found it, the number of views, the reading time). The

seven-article series reached 120,000 views. After they had been first published on LinkedIn, the articles were re-published on Academia. They were downloaded three, four, five times every single day. An additional bonus was that people also downloaded other materials by the two co-authors; the interest in them as persons increased quite significantly. Even though they were invited to do so people who had downloaded the papers did not come back to the authors with comments or ideas. They did not wish to engage in conversations with them but Valade-Amland figured that the discussions took place between people who read their papers in their own existing discussion circles.

Another expected outcome (which was not explicitly stated) was that there might be a publisher who would pick up these texts and publish them as a book in English. It did not materialise. One of the feedback from a Routledge publisher in London whom Valade-Amland contacted was that “if you had published the first two chapters or three chapters, we might have been interested. As long as you have published it all, it’s dead.” An unexpected outcome was that the Danish author was asked if he would write an essay based on the LinkedIn series for the Danish design research publication *Artifact*.

In short, what started as a book project ended up being published as a seven-article series (“Design; a business case. The Design Management Series”, 2019) on a professional social network. It reached a large circulation of 120,000 views but mainly through the concentric circles of the existing professional and academic design communities of which the two co-authors were already members.

7. PMC: a strategy aligned on the needs of the writers missed its intended audience

The two authors could not completely agree on the purpose of their publication or to whom it was intended, but they wanted to work together anyway. They could neither find publishers who would fund and edit them, nor design schools who would help them with their publishing project. Matter-of-factly they adapted their content to what they considered to be the only viable option to publish in a timely manner; i.e. LinkedIn articles. In order to do so, they had to conform with guidelines (there are a lot of tips and texts on this network on how to successfully publish for this network) and fit in pre-established templates.

This kind of paper is similar to what the popularising medium *The Conversation* publishes (see Chapter 22), except that they did not match their *formal* standards in terms of illustrations and of simplicity of style (the texts were not co-written by journalists). It could be argued that their articles were halfway between not being research articles (as the authors had declared) and popularisation. They did not either match the *content* of confirmation articles as can be found in *Nature* and *Science* (see Chapter 21) because the authors did not go through the strict peer and editorial processes of these journals. In other words, the design of these seven articles was deviant both in terms of form and of content as the misaligned standardisation-ad hoc model shows on the PMC (see Figure 163). Unfortunately, this innovation (I consider deviance as such) did indeed meet the first criteria of creativity but failed to meet the second criteria of

perceived value for the intended users (corporate leaders and thinkers outside of the author’s communities).

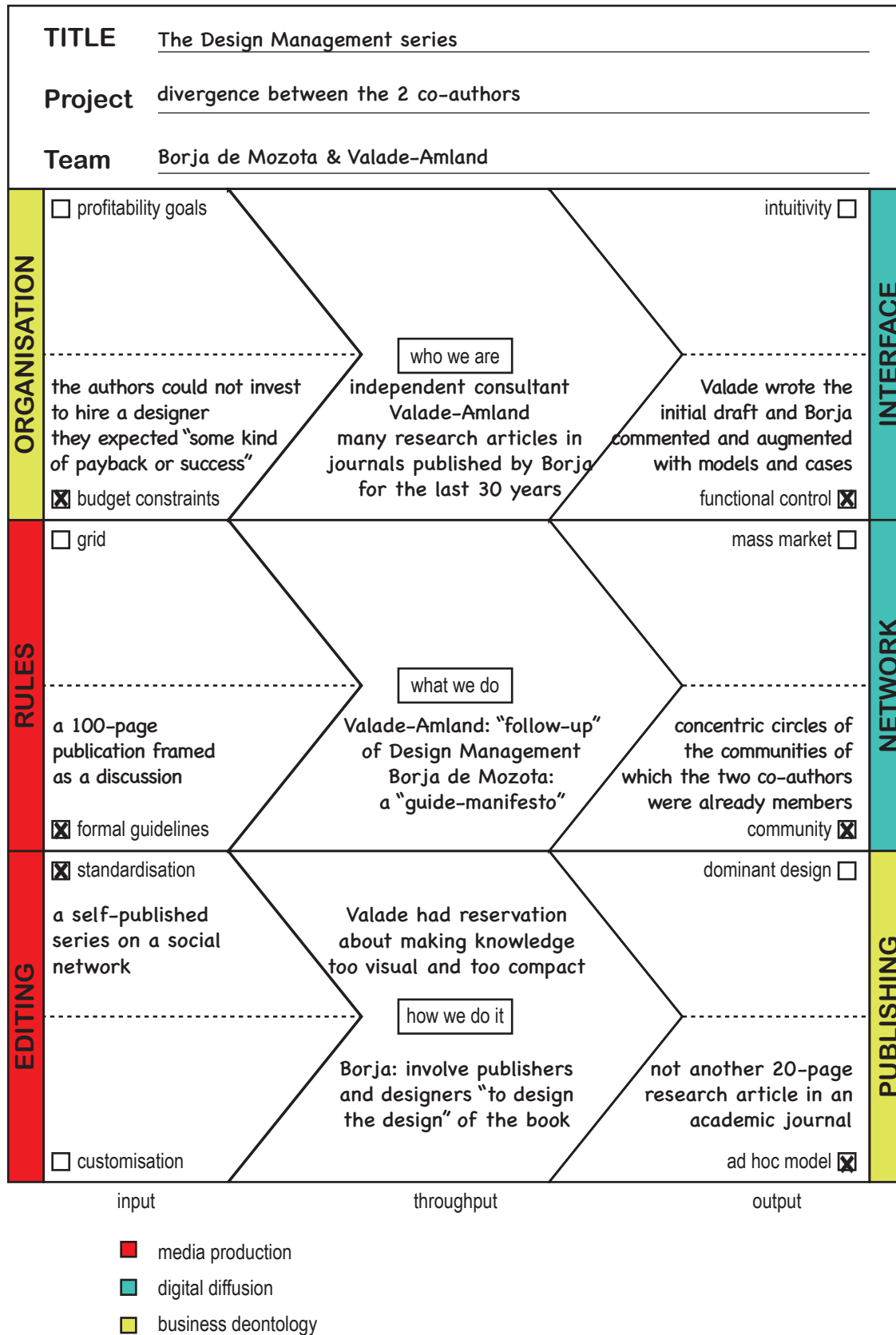


Figure 162. The publishing canvas for “The Design Management series”

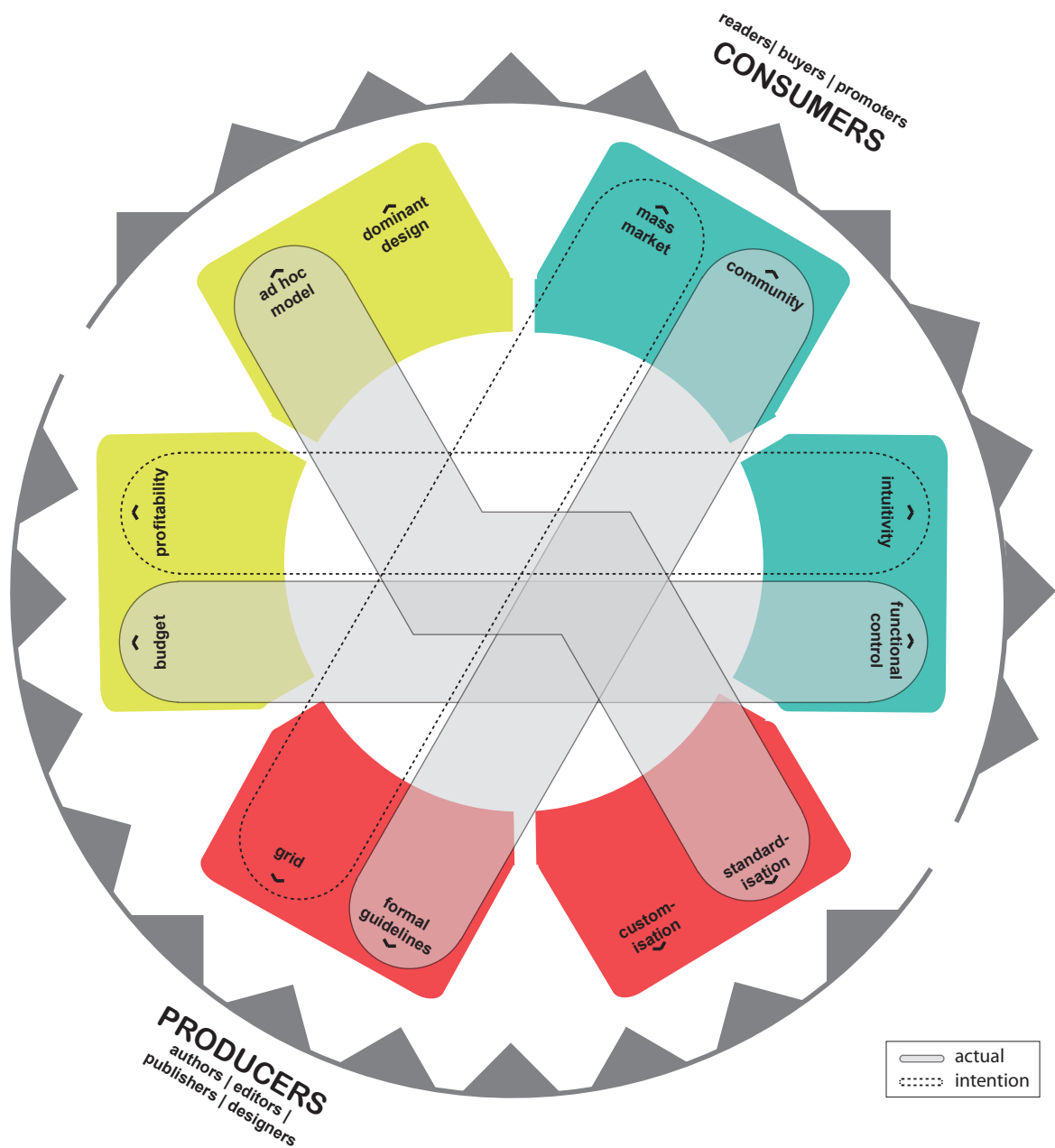


Figure 163. The PMC for “The Design Management series”

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8.2. Appendices

See Appendix 2

Chapter 19.

Publishing the Écrdil conference

1. Cooperative publishing of the book “Version 0”

My framework of thought, when I proposed to contribute to the publishing of Écrdil, was design thinking. I was considering the three dimensions of innovation in knowledge publishing; i.e. design desirability, technological feasibility and economical sustainability. The cultural background of the stakeholders who organised Écrdil was digital humanities (even though the term itself and its implications are a topic of discussion in this community). They considered the design and technological dimensions of innovation but adhered to the political stance that academic publishing must be free, which hindered any possible reflexion on the third dimension of the business model.

Firstly, in terms of aesthetics, there was a consensus that conference proceedings are not a desirable output and that formal creativity should be encouraged. There was also a similar agreement that the throughput of editing proceedings would better be designed more cooperatively and to express the diversity of the various talents involved in this conference on publishing. Secondly, the technological infrastructure, derived from a journal publishing system, was (as far as I know) unprecedented for a booksprint. Based on the tenets of free and of digital humanities, it was effective in eventually releasing *Version 0* but it remains questionable whether it was more efficient than existing and tested wysiwyg commercial software suites. Thirdly, and even though free was a default “business” model, I shall question what type of value (qualitative and/or quantitative) it conferred to the book.

2. “Version 0” is not a conference proceedings

2.1. How to innovate in publishing conference proceedings?

The production of the book *Version 0, Notes sur le livre numérique* had started during the conference “Écrdil 2018 : le livre, défi de design : l’intersection numérique de la création et de l’édition” (“the book, a design challenge: at the digital crossroad of creation and publishing”*, held in Montréal on the 30th of April and 1st of May 2018. My intention was to organise a booksprint within the conference and to account for it in this dissertation. This book was designed to be a reflexive feedback of what was presented and discussed during the conference itself; i.e. how books have been transformed and how publishing processes have been modified in the digital environment. I had also formulated the hypothesis that design thinking and co-design were relevant in this context. In order to validate this claim I wished to design an original prototype to mediate the research findings presented at the conference. I also wanted to confirm that it was possible to publish preliminary proceedings *during* the conference.

2.2. How could conference proceedings be supported by an unsustainable business model?

In her 2011 essay *Planned Obsolescence*, Media Study researcher and publisher Kathleen Fitzpatrick studied the issues surrounding academic publishing. For her, the paradox that monograph is no longer a viable medium but is still a requisite in an academic career means that the monograph is *undead*. This is an existential crisis affecting the very foundations of HSS which do not aim to “produce knowledge more efficiently or produce more efficient knowledge”. Instead, better means of interaction should be sought for what is primarily “user-generated” content, meant to be shared with an audience “composed of the same people who are producing the content in the first place”.

A relevant example of a book about book design—written by experts in books and design for their peers—is *Design et innovation dans la chaîne du livre* which was published by the team of the Nîmes university who organised the previous Écrdil conference in 2016. I had studied this artefact which form should be designed to reflect the content and vice versa. Its co-editor in chief Stéphane Vial coined the term *catal-acte* to describe this endeavour to design a hybrid of exhibition catalogue and conference proceeding. And, in my opinion, the actual book did not express the full potential of this concept. This is to get a better practical grasp of proceedings publishing that I initiated this action research. This case study is part of my methodological approach that encompasses learning by doing and reflexive critical analysis.

3. Publishing “Version 0” was a co-creation design process

Écrdil 2018 was a complex and transdisciplinary project involving six partnering research and education organisations from four different disciplinary backgrounds, a six-member organisation board, a project team of nine people, and contributions from forty-six participants. Governance and project management issues have quickly sprung and it proved necessary to agree on explicit ethical principles. Roles and responsibilities for the booksprint process were defined for everyone and at three levels (the editorial board, the project team, and the participant-authors). For example, a copyright agreement was submitted for approval to the participants and we chose a Creative Commons licence for the book *Version 0*.

The editorial board decided, in January 2018, that the form and the structure of the first book itself would be an editorial outcome of the Écrdil conference (the controversial term “proceedings” was avoided). It was also deemed desirable that it should be elaborated during the event and co-created with the participants (during a booksprint). So the creative co-design workshop was scheduled on the second day of the conference in May. It was set in five sessions of about half an hour each—alternating divergence and convergence—and to which participants were invited. During the discovery session (convergence) twenty-two volunteers were dispatched in three teams. Each team was asked to write a design brief. The recommendation was that it had to be focused enough so that the topic addressed was explicit but not too narrow either to leave room for creativity. The output were the three following questions:

- how to incentivise curious readers to appropriate the contents in order to be empowered?
- how to get the actors of publishing, design and literature together in order to build commons for an *epistémè*?
- how could academic readers and publishers discover a cabinet of curiosities in order to grasp the idea of what digital reading, creation and writing are?

With this brief in mind the participants proceeded to the second session of ideation (divergence). They started to brainstorm together (about twenty participants). Then they were invited to a personal exercise of ideation (see Appendix 3, section 13). During the following intersession the facilitators rearranged the hundred or so ideas into fifteen concept clusters (convergence, see Table 12). The fourth step of this session was dedicated to placing the concepts on a space materialised by two plus-minus axis; i.e. importance and ease of implementation. The aim of this conceptual mapping was to determine what should be included in the proof of concept (the hardcore of the future book) to be edited during a two-day booksprint.

Table 12. Ideation and funneling by design at Écrdil 2018

2 nd session: ideation	3 rd session: conceptualisation	4 th session: concept prioritisation
Customisable (by CSS) printable book Poetical taxonomy Non-hierarchisation of content Modular typesetting Cell membrane Hybrid on platform → continuing the event Provide an understanding of something that has happened or is happening Informal moments around the conference	Landmarks Mapping Metaphors Granularity Random Ongoing editing Traceability of sources Portability Hybridity Heterogeneity Conversation Typography Plural paths Gamification Multi- and hyper-	Landmarks (index, keywords) Granularity (fragments, modules) Conversation Typography

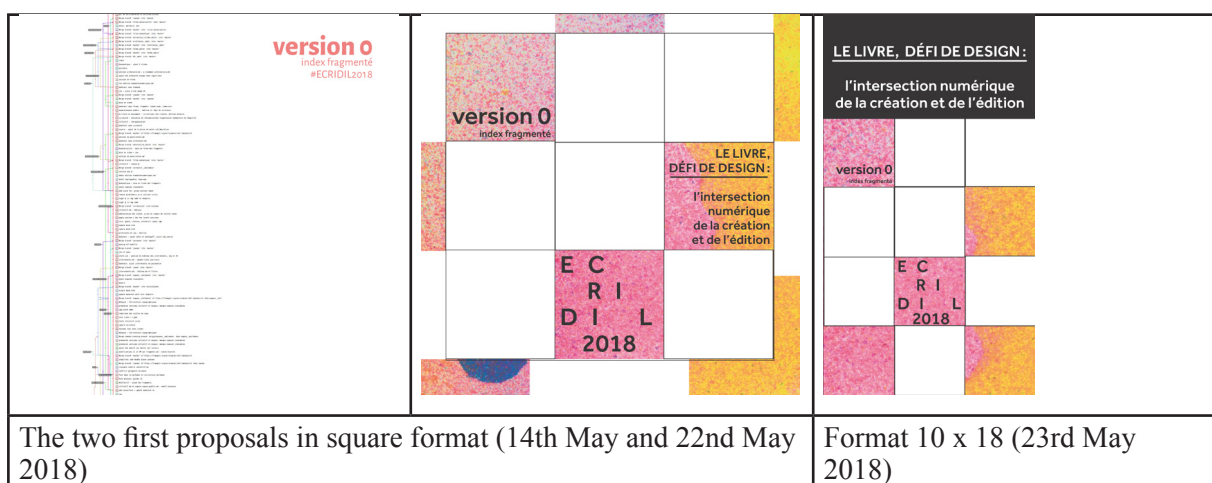
The ultimate fifth session of the workshop was based on the well-worn design practice of prototyping. Participants were asked to design an outlook of the book: 1. content—to write a table of content and 2. form—to sketch the layout of the double page spread (as a model example of the graphic charter). Participants worked in two groups and each came up with a Proof Of Concept (POC). Time was too tight to merge these two POCs into a more polished Minimum Viable Product (MVP) prototype. The general features of these two roughs were as follow:

- the features are materialised by images which convey sensoriality (moodboard) and the pace of the reading journey is punctuated by sections corresponding to keywords. Within each section there is a system of units as boxes-within-boxes. Illustrations take precedence over text by design. The structure hinges on images (e.g. visual documents or photos) or an “image of the text” (see Souchier, *image du texte*; e.g. a quote or a tweet augmented by keywords and/or text fragments written by the editors);

- the layout is structured around glosses relating to the text. They can be set in different ways according to a grid (e.g. as a side column or as a block). The digital format remains “liquid” as per the principles of responsive design and the printable book is customisable at two levels: first its density (i.e. quantity of information and level of detail) and second its topics (i.e. predetermined or customised settings).

Eventually *Version 0* was structured around the fifteen concepts (which can be understood as keywords) that were defined during the two-day booksprint. The But although the second prototype draft was explicitly intent on customisation the published electronic version does not allow content downsizing. And since metadata (index, semantics, author, citation, etc.) were not tagged the text is not “liquid”; i.e. it can not be restructured or reformatted on the fly to automatically fit the variety of screen formats which proliferate in the digital space.

The six successive drafts of the cover (see Figure 164) provide a chronological account of the format and layout of *Version 0*, a short design history of this project. This is an aspect of book making that epitomises a graphic design process—a watermark of book publishing. It unveils a major aspect of the bookish identity. Initially the square format had been chosen to insert many illustrations according to the “*catal-acte*” concept and was somehow confirmed by the outcome of the creative design workshop (to give illustrations precedence over text and to structure the text around glosses). The first square draft was a representation of the inner structure (as displayed by the digital publishing tool) and the second was a composition of square fragments resulting from the deconstructing of the conference poster. By mid-May it became obvious that a two-column layout could not be created with PagedMedia and consequently a square format was no longer desirable. Therefore, a rectangular and more vertical format was adopted. The third and fifth drafts were rectangular adaptations of the first and second drafts. The fractal metaphor of the fourth draft did not draw much attention amongst the stakeholders. Eventually, the actual cover is a visual synthesis of the previous drafts; i.e. the structuring tool and the deconstructed-recomposed fragment of the conference poster. This pragmatic decision was taken seven weeks after the end of the booksprint, in parallel to the finalisation of the body of the book.



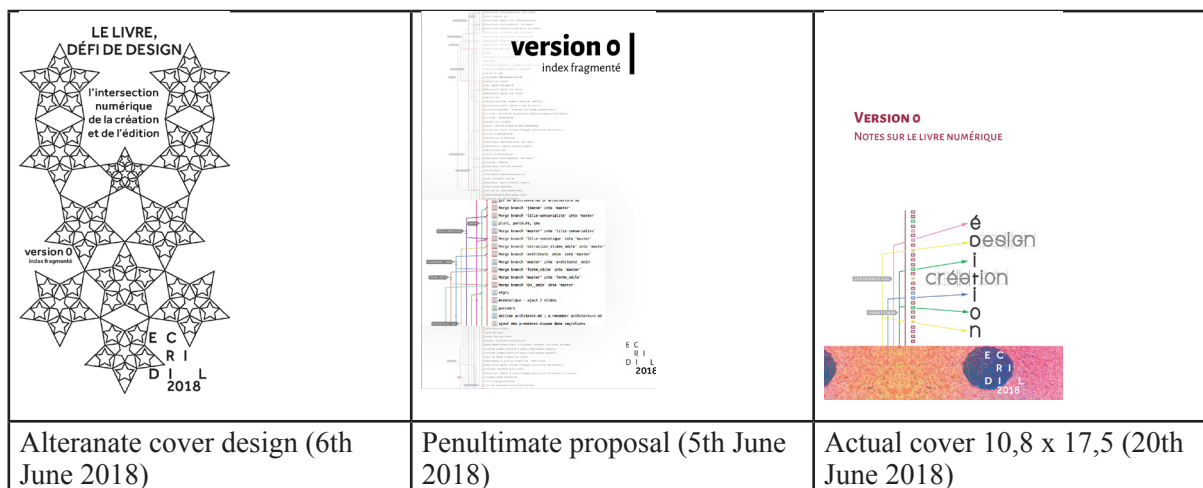


Figure 164. Six drafts of the book cover for “Version 0” (from 14th May until 20th June 2018), CC BY-NC 4.0

4. Feedback on the Écrdil booksprint

4.1. What does it take to organise a booksprint?

The experience of publishing *Version 0* was an opportunity to design and test a booksprint. The *charette*—an iconic design practice—appeared to be a practical alternative means to harness energies within a limited timeframe. I assumed that it was a prerequisite for the feasibility of publishing a book in two days. Two other requisites (which were not explicitly stated beforehand) happened to be a well-formed definition of the desired output of the creative design workshop (which could be straightforwardly edited in a double spread template with a predefined structure) and an operational typesetting system. The editorial team started the booksprint with none of the last two requisites. Since the editorial design workshop had to be shortened the day before, we did not have an operational template framework. And we were beta-testing PagedMedia which proved to be longer to use and more complicated than expected for our book format of choice (square with two columns per page).

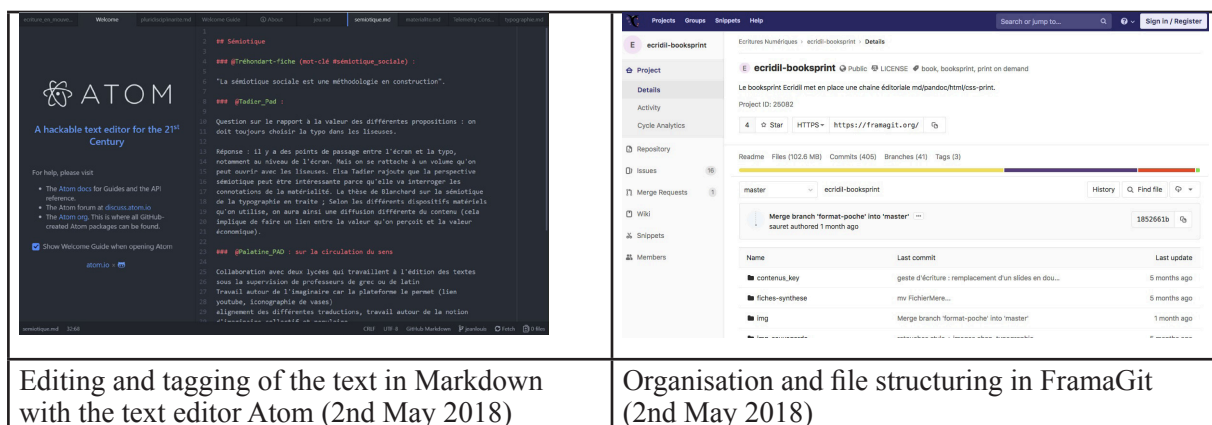
4.2. Is free more efficient than commercial wysiwyg?

The first day of the booksprint it took three runs to merge the two outputs of the workshop into a practical table of content (see Appendix 3 section 14). In parallel, and in addition to designing the meta-structure of the book, we were working on the “raw” texts available on Framapad. They had to be edited (spelling, grammatical and typographic corrections) and tagged in Markdown so that they could be exploited in the various software systems selected for this project. Most of them are part of the “suite” of tools of the online journal *Sens Public*.

We continued editing and tagging the morning of the second day. In the early afternoon a first consolidated run was done in Framagit. Later in the afternoon, a first draft of the first section of the book in Git could be visualised. This video-projection was commented and discussed by the team. It was a fair overview of the text structure and we could see where we were heading. But

it was too cluttered in terms of layout and typography to be formally useful. By the evening, the first section was fully edited and tagged and the others were at various stages of completion. We decided to finish the two-day sprint with a second visualisation. The video-projection was ready by the evening. We could see that the CSS code had to be debugged and six sections (chapters) out of the total fifteen still needed to be edited and tagged.

Wysiwyg softwares (e.g. Microsoft Word, Adobe InDesign) integrated in suites (e.g. Microsoft Office or Adobe Creative Cloud) allow to simultaneously go back and forth between style and structure. Contrarily to them the tools which can be integrated in Git (see Figure 165) are primarily structuring (i.e. in terms of design they are more functional than style-oriented) and impose an unilateral direction from structural semantics towards formalisation. This design paradigm of form following function is empowering as it frees users from proprietary tools and formats imposed by the “architexts” of commercial softwares (Jeanneret & Souchier, 2005). Designer and digital publishing expert Antoine Fauchié and director of institutional relations for the Cairn publishing platform Thomas Parisot concur that—thanks to Git and for those willing to “participate in systemic transformations”^{*} rather than using and not questioning proprietary tools—“the chain no longer rests on a specific software but on an assembly of replaceable programs”^{*} (2018). This controversy between an integrated software chain and a modular system made of replaceable elements bears similarities with the classic philosophical debate between voluntary servitude (from which commercial software providers such as Microsoft, Adobe or Google benefit) and a well-earned freedom for those who make the effort to break free. I prefer a middle ground between the chain and the assembly that I call the suite. I acknowledge that this is a lukewarm political stance, but it has a pragmatic tinge to it. It is the possibility to choose the better-adapted electronic tools in a given environment and for a particular situation—the most efficient—and to use them as a suite in which each module is (preferably) interoperable. This approach is also a pragmatic way to avoid the ethical dilemmas that the proponents of free are faced with when some of their champions decide to sell off to commercial companies—as was for example the case when GitHub was acquired by Microsoft in June 2018.



Editing and tagging of the text in Markdown with the text editor Atom (2nd May 2018)

Organisation and file structuring in FramaGit (2nd May 2018)

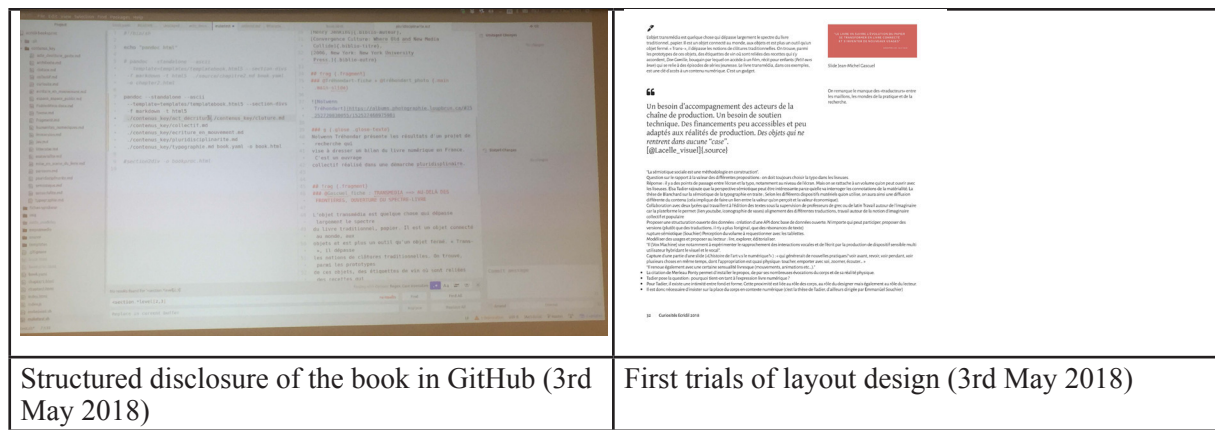


Figure 165. The tools of the Booksprint, CC BY-NC 4.0

I concur with the two digital publishing experts Fauchié and Parisot that “a set of practice and culture would likely hamper a person working in the publishing industry to adopt the principles presented”^{*} (i.e. iterative journey, modular process, multidisciplinary team) and to learn system administration abilities. This resistance to change can be understood as a drag. But it is also as a resistance which is meant to preserve the values and abilities inherent with the publishing profession and an agnostic attitude towards the technology and the format of the medium (print and/or digital). There is a distinction between book publishers and software publishers. Their trade is the computing process, while the business of the formers is the design of books (an editorial form with a long legacy in the fields of information and communication). Amongst the book publishers’ skills, I feel that editorial design and graphic design are more important than the software architecture of the publishing process. Publishers should not divest themselves from this non-trivial dimension of the “image of the text”, those visual dimensions of typography and book design with which book professionals like to play.

In the case of *Version 0*, the tools that we used demonstrated their ability to release successive versions. On one hand, all the versions are saved in a transparent manner. They are available to those who wish to access them and get inspired or reuse for their own developments. This is a potent dual logic of knowledge accumulation and learning by trials and errors (our own and those of others). On the other hand, the open architecture of Git allows collaboration—on site and/or remote and in real time or asynchronous—simultaneously for coding functionalities and editorialising content. Those properties are particularly valuable for distributed publishing where online updates are desirable (e.g. periodical publications or web publications) but less so for print publishing which represents a stable state of completion. With the system we worked, we were not able to publish the book in the chosen format (square and two-column) and within our desired timeframe (two days). In other words, the rules of the game hampered our capacity to deliver what we wanted, and we were not able to break free from them. In design thinking terms, the technology is too new and there are not enough publishing use cases to draw conclusions on the technological *feasibility* and the design *desirability* of adapting a Git modular suite for book publishing in general and in our particular case of a booksprint.

The tools of Écridil 2018 and of the booksprint are related to technical skills and a computing culture of “free” (e.g. Framagit) as well as conversational practices inspired by agile computing development (e.g. Slack). They are based on the two tenets of “free” (e.g. Twitter, Slack) and “open” (open access and open source; e.g. Framapad, Git). These digital tools have proved potent for communicating, editorialising and coordinating over time (synchronous and asynchronous) and space (on site and remote). However, a booksprint is based on collaborative work, unity of place and unity of time. So, it would have been desirable to use more intuitive tools immediately appropriable by all the members of the project team. In other words, the tools of the booksprint should have been more teleological and chosen after an exploration of “the field of possibilities and attempting to identify the most desirable”* (Le Moigne, 2018). Instead, the field of possibilities was actually limited by the tools. For instance, the issue of adopting (or not) certain tools of the online journal *Sens Public* was never discussed; it just happened.

One of my initial hypothesis was that co-design (see Appendix 3 sections 1-11) was fit for book professionals and experts to create a book from a conference on books in the digital context. It was about applying creative methods to initiate and formalise an editorial process. Participants have gradually plaid the proposed game. They were benevolent and somewhat cautious first and warmed up to the experience and got more enthusiastic and engaged as the workshop went on. In design thinking terms, the outcome can first be understood as a social arrangement rather than as a business model (as described in management science); i.e. as a “community arrangement”* (*agencement communautaire*, Zacklad) or a “socio-editorial model” (Chartron). The second dimension of technological feasibility was de facto limited to adopting untested free and open computing tools, rather than as the possible emergence or use of tools adapted for a booksprint. The third dimension of design desirability was compelled by the decision to follow a more social than economic model which pointed to an available free and open technological option (PagedMedia). It eventually resulted in our inability to publish the book in the square and two-column format that was initially deemed as desirable in terms of graphic design. In addition, the settings proved difficult to adjust and the aesthetic could only be taken care of at the end of the publishing process, instead of being integrated during the creative co-design workshop of the booksprint.

In a design thinking perspective, the mediators—i.e. the author-designers and editor-designers between the author and the reader—are more focused on the reception than on the production of the work. The Écridil 2018 project team was not strictly speaking a mediator; it was a facilitating instance for the community of the conference participants (both co-designers and readers-to-be of the book). The ensuing scrupulous accumulation of materials that could be used at a further

stage and with a level of serendipity is indeed more a feature of bricolage (“it could always be of use”^{*} for Levi-Strauss) than of knowledge design (“an integrated approach” for Schnapp).

5. What is the value of “Version 0”?

The challenge of the subscription model by the Article Processing Charge (APC) is a specific example, relating to the field of academic journals, of the overall destabilisation of the traditional publishing models in the digital environment. It has also had a transformational impact on user practices. Chartron highlighted that the sustainability of projects “once the time of subsidies has elapsed”^{*} (2016) remains random. Burdick et al. wrote along the same lines that “the challenge for the Digital Humanities is to develop the evaluative metrics for legitimizing and credentialing” (2012). Publishing *Version 0* partly rests on subsidies (CRSH) and on the voluntary unpaid work of the organisers and of the editorial team for the rest. Therefore, profitability was not an issue, and overall the academic community does not show much interest for economic sustainability. By extension, quantifying and qualifying readership was not addressed either and no system was implemented to collect metrics.

In this specific context in which everything is free for the reader and no metrics is generated, shall it be concluded that the information published in *Version 0* is worth nothing because its value is neither assessed nor priced? Even though the value of the book *Version 0* is difficult to assess quantitatively, it would still be qualitatively *valuable* as it could generate “teachable knowledge”. In this sense, teaching could be an indirect means of knowledge dissemination through the double mediation of the book and of the teaching itself. Lemoigne (2018) noted that knowledge takes its value “starting with a sensitive experience which pragmatically becomes a conscious project that is eventually transformed into *valuable* [our italics] knowledge (or teachable)”^{*}. For Lemoigne the value of knowledge books is rhetorical (in reference to the Barthesian definition of rhetoric as a chiasmus of “a demonstrative block framed in between two slices of ‘emotion’”^{*}); i.e. a “conscious project” sandwiched in between one “sensitive experience” and another deeply human experience: teaching.

The book *Version 0* was neither published according to a publishing business model nor to a socio-editorial *structuring* model. It got *built* as a heuristic publishing project which had been shaped by the action of the participants themselves. As per the spirit of design thinking, they were an ad hoc team of voluntaries self-eco-organised around this project. It was transdisciplinary with students and researchers of various levels of seniority and different disciplinary backgrounds (ICS, literature, design, digital publishing...) and “multidimensional” skills (design, editing, coding...) who all had previous publishing experience. This is a kind of experiment similar to what Saras D. Sarasvathy describes in her theory of effectuation “as a way to reduce and/or eliminate uncertainty” (2001). This pragmatic⁴⁶, non-predictive, non-determinist and serendipitous approach rests on the “contingent aspirations and the entrepreneurial imagination”.

46 “The intellectual lineage of the ideas influencing the theory of effectuation presented in this article includes a very large and impressive list of thinkers, ranging from the pragmatic philosophers at the turn of the century to current leaders of thought in economics and management: Peirce (1878), James (1912), Knight (1921),

6. PMC: aligned strategies typical of the digital humanities

Overall, in the media economy in general—and more specifically in the digital media economy and the free economy—a tautological principle seems to prevail that “the more it is used, the more useful it is”* (Chartron, 2016), “the more active a user is, the more authority he acquires”* (Vitali-Rosati, 2016) or for Bomsel (2013) “the demand [...] is also a function of demand”*. There was no network effect as such for the two Écridil conferences (editions 2016 and 2018) in the sense of a “snowball effect”. I could instead suggest a community network effect. The participants actually enjoyed getting together during the conferences and appreciated finding what they discussed in another form, after the event was over. This is a feature of transmediality. As is often the case in HSS, a publication like *Version 0* is more a cohesive tool than a direct means of dissemination. The three cornerstones of *Version 0* are strategically aligned (see Figure 167). The “budget”, “formal guidelines” and “customisation” are built around an integrated one-off communal organisation from organising the conference, running the booksprint and to publishing the book. The aligned strategies shown by the PMC are an illustration of an orthodox self-reliant digital humanities project.

Lindblom (1959), Simon (1959), Vickers (1965), Allison (1989), Weick (1979), Nystrom & Starbuck (1981), Buchanan & Vanberg (1991), March (1982), Burt (1992), and Mintzberg (1994).” (Sarasvathy, 2001)

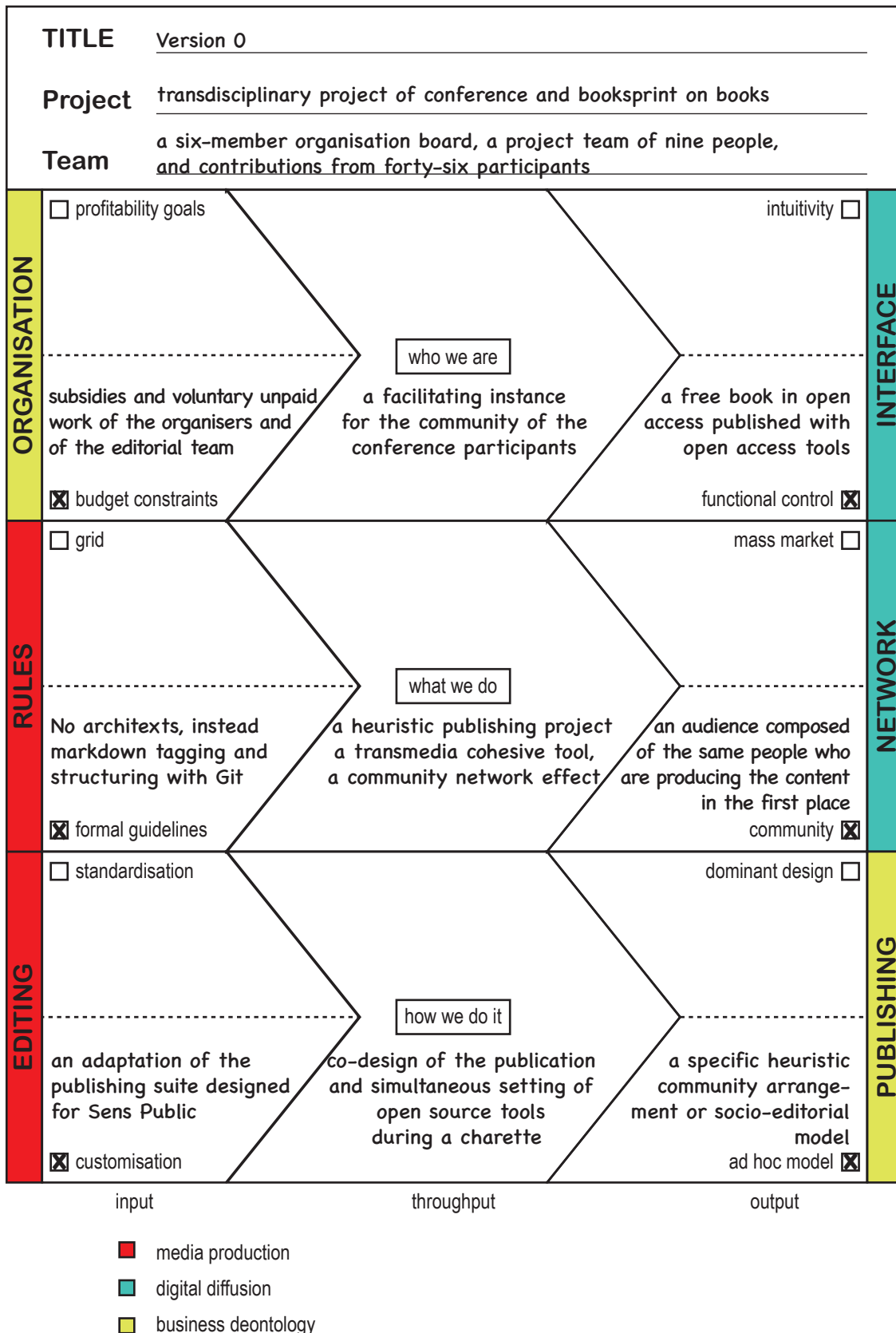


Figure 166. The publishing canvas for *Version 0*, CC BY-NC 4.0

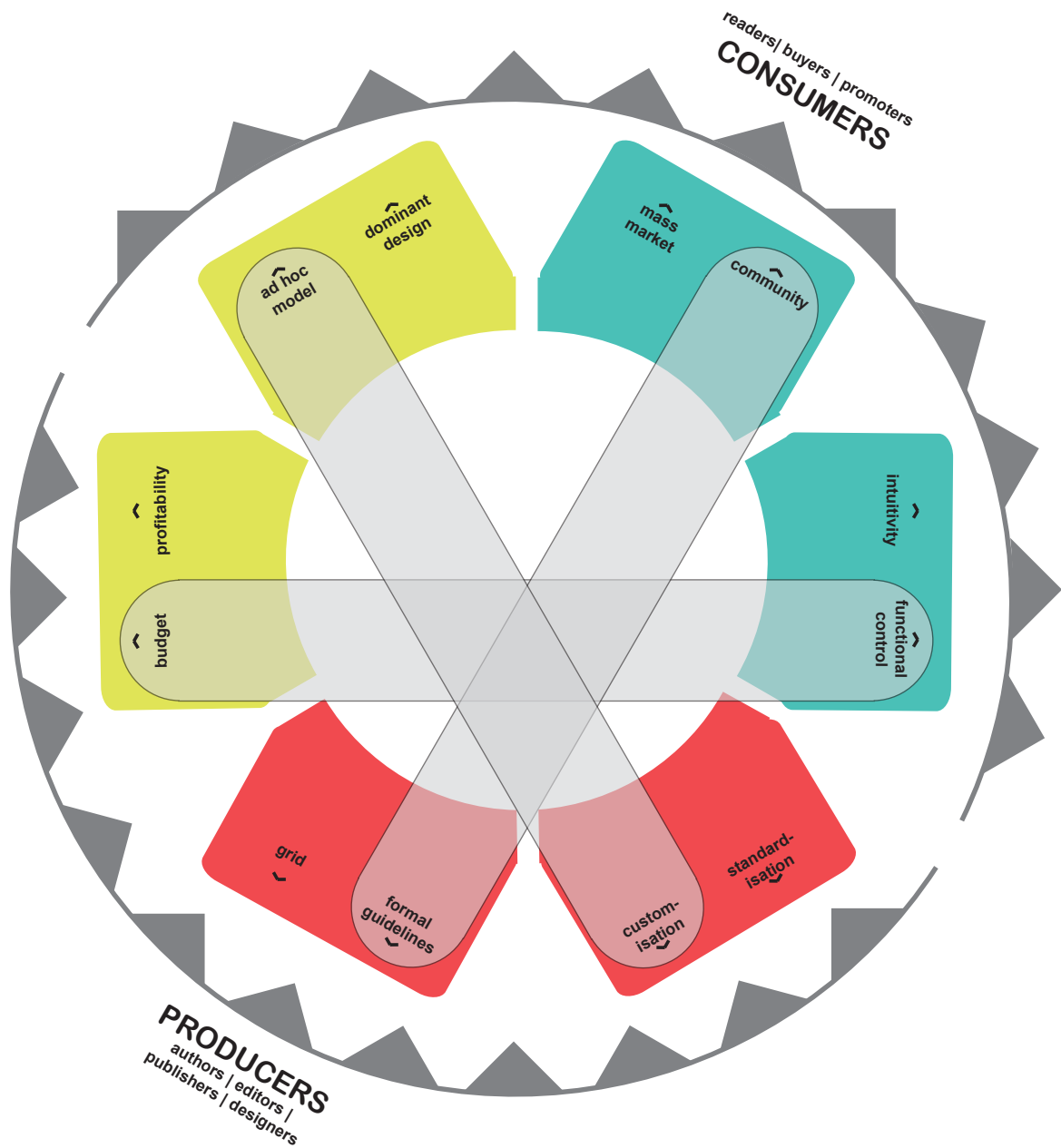


Figure 167. The PMC for the book *Version 0*, CC BY-NC 4.0

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7.2. Appendices

See Appendix 3

Chapter 20.

Cumulus design conference in Paris

1. Publishing as an afterthought

This case illustrates that the importance of publications for institutions of research and education should not to be confused with the importance of publishing. In other words, the organising committee was open to sollicitations to experiment, but eventually demonstrated little interest in developing knowledge design for their conference, as long as the publication was taken care of.

2. Delegated centralised publishing

Cumulus was founded in 1990 as a global association of universities and colleges of art, design and media and currently consists of 299 members from 56 countries. The 2018 yearly conference was organised by the newly formed Césaap (a group of the four Parisian state colleges spanning the scope of Cumulus) between the 11th and the 14th of April in Paris. The organising committee was structured around a limited executive team and nine commissions. One of them was dedicated to scientific communication. This complex organisation had been put in place with great effort and could not be modified in any way to accommodate an original publication. I approached the people in charge of the Cumulus conference in Paris in the last quarter of 2017. The conference was scheduled for the spring of 2018. My aim was to participate in—and partly initiate—an associated publishing project outside of the scope of traditional conference proceedings. My proposal was to design and publish an experiential book inspired by *d.confestival the book* (2015. HPI School of Design Thinking. Potsdam, Germany) and/or to design a publishing experience such as a booksprint inspired by *Quelles humanités numériques pour l'éducation ?* (Bourgatte, Michaël, Mikaël Ferloni, & Laurent Tessier, éd. 2016). In my first discussions with the Conférence des écoles supérieures d'arts appliqués de Paris (Césaap) there was more interest to publish an experiential book about the Cumulus conference in Paris. So, I worked with the Césaap during the last quarter of 2017 on the inventory of Cumulus publications in order to design an original book within the existing Parisian framework.

A partial editorial analysis showed that there are different series such as the “Cumulus Think Tank Series” and the “Cumulus Working Papers” which are different from one another and accommodate dissimilar issues or books (printed and/or electronic). For example there are 68 pages for the working paper *More for Less—Design in an Age of Austerity* (Dublin, 2013) and 156 pages for *Cultural Diversity—Social Engagement—Shifting Education* (Aveiro, 2014). The size of the papers (or articles) varies in terms of pages and number of signs and diagrams or illustrations. There are also great discrepancies in the “Think Tank Series”. For instance the 2015 *Changing Paradigms: Designing for a Sustainable Future* and the 2016 *Bearer of Internationalisation* range from 378 pages to 90 pages and one is printed in black and white while the other is in colour. Here too the number of pages of each paper is different and even their templates are

not the same. The electronic editions can only be found on the Cumulus website which is not searchable and the individual papers or articles are not available separately.

In order to devise an editorial strategy to publish the 2018 “To get there: designing together” conference, I asked a number of questions and raised some issues. Was the series “Cumulus Think Tank” replaced by the “Cumulus Working Papers”? What is the transfer of copyright between the authors and Cumulus and/or Césaap? What is Césaap committed to in terms of publishing? When I asked Césaap in mid-December, they were not aware of these issues and could not answer. So, they asked the central Cumulus body. They were told that the responsibility of the Césaap was to edit the texts and they would then be typeset and published by the Cumulus organisation. So, there was no opportunity for publishing, and even less for innovation. That was the end of my project with Césaap. I found the 2018 “To get there: designing together” 1,214 pages conference proceedings on the Cumulus website (I visited it in September 2019). They were published with a 2018 copyright as the fourth issue of the now bi-annual “Cumulus Conference Proceedings”.

3. Sources

3.1. Bibliography

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3.2. Appendix

See Appendix 4

Chapter 21.

“Nature” and “Science”

1. Robust science for fellow experts and for non-expert peers

Nature and *Science* are so similar in their features—what they publish and how they publish it—that they can be analysed together. A paradox is that they blend editorial and advertising contents and must, at the same time, keep them tightly independent. They are confirmation journals by design, not disruptor of science. This is partly due to a human bias (the conforming attitude of people in large groups) as articles published in these journals tend to be signed by a large number of co-authors. On the contrary, innovations are more often the deed of “deviants” who work alone or in very limited groups and do not necessarily comply with the formal rules of their discipline and of the peer system of science research.

Machine learning is on the edge of proving capable to unlatch latent and hidden knowledge unsupervised. In other words, not only could IA compile information, but it would also be able to innovate by manipulating vast amount of data and establish new connections between them. This possible transformation would raise ethical issues about the social role and the impact of science. Would it still be science for and with the people? For the time being, machines have not proved able to emulate the visual strategies of *Science* and *Nature* which have demonstrated their relevance in human learning for both researchers in the same field and scientists in other fields. Human publishers seem to be more needed than ever for their abilities to understand and to design; i.e. to make sense.

2. Perception, general features

In their print and digital forms *Science* and *Nature* visibly look alike. Both homepages (see Figure 168 and Figure 169) are structured around three horizontal banners on top for the menu, a masthead ad, and a featured news. Below, three or four articles are displayed in boxes with an image, a title and a short excerpt. Home pages of both journals can be scrolled down to display much more content (which is published in print and online) or additional online only materials (including video and interactive digital infographics).

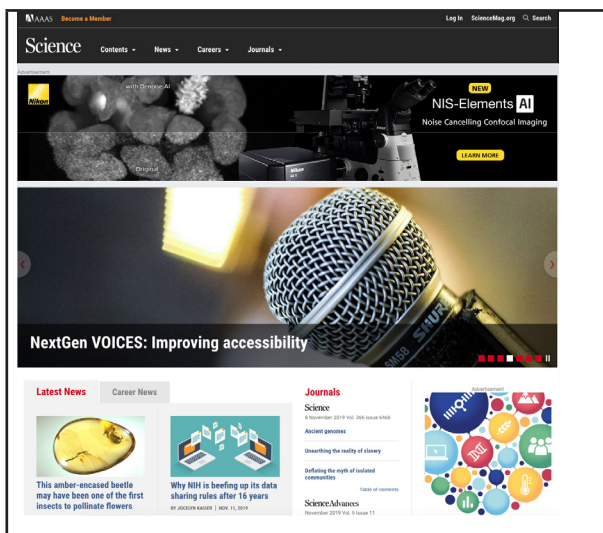


Figure 168. Homepage of *Science* (viewed 12th November 2019)

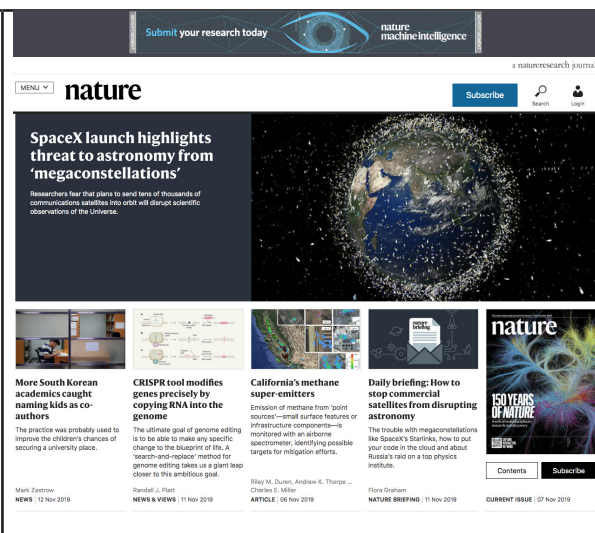


Figure 169. Homepage of *Nature* (viewed 12th November 2019)

Covers of the print journals are based on the same principles of graphic design as the upper parts of the homepages of the websites (see Figure 170 and Figure 171). By order of importance, the title of the journal stands out first on the upper quarter of the page by being set in a contrasting colour over the background of the illustration or of a neutral colour. Illustrations (an image or a photo) are printed full-bleed. The title (and supporting teaser) of the featured article illustrated by the front cover is the second element in terms of decreasing impact (after the illustration and the title of the journal) and is placed in the lower half of the cover and typeset in bold block non-serif typo. The third visible element is a block of the titles and a two-line abstract of three articles of the issue (on top for *Science* and at the bottom for *Nature*).



Figure 170. Cover (*Science*, vol. 362, Issue 6419, 7 December 2018), cover image: DeepMind Technologies Limited



Figure 171. Cover (*Nature*, vol. 562, Issue 7725, 4 October 2018), cover image: Garth Cripps

The main feature are articles which are similarly conceived as “original reports” that “represent a substantial advance in understanding of an important problem” in *Nature* and “research articles” or “reports” which “present a major advance” in *Science*. In other words, those journals are not publishing groundbreaking discovery but are reporting original advances in understanding. In this sense they are falling into the category of what we have defined as knowledge publications. Other contributions are more news-oriented or matters of informed opinions pertaining to scientific discussions (e.g. “news and comment”, “correspondence”, “opinion”, “books or media reviews”, “insights, reviews and perspectives”).

According to their media kits 2020, cumulated audiences of *Nature* and *Science* respectively are 10.1m. users and 14m. page views per month; weekly print circulation of *Science* is 129K and readership 400K. The audience for both journals is 85% postgraduate and *Nature* reckons that “many readers are outside the immediate discipline of the author(s)”.

Beyond traditional advertising, *Science* offers “custom publishing”, “advertorials” and sponsored podcasts and webinars, and *Nature* proposes “branded content” and “partnership and services”. The Nature Research Custom Media team claims that branded content that they purpose-built (i.e. so-called “native ad”) perform eight times better than standard display banners. The reason is probably that these “immersive stories” are a rhetorical mix of content which is useful to the readers and are formally well designed. For example, the features of a poster-format advertorial in *Science* for Zeiss microscopes (see Figure 172) is outlined. It is formatted as a poster which is a familiar feature of scientific communication. Thus, they blend well with the researchers’ ethos. The advertorial concept itself has been designed as a kind of blended communication that merges (or blurs) scientific communication (information) and commercial communication (teleological rhetoric). The original advertisement (bottom right) is showing a white-bloused character surrounded by other characters dressed in the same way in what appears to be a laboratory (cold-coloured surrounding and white instruments). It is implying that the observer is a scientist who knows what his peers are doing and understands the benefit of it. It is a personifying process by empathy. Conversely, the poster-ad does not play on the observer sympathising with other characters and putting himself in their shoes (or more exactly in their white blouse). Instead it is immersing the observer into a subjective view (with a choice of diagram or representation) of what can be seen with a microscope. It is also providing a user manual. Metaphorically, it is a cubist view of the same issue under simultaneous different perspectives. In addition, this advertorial sponsored by Zeiss is gaining credibility because it is presented under the auspices of *Science*.

The challenge **Analysis chart and diagram representations** **The methods description**

Taming the Imaging Triangle

Widefield
The entire field of view is simultaneously illuminated, and the emitted light is collected by a camera. This allows high-speed, sensitive image acquisition of a particular thin sample. Optical sectioning and increased resolution can be achieved by aperture imaging or post-acquisition deconvolution, but require good light microscope available devices.

SR-SIM
Super-resolution Structural Illumination Microscopy also capitalizes on full field-of-view illumination and camera-based image acquisition. A imaging pattern overlaid on the sample, captured at different positions, generates an optical section with increased resolution before the collection lens. This robust super-resolution technique works best in low scattering samples.

Confocal
Confocal illumination in microscopy uses a single propagating illumination of excitation and detection beam paths. Only the focal plane is excited, and the full field of view is acquired by a camera. Large optically sectioned volumes can be very sensitively and quickly imaged. Some systems allow the section of samples for real-time acquisition. Sample size and resolution depend on individual design and optical lenses.

Airyscan
This section confocal detection method overcomes the drawbacks of a closed pinhole for optical sectioning. Instead of concentricly arranged detector elements in the conjugate image plane allow for increased sensitivity and resolution. In the same time, the more developed of detector elements optical sectioning yield enhanced imaging depth and are preserved. The additional spatial information collected by Airyscan allows high-speed acquisition with a better signal-to-noise ratio.

Multiphoton
Another non-pulsed approach to sectioning, it takes two or more photons to excite fluorophores, which only occurs at the focal spot, resulting in optical sectioning. The infrared excitation wavelengths allow for imaging at greater depths, down to several millimeters into the tissue.

STED
Stimulated Emission Depletion microscopy is a laser-pulsed scanning method of which one laser beam excites the dye at the focal spot, while a second, higher wavelength suppresses emission in other spots. This procedure currently achieves the highest possible imaging resolution. The required photo-stable fluorophores and excitation laser makes it hard to apply a wide range of dynamic processes in live samples.

Widefield
Fission larvae of *Drosophila melanogaster* are used as a model system for studying the development of the nervous system. The larvae and the excitation light, however, can affect or even harm the samples. It is often crucial for live-cell applications to use the smallest amounts of label and light to keep experimental conditions as close to nature as possible.

Confocal LSM
Chromaffin cells of *Drosophila melanogaster* are used as a model system for studying the development of the nervous system. The larvae and the excitation light, however, can affect or even harm the samples. It is often crucial for live-cell applications to use the smallest amounts of label and light to keep experimental conditions as close to nature as possible.

Multiphoton
Living zebrafish brain. Confocal LSM of the same area. The excitation light, however, can affect or even harm the samples. It is often crucial for live-cell applications to use the smallest amounts of label and light to keep experimental conditions as close to nature as possible.

SR-SIM
SR-SIM of the same area. The excitation light, however, can affect or even harm the samples. It is often crucial for live-cell applications to use the smallest amounts of label and light to keep experimental conditions as close to nature as possible.

Confocal Spinning Disk
Confocal Spinning Disk of the same area. The excitation light, however, can affect or even harm the samples. It is often crucial for live-cell applications to use the smallest amounts of label and light to keep experimental conditions as close to nature as possible.

Airyscan
Airyscan of the same area. The excitation light, however, can affect or even harm the samples. It is often crucial for live-cell applications to use the smallest amounts of label and light to keep experimental conditions as close to nature as possible.

Multiphoton
Multiphoton of the same area. The excitation light, however, can affect or even harm the samples. It is often crucial for live-cell applications to use the smallest amounts of label and light to keep experimental conditions as close to nature as possible.

STED
STED of the same area. The excitation light, however, can affect or even harm the samples. It is often crucial for live-cell applications to use the smallest amounts of label and light to keep experimental conditions as close to nature as possible.

FINDING THE BEST MICROSCOPE FOR YOUR LIVE SAMPLES
To understand biological processes, scientists study a variety of model systems ranging from single cells, tissue cultures, spheroids, and organs, to whole organisms. Each model system offers specific insights, helping scientists to address unique questions. Fluorescent labels can be generally inserted to target subcellular structures. The labels and the excitation light, however, can affect or even harm the samples. It is often crucial for live-cell applications to use the smallest amounts of label and light to keep experimental conditions as close to nature as possible. This necessary for gentleness contrasts with the need for spatial and temporal resolution in live-cell imaging. So, researchers must compromise. A common strategy to gain higher imaging speeds is to use larger pixels, which sacrifices achievable resolution, and an increase in resolution reduces imaging speed and often exposes the sample to more light. In this "Dewey's triangle" - speed, resolution, and sensitivity - improving one parameter causes the others to suffer. These compromises become even more important as sample volumes and time ranges of physiologically relevant studies keep increasing, which potentially exposes the sample to higher dosages of light. Consequently, a method's depth performance - its ability to image deep inside thicker samples - must also be considered. In laboratories and imaging core facilities, scientists can often choose from several different fluorescence microscopy technologies, each providing a unique set of advantages and weaknesses. This poster aims to provide a quick guide to selecting the best method for answering your specific scientific question.

Illustration of the challenge: head of an ant

The problem: "to understand biological processes, scientists study a variety of model systems [...] each offers specific insights [...] so researchers must compromise [...] This poster aims to provide a quick guide to selecting the best method"

Gain unique insights for your scientific discoveries.

The solution sponsored by

ZEISS
Seeing beyond

Figure 172. A poster-format advertorial in *Science* [outlines and comments added], CC BY-NC 4.0

3. Visual strategies for readers, editorial policy, and knowledge production by authors

There is a spillover of editorial into advertising. Conversely, and for obvious ethical reasons, both journals guarantee that there is no influence of advertisers or other funders on their editorial content and on the process of article selection; it is kept “at arm’s length” (Piller, 2018). But there is a noticeable kind of spillover of image-based advertising rhetoric on the communication of scientific results in both journals. McLuhan had already noticed in 1964 that “newspaper readers take equal satisfaction in ads and news copy”⁴⁷.

47 “Reader surveys have astonished even publishers with the revelation [that] ads are news. What is wrong with them is that they are always good news. In order to balance off the effect and to sell good news, it is necessary

Even if advertising were not a concern, visual strategy would remain an essential feature of magazine-looking journals such as *Science* and *Nature*. In her article “Drawn to science” in *Science* (2018), Garramon Merkle argues that “images remain powerful tools for learning, documenting and facilitating thinking”. She draws on the project Picturing to learn (Harvard, MIT and Duke) in which the emphasis of drawing in science is not on art but on “accuracy, enhanced observational skills and asking deeper questions”. In other words, there are many parallels between creating a graphic and writing an article (first, plan what to “say”, and in what order you will “say it”) even though visualisation reveals “misconceptions in a way that text does not”. For Frankel & Depace (2012) the research community has become primarily responsible for crafting its own graphics and no longer systematically hire specialists to visually communicate their work. Even though they emphasise that “a visual representation of a scientific concept (or data) is a re-presentation, and not the thing itself”.

Strong emphasis is put in both journals on peer-review and avoidance of conflict of interest. In addition, the editorial team of *Nature* recommends that authors avoid jargon and acronyms (e.g. “unnecessary technical terminology”, “unreadable descriptions”, “convoluted figure legends”) which—in the fragmented world of the scientific disciplines—is “second-nature to the author but is not to the reader”. In an era of information overload, the printed version of a paper should be “as short as is consistent with its goal” in order to “increase the paper’s readership, impact and the number of times others cite it”. Article length should not exceed 5 pages (2,000-2,500 words), 3-4 modest display items (figures and tables) and 30-50 references. The length of papers in *Science* is comparable. Reports correspond to ~3 printed pages in the journal (~2,500 words) and research articles ~5 printed pages (4,500 words maximum), up to six figures or tables, and about 40 references. Article length in both these journals is significantly lower than the average 7,500 words for scientific articles published in academic journals.

Both journals address scientific topics which are in the news (e.g. AI, the funding of research...) and science that make news (e.g. new technologies to deplastify the oceans, new vaccines...). Transversal topics like the social role of science is obviously an issue of choice for the scientific community and its various stakeholders (researchers, institutions, funders, etc.) and implies applying social sciences methodologies (e.g. ethnology, sociology...) in other fields of science (e.g. immunology, archeology, genetics...) as “a powerful way to make results more relevant and practicable across a spread of disciplines” (“Power to the people”, 2018). That implies *co-production* (see Figure 173 and Figure 174) as “valuing the knowledge everybody has” (“Science shared”, 2018) and respecting people’s values when collecting samples (e.g. DNA samples on dead bodies of native Americans). For example “Power to the people” (2018) spans how knowledge is produced (“better research—both technically, because it accounts for more factors, and ethically, because it’s more equitable”), how it is incentivised (“the way in which some types of study are done and rewarded does not set the correct priorities”), and what is the

to have a lot of bad news. [...] The owners of media always endeavor to give the public what it wants, because they sense that their power is the *medium* and not in the *message*” (ibid.).

purpose of science (e.g. “inclusive policy [...] popular since the 1970s among sociologists”, “for the benefit of all people”, *Science*).

<p>The image in the original document might be copyrighted.</p> <p>This image has been removed in this version for general circulation.</p>	<p>The image in the original document might be copyrighted.</p> <p>This image has been removed in this version for general circulation.</p>
<p>Figure 173. Feature article “Bridging the Gap”, Lizzie Wade (<i>Science</i>, vol. 361, Issue 6409, 28 September 2018)</p>	<p>Figure 174. Feature article “How three research groups are tearing down the ivory tower”, Cassandra Willyard, Megan Scudellari, & Linda Nordling (<i>Nature</i>, vol. 562, Issue 7725, 3 October 2018)</p>

4. Validation of knowledge by design

In the mission statement of *Science*, the first advantage of “Why Publish With Us” is *scientific impact*. Even more explicitly *Nature* boasts “the highest impact factor of any journal publishing basic scientific research”. So, it can be said that both journals are designed for impact. Therefore, it is no surprise that they attract authors who seek recognition and publicity for their work. It must be remembered that, in the current system of “publish or perish”, the best research positions and the better funding opportunities go to the highest-impact researchers. And there is a “robust correlation between citation impact and team size” (Azoulay, 2019). Wu et al. (2019) argued that one of the reasons is “the complexity of modern problems that require interdisciplinary solutions” and showed that “atypical combinations increase slowly up to teams of approximately ten and then decreases sharply”. So, there is a strong incentive to publish in large groups of up to ten authors. It is beneficial for the advancement of science by knowledge consolidation, interdisciplinarity and development.

The trade-off is that people in general—and researchers in particular—think and act differently in large groups. Wu et al. observed that “they generate fewer ideas” and are therefore less disruptive and thus less likely to be granted awards. The reason being that solo authors and small teams have less to lose and “much more often build on older, less popular ideas”. This oddity remains the best explanatory factor for disruption since it could be proved that it is not driven by differences in the types of papers (theoretical versus empirical or review versus original research). In the digital era of instant communication, it is a paradox that small teams which search deeper—and hopefully find disrupting innovation—usually experience a much longer citation delay. This delay plus the fact that disruptive research often draws on older ideas is what Wu et al. call the “sleeping beauty index”. In other words, innovative ideas take time

to mature and time to become common knowledge. Similarly, in the field of narrative fiction, Umberto Eco commented in *Serendipities* (1998) that a *criterion of truth* exists between “tales called false [yesterday] and tales that today we believe true”. This criterion is the *wisdom of the community*; i.e. “a process of verification that is based on slow, collective, public performance by what Charles Sanders Peirce called ‘the community’”.

5. Is the future of scientific publishing human?

Scientific publishing is on the edge of knowledge design when 1. disruptive knowledge is 2. published in novel form by 3. inventive process. I have just approached the matter of disruptive science and have earlier on touched on visual strategies. What about inventive process? In our era of information overload, capitalising on “hidden” or “latent” knowledge resembles looking for a needle in a haystack. Pulla (2019) reckons that researchers could crawl over text and data of 73 million journal articles, from 1847 to present days, stored at the Jawaharlal Nehru University. But Isayev (2019) argued that contrary to the conventional machine learning mantra “throwing more data at the problem is not always the solution”.

Instead, it is the quality and domain-specificity of the corpus that determines its utility for domain-specific tasks. The combination of unsupervised machine learning, text mining and word embeddings allows scientists using computer algorithms “to pull out insights without actually reading the text” (Pulla, 2019) and to do better than their earlier “combination of craft and science practiced by knowledgeable artisans” (Isayev, 2019). Tshiteyan et al. (2019) explain that machine knowledge draws on “the connections and relationships between data items as interpreted by the authors”. Machines emulate this *latent knowledge* (process) of interpreting to mine the *hidden knowledge* (content) in the text of published papers (e.g. in materials science). This machine-assisted process is by itself “a new paradigm of scientific breakthroughs” to unlock latent knowledge not readily accessible to human scientists through the efficient assimilation of existing knowledge.

Machines have gone one step further from assisting scientific writers. A SpringerNature (the parent company of *Nature*) Beta writer has written, edited and published *Lithium-Ion Batteries* in 2019. In its introduction, Henning Schoenenberger (the only human writer featured in this book), described it as *machine-generated*; i.e. “a cross-corpora auto-summarization of current texts from Springer Nature’s content platform SpringerLink, [automatically] organized by means of a similarity-based clustering routine in coherent chapters and sections.” A solution to the problem of information overload is “to speed up the literature digestion process of a given field of research” for readers. Authors are not meant to be replaced by algorithms, but their role is expected to change as more and more research content is created by algorithms. It could result in “a decrease of manufacturers and *an increase of designers* at the same time” [italics added]. The development process of Beta writer involved computer scientists, engineers, and editorial subject matter experts who strived to balance between “‘creative’ automated writing and a mere collation of existing publications”. At this early prototyping stage, they focused more on functionality than on design—and did not provide a Graphical User Interface (GUI). One

of the main issues at the moment is that the users expect trustworthiness and verifiability in scientific publications and aim to remain in control. But “the system remains a blackbox” to them. Schoenenberger feels that Beta writer is about “to reach the fringes of creativity” and the issue will probably be to learn “how to restrict its creativity to producing content that remains factually true”.

After *The Rise of the Creative Class* (Florida, 2002) which questioned the possible decline of the “knowledge workers” (Drucker, 1959, *The Landmarks of Tomorrow*) will it eventually be “the rise of the machines” that triggers Schumpeterian “creative destruction”? More probably, knowledge workers could be increasingly assisted by machines and exert a growing role to restrict their creativity. A desirable scenario would be that machines augment humans and humans understand machines (it is the challenge of eXplainable Artificial Intelligence (XAI), because “in the area of Deep Learning it becomes increasingly difficult to understand how a result has been actually derived”, Schoenenberger, 2019).

6. PMC: augmented content for better understanding

Both journals are claiming that the content they publish is “basic scientific research” but the way it is formalised is more thorough and better graphically designed and illustrated than in the vast majority of academic journals. It can even visually compare with what most magazines publish. Once the content provided by authors has been peer reviewed and accepted (and in parallel the promotional content is processed into advertorials), it is indeed enhanced by illustrators (see also the case on comics and Sousanis contribution to *Nature*), copyedited by editors and the overall layout is customised by graphic designers. Because the content is at the same time simplified (“no jargon”) and enhanced, and comparably with what happens with AR, articles are easier to understand for non-specialists. The whole process is both expensive and very profitable and, in a typical chicken-and-egg conundrum, it is difficult to say whether profit or editorial excellence in knowledge publishing comes first. What is innovative in this PMC is how creative *Science* and *Nature* have had to remain in order to add value for an audience in the millions every week when most academic journals reach only hundreds of specialist readers of various narrowly focused communities every quarter and in a general context where free data is increasingly crowding the Internet.

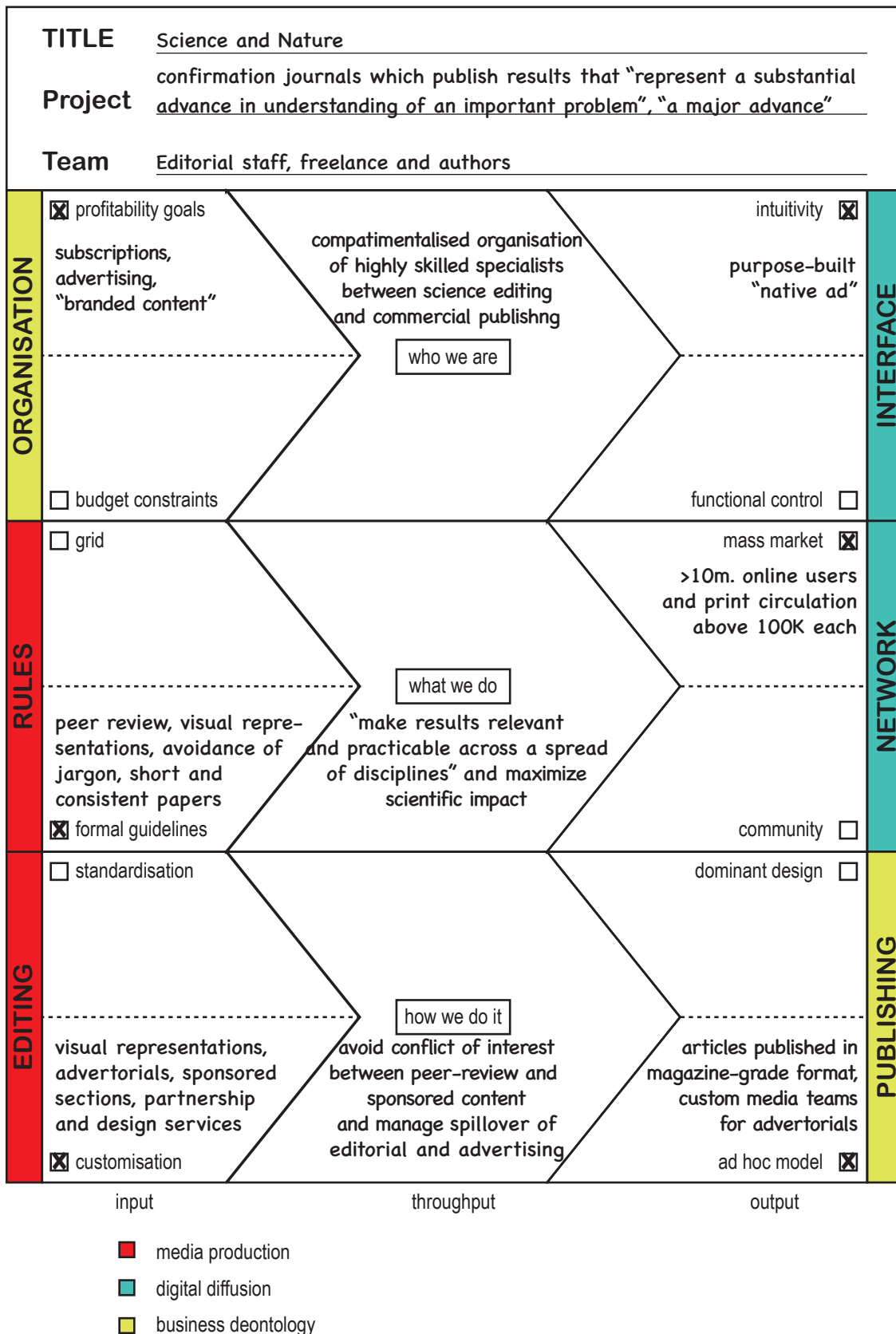


Figure 175. The publishing canvas for *Science and Nature*

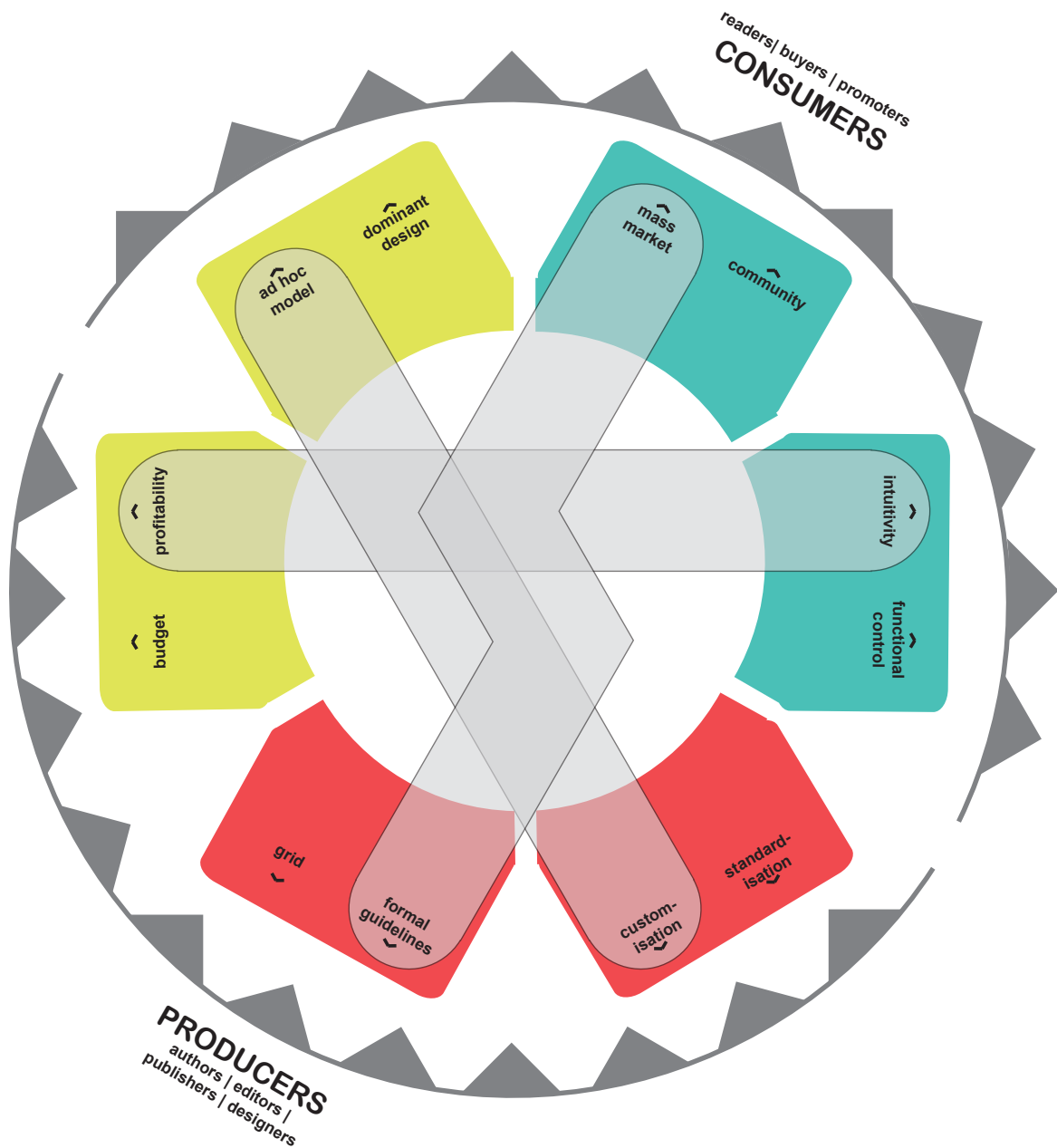


Figure 176. The PMC for *Science* and *Nature*

7. Sources

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Chapter 22.

“The Conversation” (France)

1. Popularising with researchers

The Conversation started as an Australian initiative and has become a federation of national partners. Their common trait is an endeavour to popularise science with both the scientists who produce the knowledge and the help of the journalists’ know how. The hybridisation between the academics and the journalists is in itself a challenge and requires ongoing fine-tuning and caution, for trust is the main asset of this enterprise. The three pillars of *The Conversation* are trustworthiness, studio work, and representation. First the published content is based on scientific work and the editorial team of journalists favours a conservative approach to avoid controversies. Its aim is to provide serious information for informed debates. Articles are designed as the missing links between an academic article and a news article. Second, *The Conversation* is an “old folks’ start-up”, an empathic collaborative organisation. Third, *The Conversation* is an electronic-only medium which strives to popularise research and promotes content syndication into other media. It is doing so by adding *mediativity* to scientific information (a mix of emotion and information, affect and cognition) and by representing scientific concepts visually. Their open access model is proving to be sustainable.

2. Short history and purpose

In 2010, Andrew Jaspan, the ex editor-in-chief of the Australian newspaper *The Age*, visited the University of Melbourne. He observed that numerous academics were writing research articles that nobody would read outside of the academy. His idea to make them easier to read so that they could find their way to the general public resounded with the vice-president of the University. It could kill two birds with one stone. The first issue was about the researchers’ accountability to the public to demonstrate that government budgets and/or private endowments are well spent on them. The second challenge was that Australian universities have a competitive issue and need to differentiate themselves from their more prestigious American and British counterparts. So, *The Conversation* was founded with the help of the University of Melbourne and got a AU\$1m endowment from the ministry of education of the state of Victoria.

From a journalist’s perspective (see Table 13), this initiative was also interesting for two main reasons. On one hand, sourcing analysis from researchers gave them credibility and made sure that the facts were thoroughly checked. On the other hand, it presented an alternative to the increasingly strained traditional sources of media revenues (which rested on advertising, copy sales, and subscription) challenged by digitisation and remediation (i.e. the hegemonic power of the Gafa).

Table 13. The values of data-journalism in 2010 versus those of investigative journalism in 1920 (Table 2 in Salaün, Jean-Michel. 2012. Vu, lu, su)

Investigative journalism (1920)	Data-journalism (2010)
Objectivity: journalists are inspired by science and develop a “sense of evidence”	The more available the data, the more chances people talk about them
Veracity	Effectiveness and reliability
Responsibility	The most reliable interpretation is brought forward

For academics, it was an opportunity to get a wider circulation of their work while retaining control over it (and therefore not risking that their findings and analysis got misinterpreted by sensation-seeking journalists). In a nutshell the three objectives of *The Conversation* for the three populations it intends to serve are: a better level of awareness and reputation for member organisations (e.g. universities), a better understanding of science and research findings for journalists, and more general public interest for researchers’ work. In order to achieve these results, the editorial policy is twofold: to analyse the news through academic expertise, and to give visibility to the research agenda. It is primarily implemented through the republication of adapted articles in the press, but also through content syndication by member institutions (e.g. foundations).

The model of *The Conversation* was then adopted and adapted locally in the UK, the US, South Africa, France, Canada, Indonesia, Spain... France was launched in 2015 by a group of three seasoned journalists: Didier Pourquery, Fabrice Rousselot and Leighton Walter Kille. They shared the belief that “the media market is a supply market where proposals are made with no certainty that they will meet their audience”*. The initial team of six people (including the three founders) was experienced. It was a conscious decision to involve entrepreneurial journalists and editors-in-chief who would be enduring because they believed in the project and trusted the team. For those who joined, it was an act of faith, a possibility to supplement one’s income from other activities, and an opportunistic move at a time when there were not many interesting jobs in journalism. They have started referring to their venture as an “old folks’ start-up”* where mistakes are allowed and everybody is an entrepreneur.

3. A federal organisation with a multipurpose tool

The Conversation is an international network in which Australia has a central position as the initiator. But each country node was created locally by a group of people who believed in the overall concept and shared a common set of values. The question of what this set of values is was raised when Singapore and China wanted to join. Should countries where research and education organisations are directly influenced by their governments and political parties be allowed? An additional issue is data privacy and computer security. Since there is no firewall, the safest option was to decline. Each national affiliate adheres to a charter and shares a common mindset inspired by the commons, and the legal entities are all not-for-profit. The governance of the network is more or less informal with an internal regulating body. There are also possibili-

ties to find arrangements between a number of affiliates (e.g. on specific issues related to editing in the french language between France and Canada).

At the country level too, for example in France on which I am focusing, the work organisation is also by and large cooperative. The work is organised by project rather than task-related. Each member of the team is autonomous, is free to work remotely, and does not have to account for her/his time. As one journalist put it “we really are hybrid”*. The hierarchy is flat and there is “a form of kindness”* free of ego and money issues.

I was given to experience how this organisation works with a typical journalists’ habitus as a guest to the weekly editors’ conference (there is also another “hot news” conference on Monday mornings). The whole team of eleven people (including the editorial director and the general manager) held their 50-minute Tuesday afternoon conference. The director was facilitating the conference standing in front of the wall schedule. The discussion started to revolve around editorial content issues as what were the forthcoming events which could be addressed (e.g. the fiftieth anniversary of May 68, the six nation rugby tournament and related sport’s injuries), the fundamental questions (e.g. bioethics) and how they could be approached (e.g. “this is almost anthropology”*, “it should be viewed under the different angles of health, science, and society”*). As the issues were discussed, how they would be addressed and prioritised was also debated. One of the underlying problems remained that the daily output of the team is important and resources are stretched. There was a tacit agreement to skip one’s turn if somebody felt overwhelmed (e.g. “I can no longer manage the flow of incoming papers”*, “there are fifty things I need to do and they are all priorities”*).

How does the journalists’ DNA fit with the researchers’ habitus? The whole team has an extensive professional background in journalism. But at *The Conversation* the journalists’ DNA and the startups’ mindset is also hybridised with the researchers’ habitus, and that “tends to build up trust with all the stakeholders”*. Most publishing academics are in favour of not-for-profit and Creative Commons (CC), and they are used to a kind of “quality control” linked to rejection rates (10% to 15% at *The Conversation* France) due to peer review and also to disclose declarations (and possibly conflicts) of interest, and to deposit and/or reference their articles on the likes of Google Scholar. They are also familiar with Submission Management Systems (SMS), collaborative online document services (e.g. Google doc, Framapad), and scientific social networks (e.g. ResearchGate, Academia). So it is only normal for them to submit their papers, edit them in a wysiwyg text processor (in which all revisions are displayed explicitly in different colours), and get their metrics on a platform such as the Content Management System (CMS) and digital workspace offered by *The Conversation*.

Platform developments are carried out in agile mode and centralised in Australia. Development tickets are submitted bottom up from the local editorial entities. Then their implementation is beta-tested locally by a local correspondent (e.g. Leighton Walter Kille for France) in a sandbox environment. Once they are approved, the developments are implemented on the live platform. The original development environment which was coded in Ruby (a dynamic open source language) is scalable. A problem, which became crucial for the development of the french site (and

ensuing non-english versions), was that english used to be embedded in the code. This issue was solved as the code was made language agnostic, which subsequently allowed for an easier development of the Indonesian platform for instance. Overall the platform and the development process have proved to be robust. The maintenance and service costs are supported by the network affiliates which pay a technological fee to Australia.

4. A source of curated trustworthy information

The Conversation works for affiliates and researchers. But the crucial part is what it does for readers and members. In addition to being a platform, *The Conversation* is before all a news-site and a e-newsletter (see Figure 177). Its basic unit—the paper (see Figure 178)—is the missing link between an academic article and a news article. It is designed to be an easy-to-read and enjoyable scientific analysis or synthesis which can be written by an academic with the help of a journalist. In its most-summarised form it is not discoverable by its scientific metadata (author, abstract, keywords and bibliographic references) but by the combination of an image and a short title and/or possibly its editorial section; i.e. a shift in discoverability from content to form. These papers are essentially 6,000 characters long (around 1,200 words) which is a long format for the online daily press but only $\frac{1}{2}$ of a report or $\frac{1}{3}$ of a research article in *Science* or *Nature*, and 5 to 7 times shorter than an academic article.

Instead of the dominant academic *pull* modes of active *search* or automatic documentary watch, these articles are designed to be *pushed* and *browsed* in newsletters (44,000 subscribers) or on the homepage of *The Conversation* website. Discoverability of other related articles does not follow the traditional automated hyperlink in the bibliographic references common to the scientific articles. Instead discovery is encouraged by the editorialised four links at the bottom of each article (either automatically generated or suggested by a journalist) published by *The Conversation*. Each of the five weekly 10-article newsletter is editorialised by the team and a weekend edition is composed as a “best of” of the past week (11,000 subscribers). In 2017-2018, *The Conversation* France boasted excellent opening rates of their newsletter between 25% and 35% (versus 2% on average for unsolicited emailing campaigns and 5% for *Le Monde*). The cumulated yearly audience on the website was 26m views in 2017 and 46m in 2018 with 720,000 unique visitors.



Figure 177. Newsletter *The Conversation* France (detail), 13th November 2019

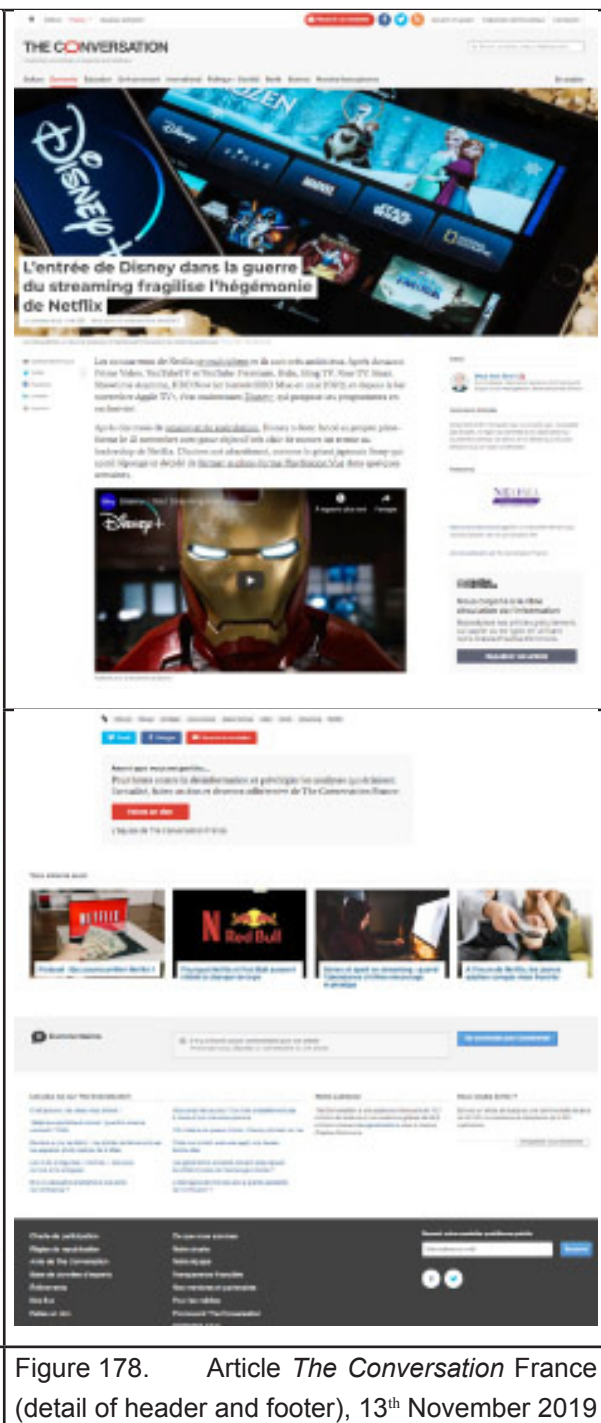


Figure 178. Article *The Conversation* France (detail of header and footer), 13th November 2019

Even though one of the initial intuition of the french founders was that “the media market is a supply market”* *The Conversation* does not passively rely on the flow of submissions. The team of journalists is editorially-driven and news-sensitive (hence the two weekly editors’ conferences). There is also a person in charge of the community management who follows and analyses analytics to identify topics of interest. All the team members actively seek and solicit authors whom they think could write good articles (they get positive replies in two-third of the cases). Such authors who are willing to popularise can be found in the catalogue of book publishers (e.g. Agone, La Découverte, Puf, Autrement) with which *The Conversation* collaborates. Amongst the most-read authors are also columnists who co-write articles with PhD students.

But there is still a self-admitted awareness problem that “we do not know the researchers and they do not know us”. This is why prospecting and nurturing good relationships with members is essential. Members are organisations which sponsor *The Conversation* and the authors can only be researchers affiliated with these member institutions. The more the members encourage their researchers to publish in *The Conversation*, the better it is.

When articles are not too narrowly focused and are republished in newspapers they usually increase their dissemination by a factor of ten. A journalist is in charge of scanning 15 to 20 media with which there is an “informal partnership agreement” (usually acquaintances). She prepares a selection of one or two preselected articles and pushes them as and where they could be of interest for their own publication. In the columns of *The Conversation*, the most popular disciplines are health and science which are *involving* (as in everybody can feel concerned and/or emotionally touched), and in economics cases over theoretical analysis. More generally, articles are consulted if they are in line with the news and can put them into perspective. Articles can be commented by their readers, but comments are moderated. This is in line with the general editorial stance that articles do not express opinions but facts, and discussions can be entertained but controversies are not encouraged. Published articles are not science-in-the-making but presentations or applications of accepted paradigms in a given field of science.

There is also a competition with popularising magazines such as the preexisting *Science et Avenir* or *Science & Vie* (see Figure 183) or the newly launched *CNRS-Le Journal* in France. In the contest for attention, visual impact can be a differentiating asset. Typically, broadsheet newspapers (e.g. *The New York Times*, see Figure 179) and academic journals (e.g. *Journalism Studies*, see Figure 181) do not rely on images to draw attention. They are more logo-centric (i.e. text-based) than visual media. On the contrary, the homepage of *The Conversation* (see Figure 182) gives more importance to images than to text. In this respect it is inspired by audio-visual media (e.g. the BBC, see Figure 180 or France Info) or popularising magazines (e.g. *Science & Vie*, see Figure 183 or *CNRS-Le Magazine*). It visually appears as a complement of newspapers and as a competitor of image-inclined media.



Figure 179. Homepage of *The New York Times* (viewed 12th November 2019)

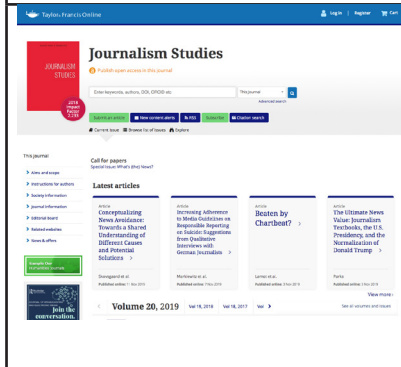


Figure 181. Homepage of *Journalism Studies* (viewed 12th November 2019)



Figure 182. Homepage of *The Conversation* (France) (viewed 12th November 2019)

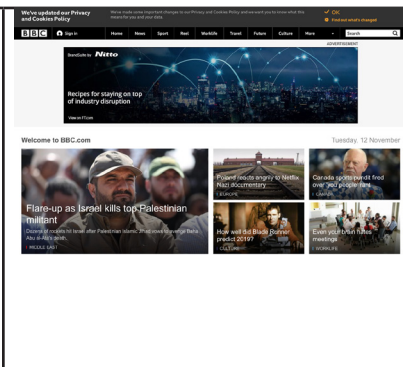


Figure 180. Homepage of the BBC (viewed 12th November 2019)



Figure 183. Homepage of *Science & Vie* (viewed 12th November 2019)

At the article level, each journalist-editor in charge of a section is also taking care of the graphic aspect (some journalists are more interested than others). There is a feeling that photos might be better than sketches or models because the text itself can be seen as a sketch—thanks to metaphors. There is a particular emphasis for the text to be matter-of-fact with examples and/or numbers. Reading the text should “not be an intellection”, instead it should be “written to be immediate”. Popularisation can go through text and image, and also through all available media. This is why a data-visualisation section was created at *The Conversation*. It was experimented thanks to a Google Digital News Initiative grant for one year in France. There also was an initiative in the US to embed the Datawrapper licence into the platform and to train the whole team to use it. The main problem, it was discovered, was more with the data than with their visualisation. And more specifically it pertains with researchers who felt that they were losing control over their data when they had not generated their representation themselves. Researchers might be unwilling to share data because they feel it is their wealth.

5. Popularisation or representation?

In his 2015 compilation of essays *La main de l'auteur et l'esprit de l'imprimeur, XVI^e-XVIII^e siècle* (The hand of the author and the spirit of the printer), Book Historian Roger Chartier added his contribution to “the interrogations inspired by the contemporary mutations of the

written culture”*. He did not approach this question head-on because he modestly thought that “others do it better than [he] could”* but wrote that the issue of “digital textuality”* is present—*explicitly* or *implicitly*—in all his essays. I am walking in similar steps than his, I hope not too immodestly, and discuss three issues pertaining to *The Conversation* in the light of his work and others’; i.e. trustworthiness, studio work, and representation.

5.1. Trustworthiness

One of the problems currently faced by media is lack of trust due to, amongst other factors, fake news or lack of authenticity which blurs the boundary between what is true and what is false—as if it were a mere matter of opinion. Hence journalists must regain their status as trustworthy mediators. In order to do so, they could adhere to the three-pronged paradigm into which the history of the written culture is set—following the history of science. First it is about “negotiations as the framework of experiences”, a discussion about what is known and what is assumed; i.e. a *conversation paradigm*. Second is the credit that can be granted to *those who witness* the findings and their competency to tell “what is true”; i.e. the three functions of journalists: witnessing, fact-checking and reporting. And third is the “intelligibility model” which gives an account of an authoritative discourse which contrasts true and false; i.e. fact-based articles. In other words, this is a best-practice sort of journalism. And, this three-pronged paradigm having originated in the history of science, good journalism can be associated with, and strengthened by, good science, working together for a common purpose of *authenticity*. For Umberto Eco (1998), the problem “does not consist of proving something false but in proving that the authentic object is authentic” and it is based on *the wisdom of the community*. Community is why it is so important that journalists and researchers work together to compose articles for *The Conversation*.

5.2. Studio work

Working together does not mean that everybody is doing the same thing. Roles can change but they are assigned beforehand for each project. For example, I am drawing on the description of work in a printer’s workshop by the scientific printer (he would be called a publisher today) Joseph Moxon in his *Mechanick Exercises* (1677-1684) quoted by Chartier:

A good Compositor is ambitious as well to make the meaning of his Author intelligent to the Reader, as to make his Work shew graceful to the Eye and pleasant in reading. [...] he reads his Copy with Consideration; so he may get himself into the meaning of the author, and consequently considers how to order his Work the better both in the title page, and in the matter of the Book [...] the better sympathize with the Authors Genius and also with the capacity of the Reader.

For Chartier, the compositors (or typographers) worked in the printer’s workshop with the correctors—who were “humanists”—in order to provide “the greatest possible correction of their editions”*. If I were to transpose this 17th century practice of the printing trade to the 21st

century context of *The Conversation* as a digital publisher, the contemporary journalist-editors could be assimilated with typographers-cum-correctors who used to work together in the same drafting room (today’s newsroom) with the same intention of *sympathizing* with the researchers-authors and *with the capacity of the readers*. At *The Conversation* “the work is organised by project rather than task-related”. As an analogy with my general line of thought in this thesis, this way of working 1. in project mode 2. in the same common physical space (the drafting room or the digital space of the platform) 3. with the overall design (as intention) of mediating intelligent content is akin to design thinking, or more precisely to knowledge design.

5.3. Representation

By analogy, Moxon’s compositor or Chartier’s typographer could be considered as the journalist-editor of *The Conversation*. Typography is the graphic design of both the letters and the text, and also the composition of the book (typesetting of “the image of the text” and setting of the text and of the images into double page spreads; also see Waller). In fact, the editors at *The Conversation* have expressed interest in, and shown ability for, data-visualisation (they are editor-designers in the sense of the KDT). As noted by Chartier, in the Kantian sense, the author’s work is thought as *immaterial*, always identical to itself—its possibly different) printed (or digital) forms only are “representations”. This term was paradoxically particularly adequate as it can also be understood in the sense of theatrical representations. Looking at the articles in *The Conversation* and at its homepage is experiencing examples of *mediativity* as defined by Marion. They have *communicational momentum* because they mix emotion and information, affect and cognition. As Chartier had put it, for books, “materiality is inseparable of the text [...] which as it fixes the work, endows it with mobility and instability”* (think of responsive design). Thus, it is only reasonable that scientists who, according to Frankel & Depace, are prone to implement *Visual strategies* should be cautious with them. They know by experience that “a visual representation of a scientific concept (or data) is a re-presentation, and not the thing itself”. They know, as Drucker insists, that “no ‘data’ pre-exist their parametrization. *Data are capta* [...] interpretation of the phenomenal world”. Anthropologists like Roberts know that “in creating models we make theoretically informed choices” because “models are performative”.

6. PMC: a professional approach of free

The Conversation is a pure player of web media and complies with the academics’ digital habitus and the dominant design of the Internet. In this respect, it is aligned. But it is innovative (misaligned) in the two other dimensions. Firstly, even though its operational budget is limited, it devotes its resources to an editorial support of journalists to researchers in order to help them popularise their work. Contrarily to a lot of academic publishing initiatives, it does not count solely on UGC and benevolent work. Secondly, and because it is complying with the scientific ethos of open access, free, and CC, it has to forego the traditional business model of news publishing (based on circulation and/or advertising revenues). It is instead relying on sponsoring

from research institutions and foundations and aims to popularise articles through B2B2C (*The Conversation* to newspapers and magazines to a general public readership).

The sustainability and feasibility of this PMC rests on economies of scale for the platform (achieved thanks to federalism), the limited cost of a team of part-time only journalists, and a diversification of funding sources to wean off from subsidies. The business model of *The Conversation* is based on a three-pronged approach of institutional support, CC and no advertising. The €1,4m revenue of the French branch (versus €1m in 2017 and 0,8m in 2016) comes from financial contributions of 70 research and education institutions (around €10,000 p.a. each) and from foundations and regional authorities (around €50,000 p.a. each). Due to the non-renewal of subsidies, *The Conversation* Australia had to find alternate source of funding. In a similar way to the Wikipedia Foundation, it has invited individuals to donate and has collected the equivalent of €470,000 p.a. in the last two years. In France, subsidies still amounted to 22% of the resources in 2017 (almost €224,000) and, as per June 2019, €80,000 was collected from 1,200 individuals. Expenses are mostly salaries (14 part-time employees) and payments of free-lance, and there is no royalty fee but a yearly contribution of around 10% of the budget to *The Conversation* Australia for their services.

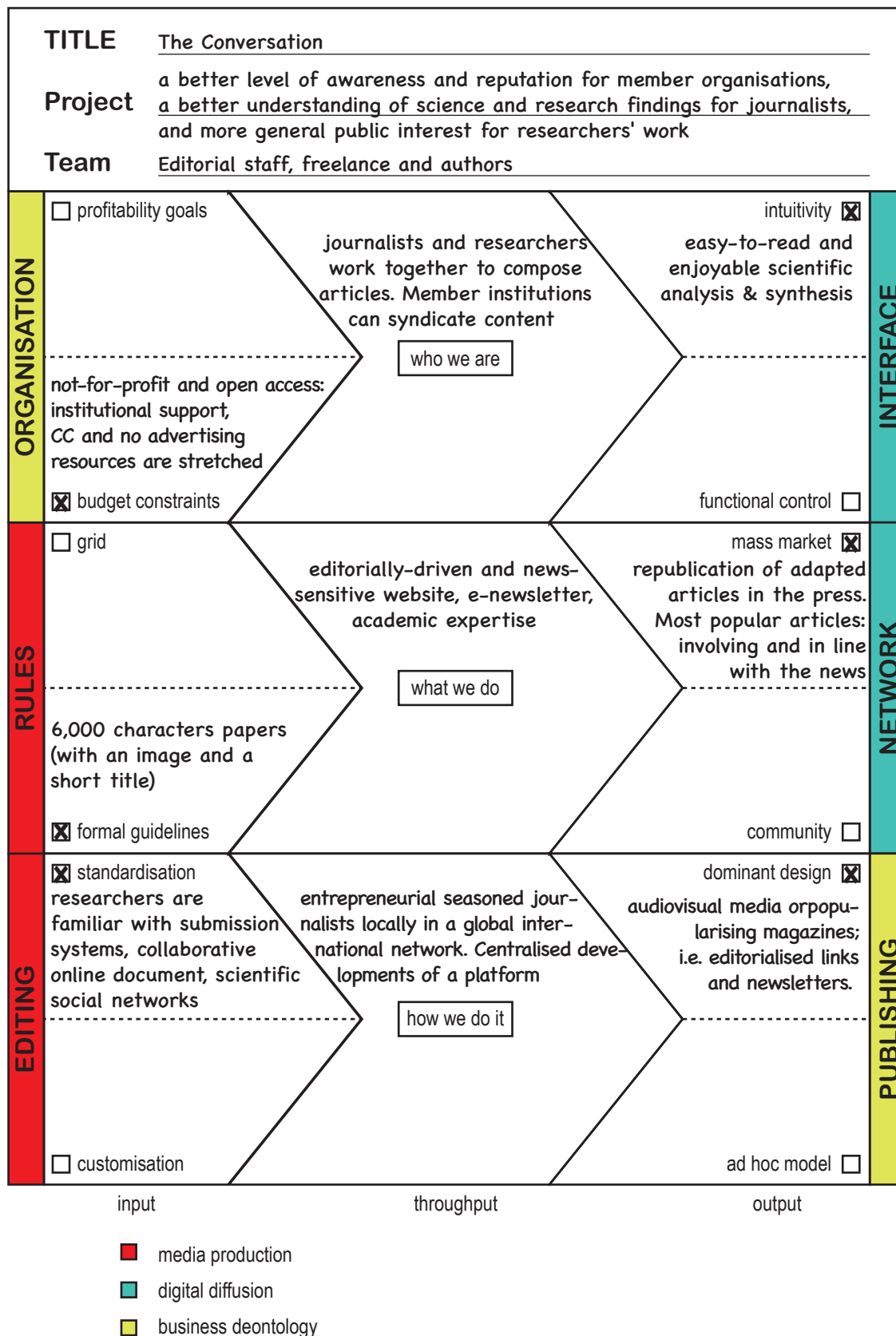


Figure 184. The publishing canvas for *The Conversation*

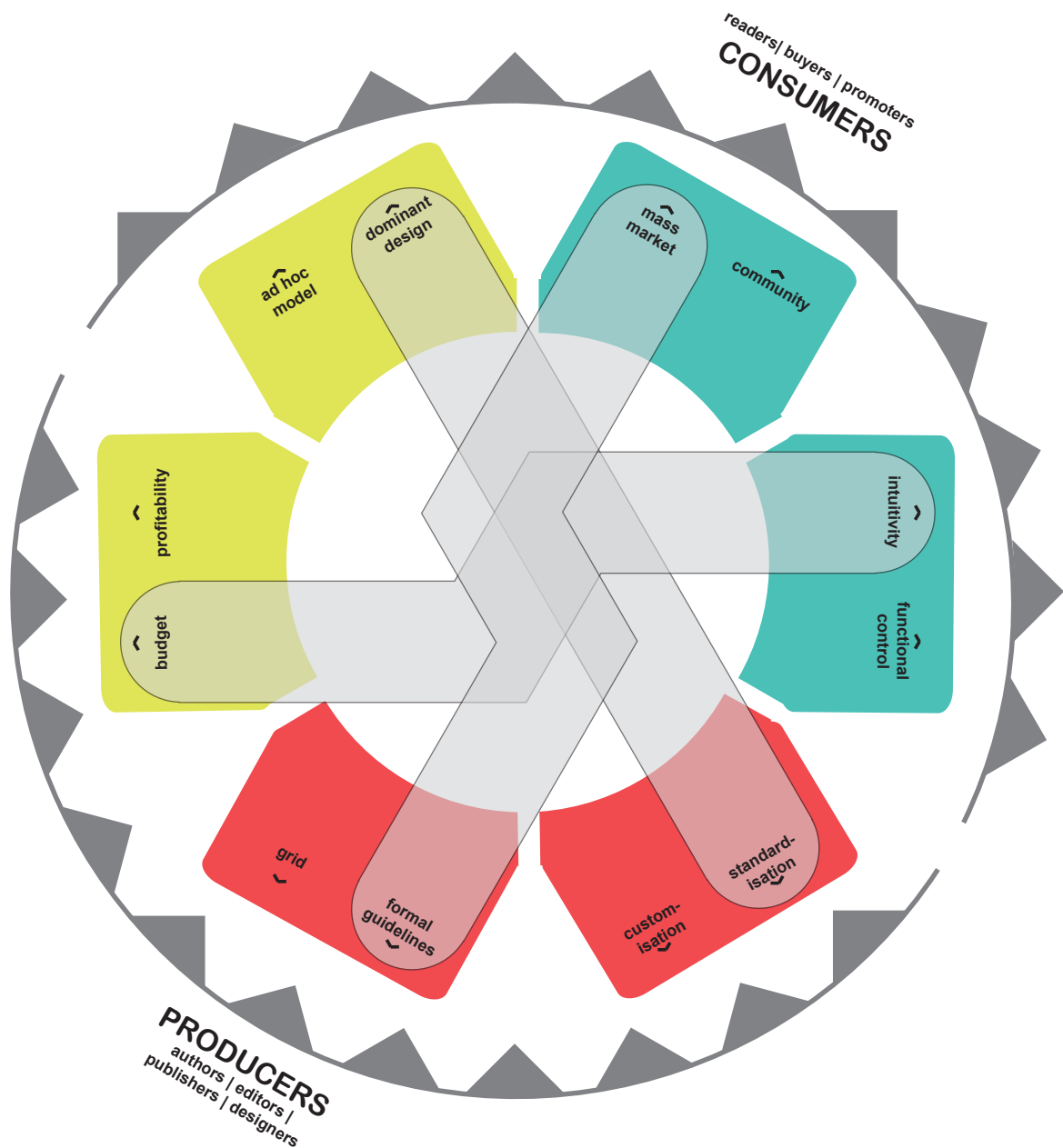


Figure 185. The PMC for *The Conversation*

As per November 2019, 9,420 articles in french (vs 4,500 articles by 2018) were published by 3,500 authors since the inception of *The Conversation* in France in September 2015. In the whole network, there were 85,000 english speaking contributors. A selection of articles can be adapted (i.e. contextualised and rewritten for local readers, they are never literally translated) from one language to another or initially written by their authors in both languages.

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7.2. Appendix

See Appendix 5

Chapter 23.

TopicGraph by the Jstor Labs

1. Publishing innovation as a process and as artefacts

Since Jstor was launched in the late 1990s, activities have developed and the pace of change has accelerated. The whole operation was reorganised and Jstor Labs were eventually founded in 2014. Its aim is to help the academic community keep abreast of innovation in publishing. The Jstor Labs are a not-for-profit organisation built by and for the academic community. Their ethos is firmly grounded in the digital humanities. They could be described as an hybridised i-lab, fab-lab and project factory set to design artefacts, rather than as a research lab (which aim would instead be to produce knowledge forms such as models or theories). It is operated by a mix of project managers, designers and developers and is mandated as a “safe place to fail” with adequate and stable funding. Its methodology is pragmatically inspired by agile, lean start-up and design thinking and it develops innovation at the three levels of feature, product and business.

The TopicGraph project is an online platform that was developed to meet the needs of the researchers who “consume” scholarly books. A special emphasis was put on visualisation as both the team and the users needed to be shown the work early and often during development for “it is really hard to imagine it”. The TopicGraph platform will not be maintained because its usage has been low, but many of its features proved successful and have been implemented in another project, Text Analyzer, which has been more popular.

2. Overview and history of Ithaka

The digital library Jstor was founded in 1995 as an independent not-for-profit organisation funded by the Andrew W. Mellon Foundation and preceded Ithaka by eight years. In 2009, Ithaka and Jstor merged and were organised as three services: Jstor, Portico (preservation service), and Ithaka S+R (research and consulting service for the academic community). In Jstor, books were added to journals in 2011 and the magazine *Jstor Daily* launched in 2014. The same year Alex Humphreys launched Jstor Labs to explore new markets and test out fresh ideas. A re-engineered version of the Jstor platform was launched in 2016. Ithaka’s mission statement reads as “a not-for-profit organization that works with the global higher education community to advance and preserve knowledge and to improve teaching and learning through the use of digital technologies”⁴⁸ and its philosophy is based on the four principles of “academic values”, “innovative uses of technology”, “working from ‘within’”, and “economic sustainability”.

Since the 2000s the challenge facing all participants in the scholarly communication process (including Jstor as an aggregator) and more widely any organisation in the telecommunication field, is that value propositions have changed hugely. Jstor’s reaction to the shifting mar-

48 Viewed on Ithaka website 17th September 2019 (<https://www.ithaka.org/content/our-mission>).

marketplace, and to the enabling/disrupting technologies affecting that marketplace, has been to realign its strategy from a content-based subscription service to a product-driven technology service. The Jstor Labs has been using digital humanities methods and tools, like corpus analytics, and endeavoured not to (re)invent them but to apply them into products and to take them a step further. The Ithaca strategy was no longer “limited to what they couldn’t do” and a labs team has provided a creative energy in strategy definition.

3. The Jstor Labs methodology

At the beginning, in 2015, Jstor Labs’ approach was self-described as “agile in practice”, meaning that it hinges on the five values of “work together”, “focus”, “move quickly”, “learn”, and “share”. The Labs were loosely defined as a mix of cultural and technical staff and features, and as a “safe-space to fail”. This desired mindset is consistent with the literature on innovation which advocates team diversity and “learning by doing” as key drivers. Diversity was indeed to be found in the team (which grew from four persons to nine over 5 years); their roles consist of one technical lead and three developers; one UX lead and one visual designer; one project manager and one digital humanist; and a director. Diversity is also found in the “variety of different tools and techniques” employed—such as the “flash build”—, many of which being inspired by the “lean startup”⁴⁹ movement.

There are actually two parallel three-step tracks in the flash build. The first track (a) is more design-oriented (1a. interviews with users and stakeholders; 2a. design jam, paper prototypes and in-person testing; 3a. polish and clean up). Its items and sequence are similar to the design thinking process of, for example, Ideo (inspiration, ideation, and implementation or iteration) or to the Double Diamond of the British Design Council (discover, define, develop, and deliver). The second track (b) has more to do with scrum development (1b. create the data and infrastructure; 2b. devise low-fi prototypes and working site, and A/B tests; 3b. release and measure). The Jstor Labs team, also calling the flash build a “Labs week”, hints at the weekly cycles of the scrum methodology. In short, the integration and hybridisation of a mix of approaches with different backgrounds seems to rest on a relaxed and pragmatic syncretism. As Humphreys put it “we were doing design thinking and it took a year before somebody said: ‘hey what you’re doing is design thinking’.”

There is a convergence of purpose and a process that gets the team to coordinate (they are all in the same room, all listening to the same user interviews, etc.) in order to set a common direction which is reinforced by the roles of the director and of the project manager. This objective can be visualised as the intersection of the three circles (desirable design, feasible technology, and sustainable business) of the Venn diagram by which Ideo (see Figure 36) represents design thinking or the literal “pie” diagram (see Figure 186) pictured by Jstor Labs with its three dimensions of UX, technology, and business.

49 Ries, Eric. 2011. *The Lean Startup: How Today’s Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. 1st edition. New York: Currency.

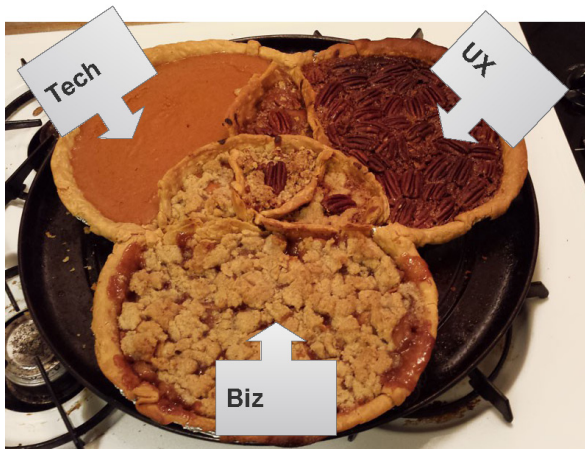


Figure 186. Illustration of the slide “Ingredients” in Humphreys, Alex. 2015.

“Really, Really Rapid Prototyping: Flash Builds & User-Driven Innovation” presented at NFAIS Annual Conference 2015. Image source: <http://uxtraordinary.com/venn-pie-agram>

I have already touched on the technology and the mindset. The technology needs to be *flexible* and allow for modularity and continuous deployment and able to *augment and query* content in a variety of manners. The mindset must accommodate *uncertainty* and time should be dedicated to the projects and eliminate distractions. The third complimentary dimension of the business perspective shall be explored. In 2017, the way Jstor Labs operate was better defined as “two related design methodologies—‘design thinking’ and ‘lean startup’”. As it is not-for-profit, business model canvases tend not to be used for the Labs team itself. But they are used for many of the innovations which need to be economically sustainable (see Figure 187). Other important rewards to be reaped are in terms of communication momentum. “The ability to show work to users early and often, with the whole team present” is therefore important. Positive feedback just as the three quoted here from users about Jstor Snap and *Understanding Shakespeare* taken from direct interviews and Twitter—“just the coolest thing ever”, “I just blew a student away showing him this”, “if I could, I’d leap through this screen and kiss you”—are very valuable.

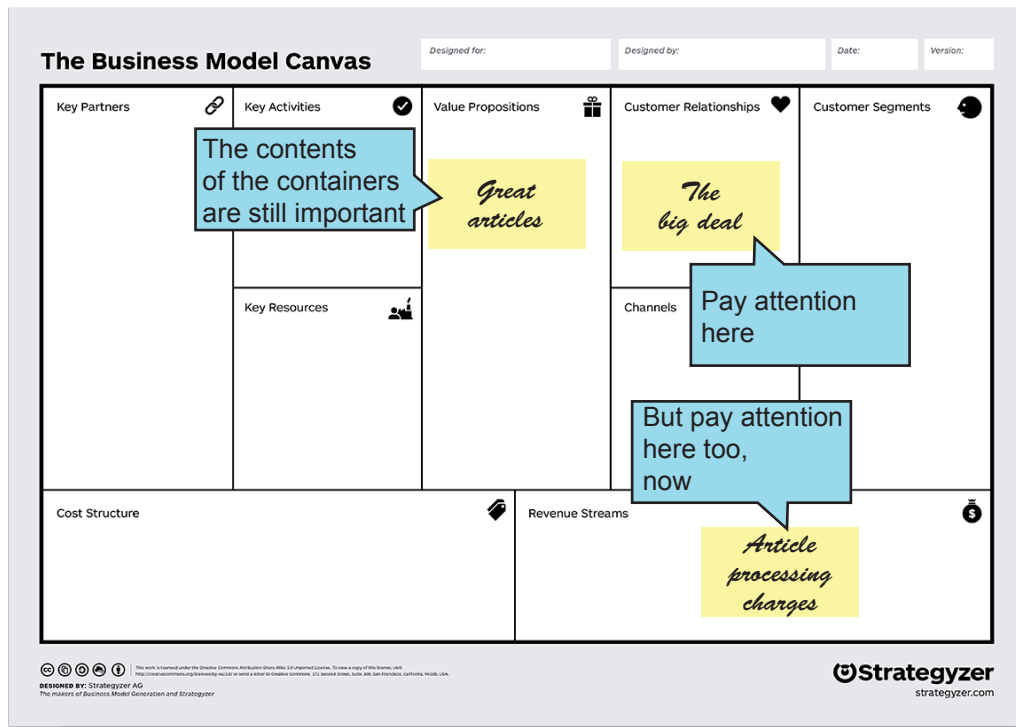


Figure 187. Business model canvas of widgets of contents for journals in Humphreys, Alex. 2017. “Getting Away from Widgets. Design Thinking as a Survival Tool”. presented at NISO Webinar: Creating the New Information Product.

4. The project “Reimagining the Digital Monograph”

A problem is that books are under-utilised in libraries. For example, a 2010 study at Cornell University showed that “55 percent of the [print] books in the university’s collections that were published after 1990 had not circulated by 2010”⁵⁰. Thus, academic libraries would be “unlikely to continue acquiring humanities and social science books” if they cannot demonstrate usage and impact. There is an important body of literature on the publishing industry (which was touched on previously in this thesis) and, because of digitisation, book circulation data (print and electronic) are widely available and exploited in the field of bibliometrics. So, it was decided to focus on the less studied qualitative information about the *needs* of the “researcher as a consumer of scholarly books”. The Jstor Labs brief was formulated as “can we improve the experience and value of long-form scholarship?” with an emphasis on the material that already existed.

This project is shown within the framework described by semiotician Deni in her 2010 article “The semiotic intervention in project: from concept to object”⁵¹ because it is apt to “interpret complex communication phenomena, such as the objects meant to function and signify through the different channels of perception”*. The first step—the *metaproject*— is *interdisciplinary*

50 Kizer Walker et al., “Report of the Collection Development Executive Committee Task Force on Print Collection Usage, Cornell University Library”. 2010.

51 Deni, Michela. “L’intervention sémiotique dans le projet : du concept à l’objet”. *MEI (Médiation et information)*, no 30-31 (2010): 12.

and preliminary. It literally is “the project *of* the project and *about* the project”* (Deni, 2010). In this instance, the team who worked on the project was made up of a user-experience researcher and front-end developer, a technical lead, a visual designer, a project manager, and a product owner. Their aim was to “improve the usability and discoverability of monographs in the humanities and social sciences—and, in turn, to grow the usage and impact of these titles.” (Humphreys et al., 2017). From August to September 2016, in advance of the project, they undertook ethnographic user research “observing users performing their work *in situ* [and] gathering individual stories of real people and their experiences” and collected “notes and photos to document his or her environment, activities, tools for carrying out research, and motivations”. The result was detailed as six visualisations of users (e.g. see Figure 188).

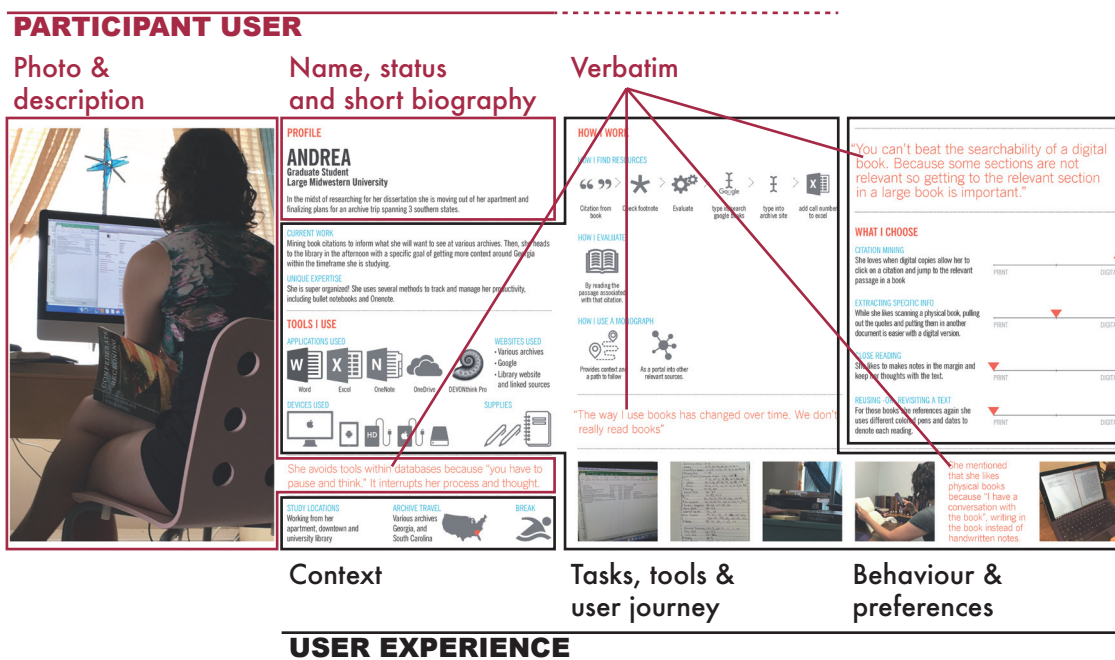


Figure 188. Single-page data visualizations of one of the six participants. in Humphreys et al. 2017. Phase 2 is the *project* itself (Deni, *ibid.*). The aim is to design one object—which in fact is a *system*—; i.e. to make an informed decision (instead of an intuitive choice) out of a number of potential concepts. In October 2016, a workshop facilitated by the team was held with stakeholders at the Columbia University libraries. The interest in this process had started to build up before the workshop and the Labs team got “greedy” inviting more than the dozen participants they had usually held workshops with. The workshop eventually gathered twenty-two people; scholars, publishers, librarians, datavisualists from a variety of different disciplines. In the morning, the input of the data visualisations of the ethnographic research were the basis of a collective discussion to map the users’ tasks, hurdles and goals (see Figure 189).



Figure 189. “Brainstorming readers’ tasks and goals” in Humphreys et al. 2017.

This mapping was modelled after the right-hand part of the value proposition canvas (see Figure 190) figuring the users’ pains/gains and jobs to be done. The aim of this first part of the workshop was to co-create a consensual mental image of the user, based on the output of the ethnographic surveys of six users. The first phase of the day was designed to converge. So, the next phase of an innovation session would typically aim to diverge as the whole process is theoretically based on alternating convergence and divergence (see the Design Council’s double diamond Figure 31 or the IBM loop Figure 32 for example).

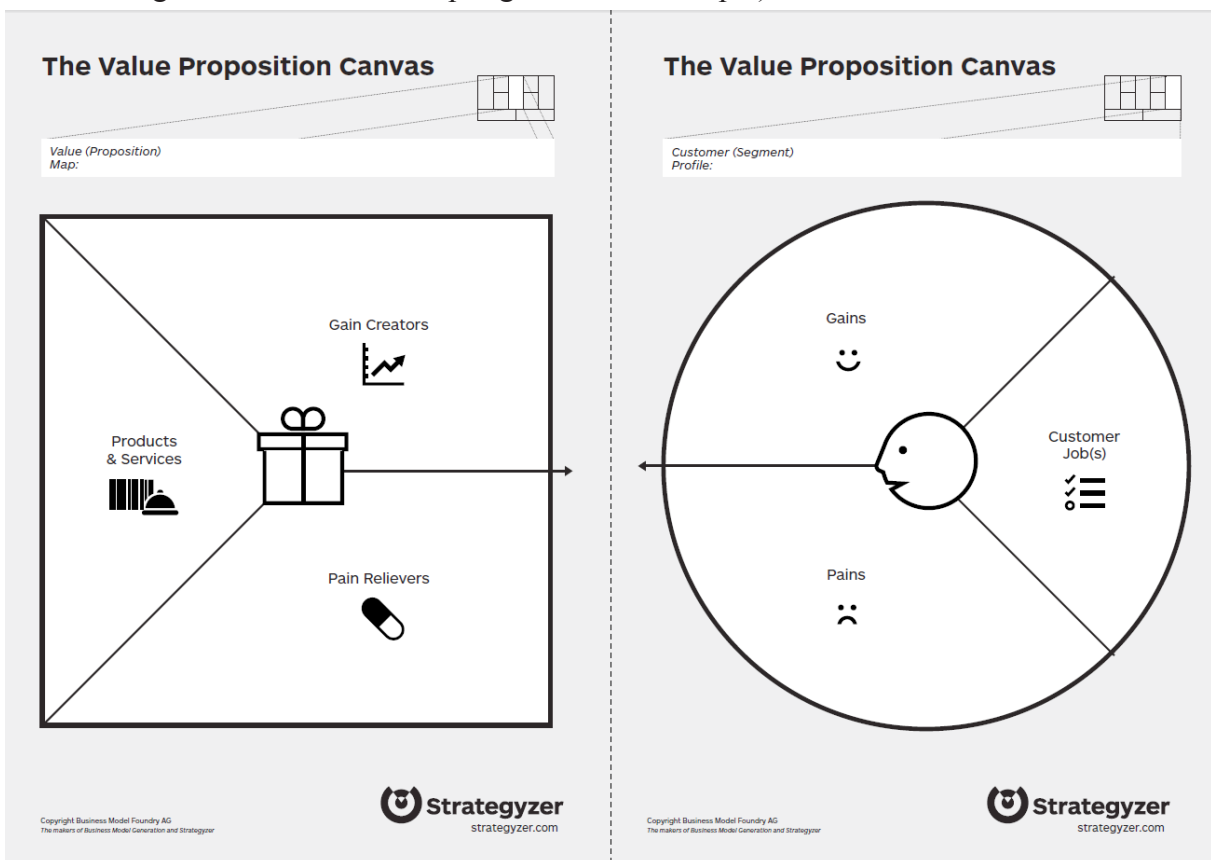


Figure 190. The value proposition canvas, © Strategyzer

In the afternoon, participants were invited to brainstorm the possible solutions (divergence). Over a hundred ideas in the form of 8x8 sketches were produced during this “design jam”. At a workshop involving 22 people who are not product designers, hot spots for further investigation were highlighted by “dot-voting” (see Figure 191). The whole process was based on open-ended conversations between the participants and free (as in non-oriented) brainstorming. What was expected of them was to find what excited them and what they cared about. This was difficult.

Because Jstor is a nonprofit operating within a community of friendly libraries and publishers it does business differently from any sort of customer relationships. The outcome of the workshop was a convergence on thirteen clusters of interest. They hinged on the monographs themselves (“great” content, integrity of long-form narratives, seamless engagement between reading and annotating in both printed and digital editions, enhanced browsing...), and on the collections (ability to position a book, recommended books...). There were also things which did not get voted but the Labs team still believed that there were some opportunities that the participants were just not seeing yet.

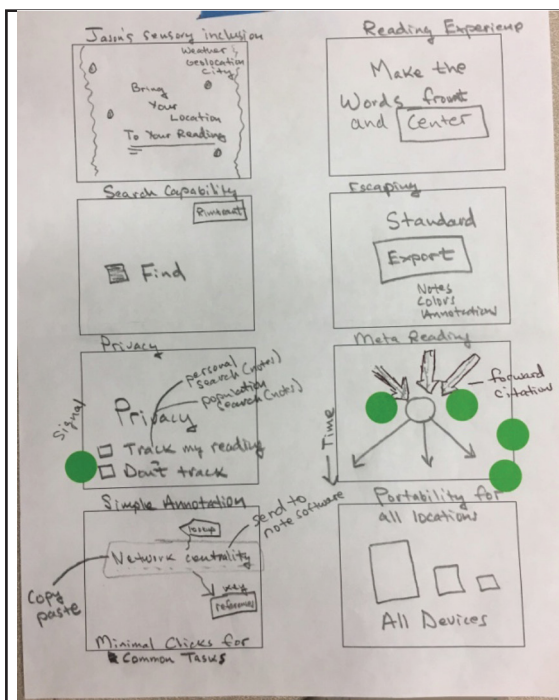


Figure 191. Using dot stickers to vote on promising ideas, Humphreys, 2017

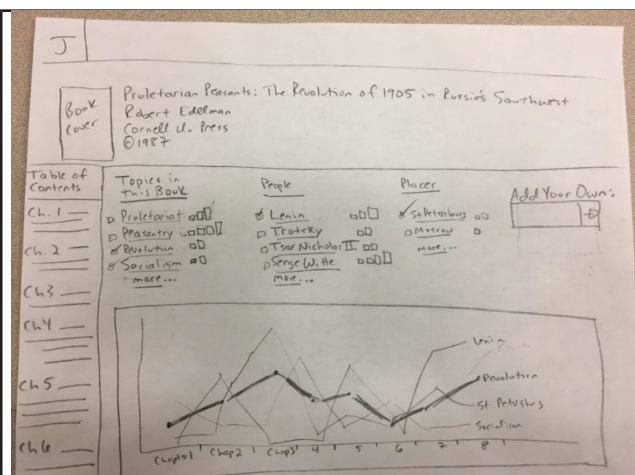


Figure 192. Designing prototypes, Another workshop idea: The “Topic Explorer”,Humphreys, 2017

The next day, the Labs team got together. Out of the thirteen clusters which were voted by the participants the previous day and what the team believed in, six core ideas were prototyped (e.g. see Figure 192). They were defined according to the three criteria of the most interesting and the clearer ideas and put through a feasibility assessment of what could be built in the next month. Primary data input was interviews with students and faculty at Columbia. And then, there were

also follow-ups with the participants by mail (presenting what was being developed and asking for feedbacks). Four more ideas which were not built have routinely been presented by Jstor Labs in front of audiences of libraries and users as a kind of blind user-testing.

The chosen path of “dot-voting” is less self-explanatory (no comments or justification was required to explain the votes, participants simply voted as they saw fit) than the two other paths described below, but also more democratic. According to the canvas designed by Osterwalder, Pigneur et al. (2014), the value proposition has to symmetrically match the user’s pains with “pain relievers” and his/her gains with “gain creators” (see. left hand side of Figure 190). Then, the features of the products and services are inferred and defined. This structured methodology was not the one favoured for this workshop. Instead, the workshop was designed based on the two principles of first alternating divergence and convergence and second of funnelling. The “innovation funnel” (see Figure 193) is a mental image of which a lot of similar representations exist. They all basically consist of generating a lot of ideas and gradually focusing on the most valuable ones—i.e. starting with creativity and looking for innovation—or going from a myriad of ideas to a handful of systemised concepts.



Figure 193. The “innovation funnel”, © Paul E. Plsek (1999)

The critical challenge at this stage is to discuss, select and rearrange ideas into a handful of concepts which make sense and can be prototyped and tested. Various paths can be taken and three are usually favoured by researchers, consultants and organisations. One could have been to group ideas into clusters and try and determine selection criteria to prioritise these clusters (see Figure 194). In fact, of the hundred or so original ideas many are similar and can be grouped in five to seven clusters. Because each idea has a name, clusters can also be given a general heading as to what they represent. More often than not, orphan ideas (very original and/or outside of the original scope) can be considered as a cluster of their own. Then the clusters are discussed in terms of their relative meaning and importance for the project, and axis (generally two for simplicity sake, but sometimes three) are sketched. The last step is to put the clusters on the

mapping in order to prioritise them (from “++” to “--”). At this ultimate stage, clusters can be combined into Minimum Viable Propositions (MVP) that can be tested at a later stage. The Jstor Labs approach was a variation on the clustering approach.

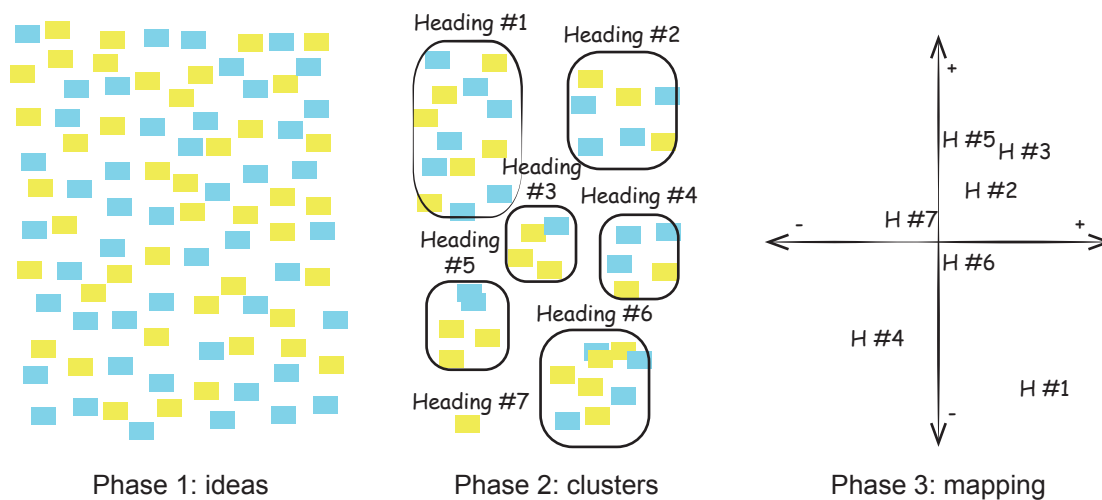


Figure 194. From generating ideas to mapping concepts, CC BY-NC 4.0

Another path would have been to follow the C-K theory (see Figure 53 and Figure 54). The starting point are not ideas but a “desirable unknown” which is developed through mind-mapping in the “concept space”. At a later stage the propositions are assessed in terms of technological feasibility in the “knowledge space” as they can draw on existing knowledge or require a new knowledge that could either be harnessed by customising an existing technology from another field or by developing it internally. The whole process is based on mathematical “forcing” and is heuristic but more systematic and less random than other creativity techniques.

The next step, in November 2016, was to work on the *product* (Deni, *ibid.*). In order to do so, the Labs group chose criteria to develop prototypes as MVPs. It was a matter of eliminating ideas because “others in the community would be better placed” to develop them or because they “feared that they were technically infeasible”. Each of the five “finalist” concepts they ended up with were sketched as prototypes.

These sketches were presented to students and faculties in Columbia during interviews. Two concepts were found particularly helpful and usable: “The Book-as-Portal-to-Other-Scholarship” and “The Topic Explorer”. Only the second concept was prototyped because there was an opportunity to turn it into a functional prototype. As per the two broad design dimensions of form and function, the interface was iteratively designed and tested while the data and infrastructure were developed in parallel. Ultimately, a session similar to a scrum sprint was held at the Columbia University Libraries with both their staff and the developers and designers of the Jstor Labs and involving “usability testing with faculty and graduate students” and “improving aspects of the user experience”.

Most testers found that the user experience was “relatively intuitive”. But there was a difference between non-experts who found the TopicGraph to be a “useful augmentation of the means that they currently use for assessing the relevance of books to their research” and expert users familiar with the topic whose reactions were “more complicated” because the more content that Jstor hosts on a topic, the better “informed” the algorithm will be. The Beta TopicGraph has been online since December 2016 for all to test (see Figure 195) and the open source code is available. Also, potential next steps such as an API or an embeddable widget that can be used by other platform providers have been identified by the Jstor Labs themselves.

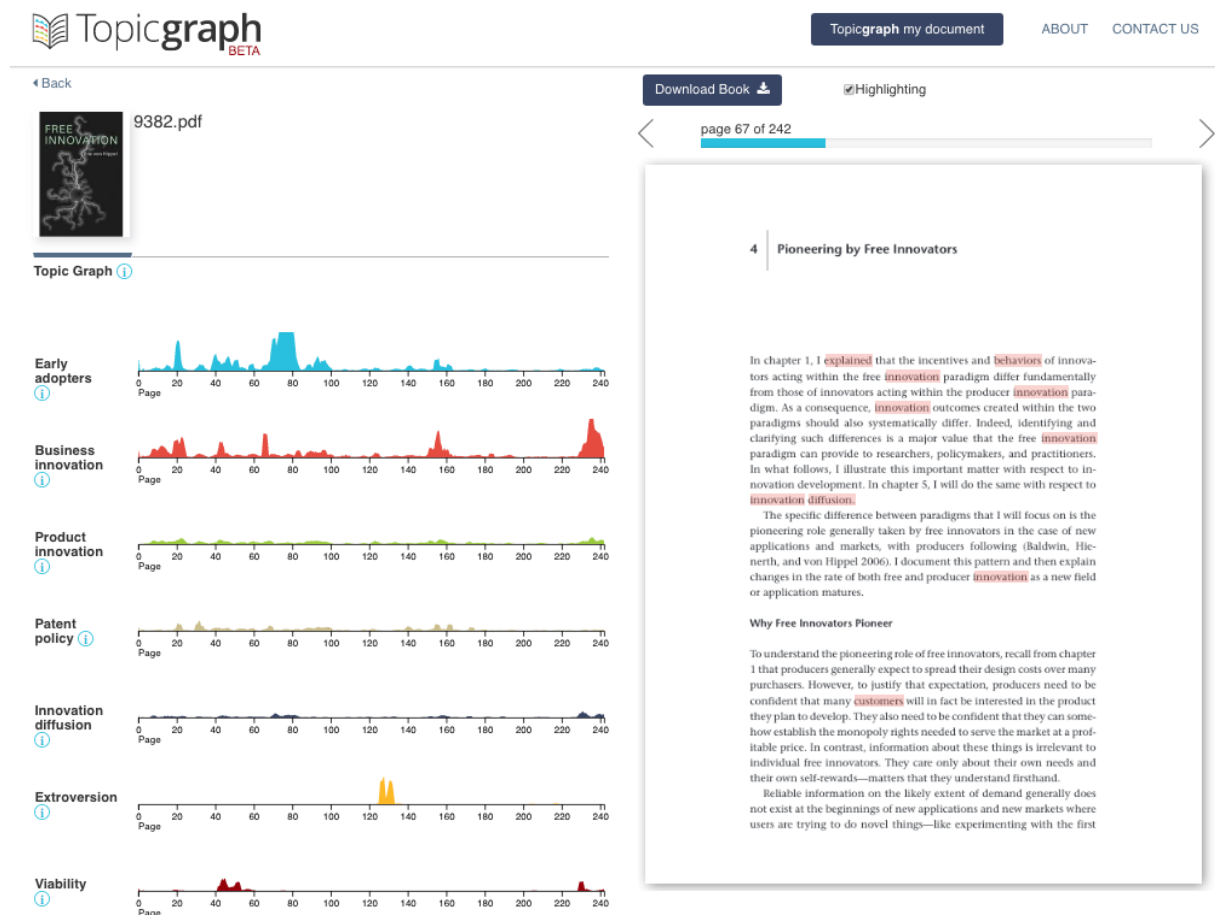


Figure 195. Screenshot of TopicGraph Beta for “Business innovation” [AND] p. 67 in the book *Free Innovation*, [viewed 24th September 2019]

Being lean with content remains difficult because a lean version of a book is not a short story, and a lean version of a collection is not a page. Re-organising the visual representation of a monograph raises issues of self-organisation and eco-organisation. Those two main challenges are, on one hand, related to the book itself “until you actually see it, it’s really hard to imagine it” and, on the other hand, to the environment of the book which is “bigger than any single organization or group” (e.g. a business model for monographs, a sustainable free-to-read and open-access model, a fair evaluation of monographs that include non-traditional and born-digital elements, text-mining across a wide range of the monographic literature).

5. PMC for the project TopicGraph

The PMC for the TopicGraph is the same as for the book *Version 0*. They both epitomise the values and features of projects in the digital humanities. The Jstor Labs is a not-for-profit organisation purpose built for the academic community. What it does is aligned with the values of this community, and the value it adds (or creates) by and large translates into the well-established metrics of impact and usage. How Jstor Labs endeavours to achieve these goals is also aligned, in the sense that its innovative process is streamlined according to the design thinking and lean startup approaches. In other words, Jstor Labs does not strive to (re)invent innovation methodologies, but it is inspired by them and adapts them pragmatically to the issues it is set to tackle. Jstor Labs is not a research laboratory as it does not aim to produce knowledge, it is closer to a creative project factory; i.e. a fab-lab. The throughputs and outcomes of its own innovation projects are assessed by test-and-learn.

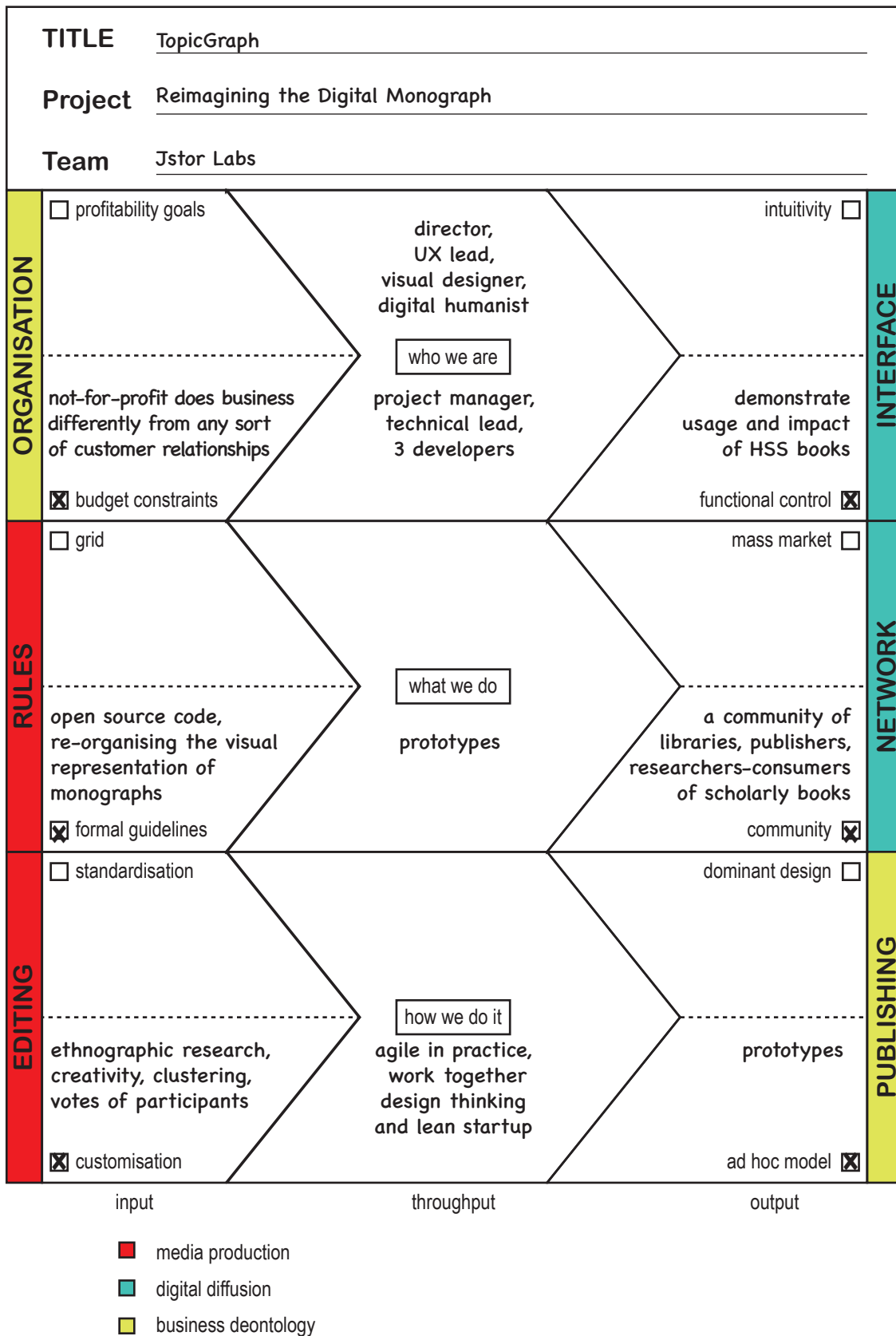


Figure 196. The publishing canvas for the TopicGraph, CC BY-NC 4.0

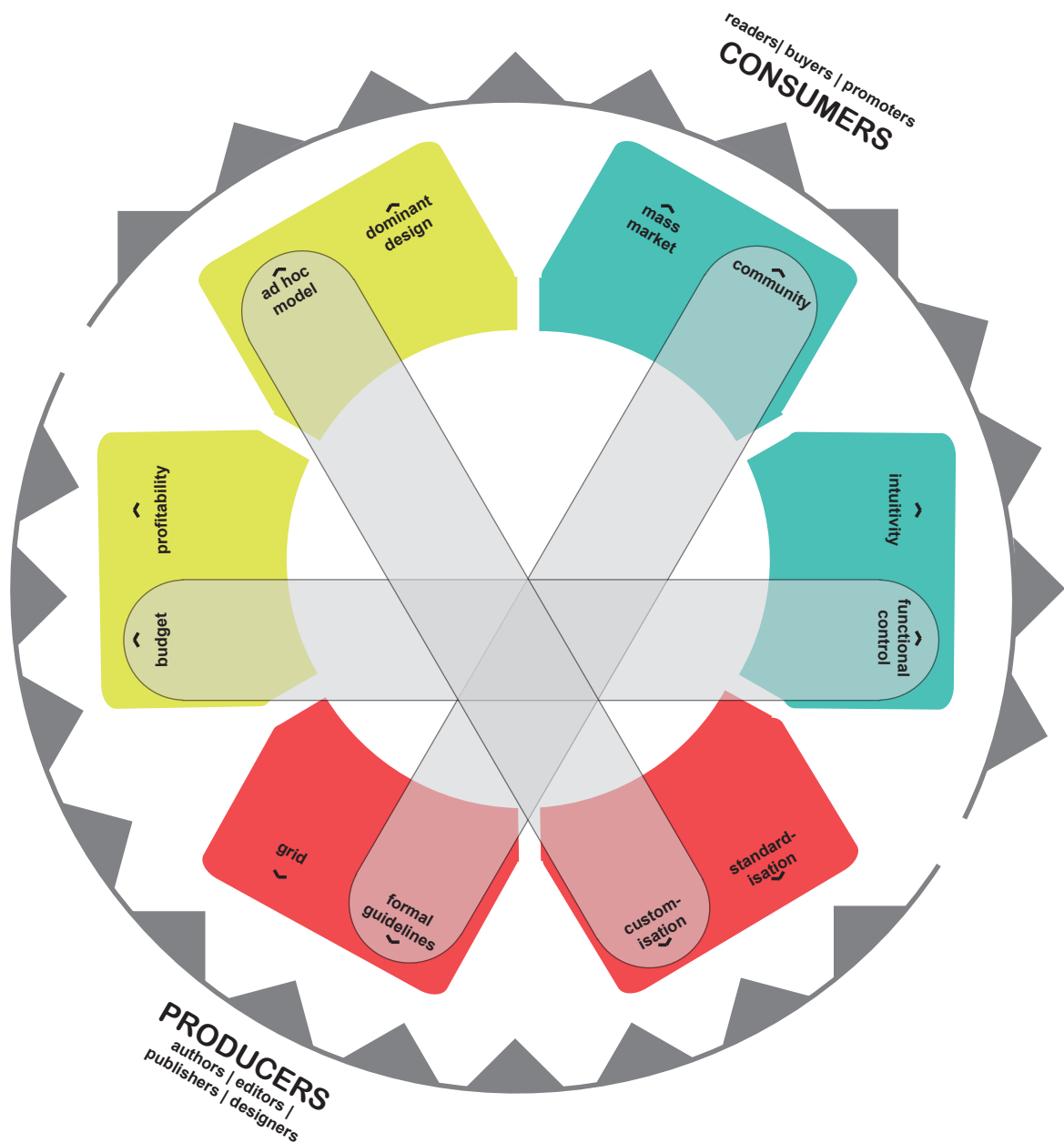


Figure 197. The PMC for the TopicGraph, CC BY-NC 4.0

6. Beyond project TopicGraph, the Jstor Labs program

The thinking at the Labs goes that innovation happens at three main levels: feature level, product level, and business level. TopicGraph ended up being a feature innovation. Its technology and its approach were used to develop a beta version of a new product—Text Analyzer (see Figure 198)—which is available on the Jstor platform and as an API for third parties. It is based on the same technology as TopicGraph and the topic model is a combination of Jstor and Wikipedia. Because of the way Wikipedia is put together, it also does translated search⁵² from a se-

⁵² The language topic models are still alpha and in development. Grants are being sought to consult linguistic experts in each of the languages to hone those topic models.

lection of fifteen languages and then translates those topics into english to find english-language relevant articles. In short, TopicGraph is a self-organising solution that gives information about what is in the book and Text Analyzer is an eco-organising solution which points to other books and documentary resources through bibliography, citations, allusions, etc. They relate to different activities that can be done with any kind of text document (article, book, encyclopedia entry, etc.).

The screenshot displays the Text Analyzer web application interface. At the top, there is a search bar with the JSTOR logo on the left and navigation links for 'Log in | Register', 'About', and 'Support' on the right. Below the search bar, the page is divided into two main sections: 'ANALYSIS' and 'RESULTS'.

ANALYSIS Section:

- Prioritized terms:** A list of terms with sliders to adjust their weights:
 - Book publishing
 - Semiotics
 - Management science
 - Information science
 - Spacetime
 An input field below allows adding a new term.
- Identified terms:** A section with the instruction 'Click to add to Prioritized Terms.' It lists various terms categorized by:
 - TOPICS:** Bachelors degrees, Biological sciences, Book publishing, Book value, Books, Business management, Business models, Computer science, Design, Digital humanities, Do it yourself literature, Economics, Electronic publishing, Hymnals, Information management, Information science, Information technology, Library security systems, Magical texts, Management science, Materials science, Neuroscience, Nonscience, Open systems, Philosophy of science, Picture books, Publishing industry, Questionnaires, Research design, Scholarly publishing, Science fiction, Science fiction fandom, Self publishing, Semiotics, Small presses, Spacetime, Style guides, Summer science programs, Systems analysis.
 - PEOPLE:** Albert Bandura, Audrey Moutat, Bernard Darras, Bernard Miège, Bhaksar, Bruno Bachimont, Bruno Latour, Lawrence Lessig, Robert Darnton, Roland Barthes.
 - LOCATIONS:** Amazon, Belgium, Europe, Florida, France, Germany, Paris, Pearson, Switzerland, United States.
 - ORGANIZATIONS:** Andrew W. Mellon Foundation, BearingPoint, Book Industry Study Group, British Design Council, Cambridge University Press, Design Council, Design Management, Design Management Institute, Drucker, IBM.

RESULTS Section:

- Results with the prioritized terms:** Book publishing, Semiotics, Management science, Information science, Spacetime.
- Search Filters:** content I can access from 1900 - 2019.
- FREE CHAPTER:**
 - An exploration of the concept of design in information systems** (Download PDF, Save, Cite This Item)
 - JUDY MCKAY, PETER MARSHALL, GREG HEATH 2010
 - Prioritized Terms:** Semiotics, Management science, Information science
 - Topics:** Information science, Management science, Knowledge, Architectural design, Social epistemology, Graphic design, Philosophy of science, Consumer behavior, Systems analysis, Metric system.
- FREE CHAPTER:**
 - Identification-interaction-innovation:** (Download PDF, Save, Cite This Item)
 - DIRK HOVORKA, MATT GERMONPREZ 2010
 - Prioritized Terms:** Semiotics, Management science, Information science
 - Topics:** Management science, Open systems, Information science, Educational technology, Information technology, Systems analysis, Philosophy of science, Interpersonal communication, Training devices, Philosophy of religion.
- FREE ARTICLE:**
 - New Books** (Download PDF, Save, Cite This Item)
 - The American Economic Review*, Vol. 9, No. 1 (Mar., 1919), pp. 108-115
 - Prioritized Terms:** Book publishing, Management science, Information science
 - Topics:** Double entry accounting, Cost control, Management science, Book publishing, Economic history, Wall Street, Total cost assessment, Labor unions, Value appraisal, Accounting changes.

Figure 198. A result page of Text Analyzer [viewed 18th October 2019]

The Labs team can be thought of as a program to launch projects. Some projects like Topic-Graph are bound to fail because this initiative is about learning and about how to convey that learning internally and to the academic community at large. Other projects like Text Analyzer, the “Jstor Understanding Series”⁵³ or “Interview Archive”⁵⁴ might be better opportunities on which they should focus to create value and impact to their users and community. Funding comes from subscription revenue of the Jstor collection and the significant growth of the last three years is grant-funded. But overall the funding of the Labs is stable and grants do not have to be systematically found for everything they do.

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- 2015. “User-Driven Innovation: Learning Faster with Flash-Builds”. Pres. to ALPSP Seminar: Disruption, Development and Divestment.
- 2016. “Design Jam: Brainstorm innovative ideas by focusing on the user”. Pres. to AAUP Annual Conference 2016.
- 2017. “Getting Away from Widgets. Design Thinking as a Survival Tool”. Pres. to NISO Webinar: Creating the New Informatio Product.

53 The series started with just one play, just to see what was possible, for the *Understanding Shakespeare* project. The underlying issue is how it could be generalised and what potential could it have in the long term. Basically the Labs projects are very discipline- or topic-specific experiments. What started with Shakespeare went on with the Constitution and then, with the release on the Jstor platform of the full “Understanding Series”, which includes Shakespeare, the US Constitution, the King James Bible and growing collections of commonly-taught British and American literature. That is the Labs’ approach to the problem of generalisation: one step at a time. Sometimes that step takes three years while grants or partners or opportunities are being sought.

54 *Interview* was a partnership with the Kunhardt Film Foundation that makes documentary videos for the TV channel HBO. They came to Jstor Labs to figure out what could be made of their material from their documentary *King in the wilderness* about Martin Luther King (full length video interviews, transcripts) in the educational context. The transcripts were tagged with topics and could be linked with articles and chapters in Jstor with mentions of them but also with background material from Wikipedia, other mentions of the same topic in the “Interview Archive” and relevant images from the Artstor database.

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7.2. Appendix

See Appendix 6

Chapter 24.

Insights from the case studies

Over three and half years of research, not everything was expected, there were discoveries and surprises. These is with this short collection of the most striking serendipitous findings that I wish to begin my conclusion.

1. About the stakeholders

1.1. What do readers want?

In the research question of the introduction, the reader was also presented as a client; i.e. the most effective promoter of books he had enjoyed reading. Then, in Part 1, the reader perspective of the customer experience was the focus of my enquiry. Readers declared (e.g. to Amazon or to the BISG) that the two rational features of readability and price were what mattered most to them. Since pricing issues have been well-studied in other fields and are not the focus of my research, I dugged deeper into what readability means. It actually is mainly concerned with understanding and learning. What readers did not declare, probably because it is tacit or infra-ordinary, is that the editorial enunciation of a knowledge book and the mediageny of the trans-media elements of the system which surrounds it are intuitively taken into account. In other words, the reader is influenced by rational elements (price and convenience), but also, and at the same time, by features that he perceives subconsciously; i.e. as if they were immediate. He is what designers refer to as ambidextrous. In the cases, I discovered two things I did not know about the “right brain” workings of the readers. One was that the readers of *The Conversation* were drawn towards involving subjects and stories (e.g. health and science issues for which everybody feels concerned). Another was the realization of the importance of adding mediativity (a mix of emotion and information, affect and cognition) to scientific information in *Nature* and *Science* and by representing scientific concepts visually. This came as a surprise because I had not anticipated that “left brain”-inclined scientists were so sensitive to that rhetoric mix.

1.2. How do author-designers create knowledge books?

Authoring a book, and a knowledge book in particular, has always been challenging. In my opinion, the nature of the challenge is shifting from being published to publishing. Why authors write and in what capacity has remained of the utmost importance, but how they design their work has become essential. In other words, design skills should complement purpose and knowledge. What surprised me is that, conversely, designing is also a way to research better. The analysis of Borja de Mozota’s books showed that one striking feature of her style is list-making. For Goody, this intellectual technology is “a mode of classifying, of defining a ‘semantic field’” and of perceiving patterns. But there is a risk of “over-generalisation” and “list-making alters not only the world out there but the psyche in here”. In what could be analysed as a balan-

cing act, Borja de Mozota eventually worked on numerous cases in order to demonstrate and advance her theoretical work. She used them to illustrate her latest books that helped ground these publications in “real life”, as counter-points to a higher disembodied theoretical abstraction. As I am not a psychologist, I could only assume that it changed her “psyche in here” in a similar manner to what Sousanis declared. For him, authoring serious comics is not only a means of presenting serious inquiry, but also of expanding “thoughtspace”. It is opening authors to “the making of unforeseen connections” and “weaving together diverse ways of seeing”, drawn from different fields. Sousanis described an actual generative cycle of doing more research to address aesthetic concerns. Scientific author Merkle similarly argued, in *Science*, that “images remain powerful tools for learning, documenting and facilitating thinking”. For her, thinking in, and with, images enhance observational skills and contributes to formulating deeper questions. She draws parallels between creating a graphic and writing.

2. About knowledge books

2.1. Performativity and rhetoric in “how to” books

In resonance with the archetypal question of what is good design, what is a good knowledge book? A knowledge book is not an object. It is a system which is an element of a transmedia system. A well-designed knowledge book is not an intermediary. It is what is referred to as a mediator in the ANT. A successful knowledge book is beyond a “make-happen agent”. It is what McLuhan called a “make-aware agent”; i.e. a “book-as-performance”.

For instance, producer Jerome Agel conceived a media system for *The Medium is the Massage* as a performance. This performance went beyond the book to encompass a media event promoted “before, during, and after the moment of publication”. This approach is consistent with the Peircean credo that thinking is behavioural and with McLuhan’s claim that it is “experience, rather than understanding, that influences behavior”. In design terms, a good book could be so defined as a performative and transformative artefact.

2.2. Different perspectives and gestalt

Form the reader’s point of view, knowledge books should offer different perspectives. The optic metaphor of the differences between what the right eye and what the left one sees, which allow the brain to perceive depth (the third dimension), applies. By extension, intellectual perspective is gained by this mechanism. For the author-designers and the editor-designers, it means that well-designed knowledge publications play simultaneously with the principles of gestalt and can be hybrid; e.g. “part book, part magazine, part storyboard” (*The Medium is the Massage*). This hybridization is an inclusive gestalt that blurs the analytic dissociation of senses and functions that can accommodate “profound matters” and “froth” alike (*The Electric Information Age Book*). This simultaneous multifaceted approach can be thought of as cubism that displays different perspectives on the same plane. This juxtaposition is also the mechanism at play in

Conclusion

Chapter 25.

Publishing innovation and the KDT

My first research question was as follow:

«1. What theory for knowledge book publishing?»

«1.1. How can a theory help to innovate in publishing?»

«1.2. Can knowledge design be articulated with theories of knowledge and of creativity?»

«1.3. Is design thinking a relevant approach?»

Digital humanist Jeffrey Schnapp coined the emerging concept of knowledge design. My endeavour was to show how it can be situated in the fields of Design and of Information and Communication Sciences and to propose a theory. As per the taxonomy of the field of Information Systems Research, the KDT is a type V theory of “design and action” based on logical positivism and pragmatism; i.e. “how to do something”. The purpose of the KDT is innovation in publishing and, as such, the concept of knowledge design is both analytic and performative. The scope of this theory is knowledge books. It applies to the system of knowledge books and further research would be needed to assess whether it could apply to other systems.

1. Is knowledge design a new publishing paradigm?

The Knowledge Design Theory is specifically composed for knowledge books and articulates the framework of Knowledge in DSR and the C-K Theory (see Figure 199). The Design Theory of Knowledge is an ontological and logical representation of the knowledge systems and information processing. Its output is classified in four quadrants which can be innovative to various degrees (i.e. improvement, exaptation by consilience or true invention) or not (routine design). As its authors admit, it does not address the epistemological issue of its relation to human knowledge. The C-K Theory is designed to achieve radical or disruptive innovation (i.e. paradigmatic upheaval or “true” innovation) rationally. It is based on the mathematical process of forcing by saturation of the initially unsaturated entity of concepts with knowledge (to be found outside of the knowledge base of the participants, to be extrapolated by consilience, or to be developed completely). A problem with forcing is that it is both stringent and complicated to understand for those who are not mathematically-minded. These two theories come from scientific and technical sciences, but very few editors and publishers have such a background (except for those toiling in STM publishing) and none is expected to have it in the specific activity of the knowledge design of knowledge books.

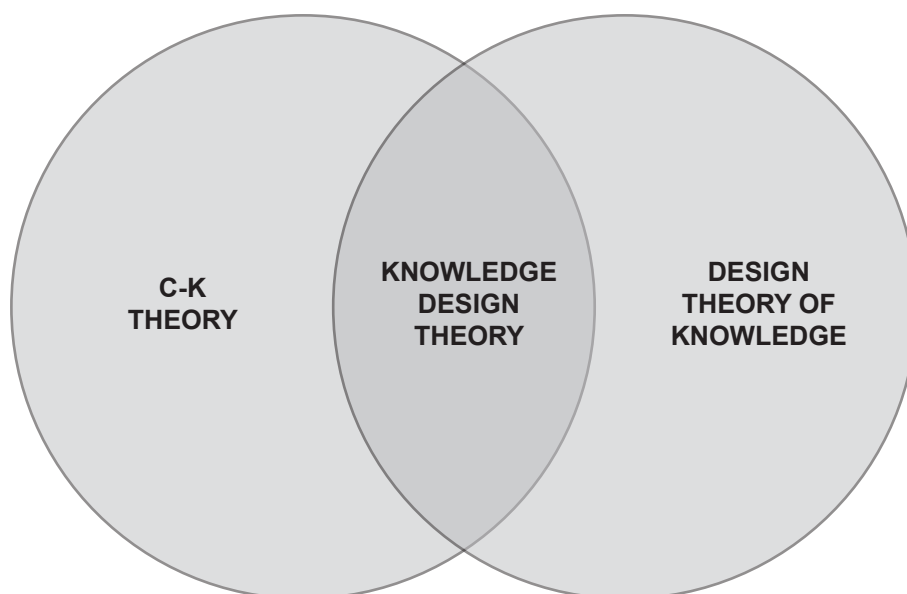


Figure 199. The first articulation of the KDT, CC BY-NC 4.0

How could these theories be easier to appropriate? On this first issue, historically—and more so, fundamentally—engineering design has made engineered artefacts easier to appropriate by non-engineers and users alike and, subsequently, design thinking has processed design in ways appropriable by non-designers (e.g. people in business or in the humanities). A similar process should enable authors, editors and publishers understand the KDT and use the PMC. At this present stage of writing and having to present and defend this thesis, I am aware that my research work and the knowledge it is intended to have produced might be complicated to read. What should make it understandable is that its first readers, the members of the jury, are seasoned researchers themselves and are therefore used to reading this particular kind of publication that are doctoral thesis. This is also the logic behind the strict formatting rules and guidelines edicted by Hesam. As a doctoral student of the Cnam, I am bound to “scrupulously adhere”* to a prescribed style sheet in order to achieve a desired “consistency of format”* at the national level, “facilitate the readability and clarity of the document for the reader”*, and “facilitate the writing for the author”*. The analysis of this standardisation correspond to the typical straightforward alignments of the PMC. Then, in a logic of widening concentric circles, and in the pursuit of an academic career as a teacher-researcher, it would be my responsibility to add value to the knowledge created by my research and make it more comprehensible in order to teach it to students. Ass an academic, my social responsibility would also be to disseminate what I would have taught to students to a wider circle of the general public. It would have to be written and formatted to make it apprehensible by people who can not be expected to meet the prerequisites of students; i.e. it could be a knowledge book with an appropriate transmedia system. If the KDT was eventually to become common knowledge, it could then be popularised. I am of course aware that even though the chaos theory is studying how the flap of a butterfly’s wings in Brazil might set off a tornado in Texas, this is a remote possibility that any thesis ever becomes common knowledge. I would less immodestly refer to my ambition for the KDT by

the metaphor of a pebble that I am throwing into a pond with the hope that it will set a ripple effect in motion.

Another issue is to address the complexity of the media environment. The Design Theory of Knowledge and the C-K Theory do not because they are context-agnostic. This challenge could be approached by pairing systemic thinking and complex thought with design; i.e. the emerging concept of systems design (see Figure 200). The aim is to address complexity as it is (i.e. not to dumb it down into something antinomic with the richness of its essence), but to avoid representing it in an unnecessarily complicated manner. Designers' input should be sought in order to declutter the representation of the KDT (see Figure 57).

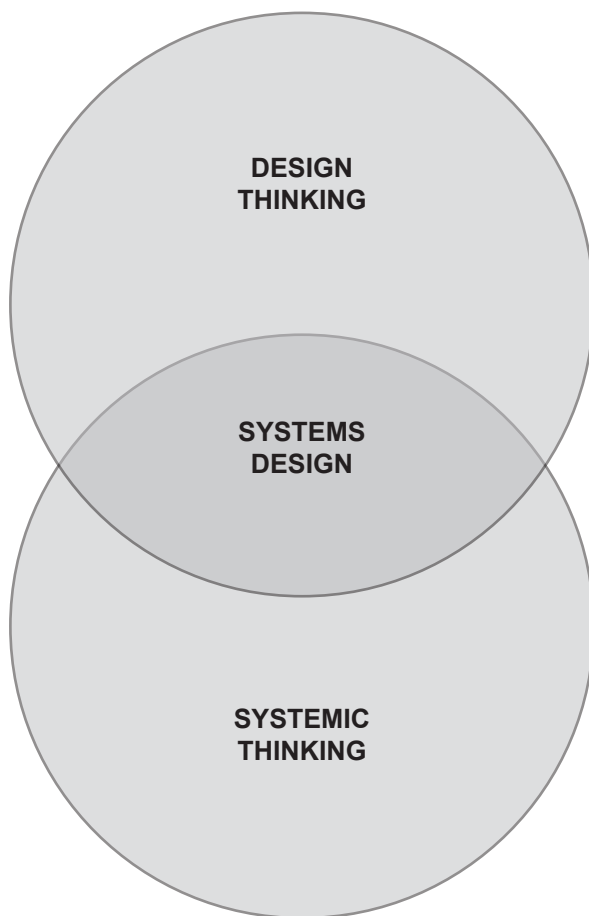


Figure 200. Systemic design, CC BY-NC 4.0

Both the design challenge of perfecting the representation of the KDT and the research issue of developing my proposal for knowledge design and the emerging systems design, and possibly integrating them in a more holistic innovation theory (see Figure 201), are open-ended. They depend on the discussion that might, or might not, take place in the ICS, Design and Publishing Studies communities (this is not a limiting list) and between them. In other words, these discussions would have to be interdisciplinary, and this—in itself—remains a challenge both in the academic and in the corporate worlds.

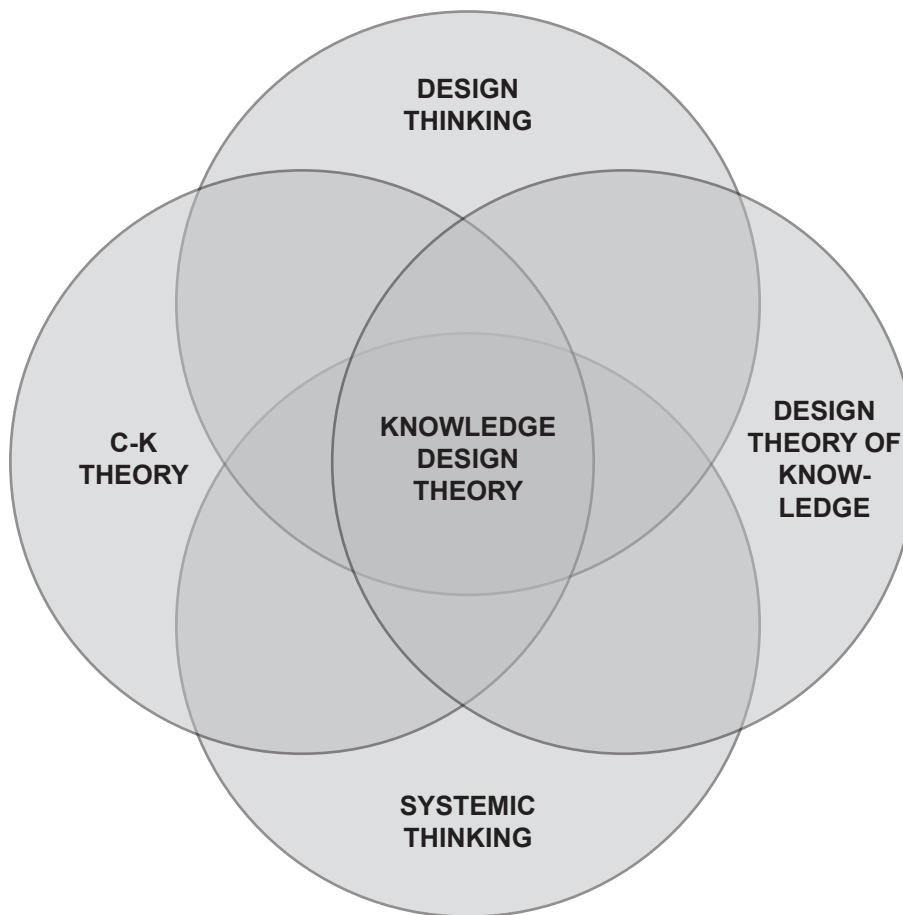


Figure 201. The background of the KDT, CC BY-NC 4.0

2. How explanatory is the KDT?

The four cornerstones of the KDT are—by design—similar to the four steps of the design thinking project process (i.e. the Double Diamond). An *undesirable unknown* is a wicked problem (it corresponds to the “discover” phase), an *undecidable brief* is a design brief (the result of the creative process of ideation in the “define” phase), an *invention-innovation* is a suite of pre-prototypes and prototypes to be tested (POCs produced at the “develop” phase), and an *innovation-solution* is a tested prototype ready to be launched (a MVP which is the outcome of the “define” phase).

2.1. Phase 1: what is the problem?

The first phase (how to formulate a design brief?) is based on the two following steps (1.₁ and 1.₂) and an <attitude> and their outcome is a design <brief>: 1.₁ <desirable unknown> the authors have acquired extensive knowledge of some topics or field of interest; 1.₂ <define> the authors have written at least a synopsis, a draft or an academic text (a conference paper, an article, a series of texts, a dissertation); <attitude> the author-designers are willing to discuss with editor-designers and publisher-designers how to turn their knowledge into a form that is

understandable and attractive outside of their community and to let them edit and design an artefact accordingly. For example, in five selected cases of publishing projects:

- 1.₁ Alexander Osterwalder researched business models during his doctorate under the direction of professor Yves Pigneur; 1.₂ Osterwalder wrote academic articles and a PhD thesis *The Business Model Ontology*; <attitude> the author partnered with a producer (consultant Patrick van der Pijl), two co-authors (professor Yves Pigneur and consultant Tim Clark), a creative director (designer Alan Smith) and 470 contributors (practitioners). They agreed on a <brief>: how to provide a “how to” handbook for executives, consultants and entrepreneurs for understanding, designing and implementing business models in order to remain competitive?
- 1.₁ Marshall McLuhan gathered “seventy-five percent” of new material in the literature and by observing modern life though his editor had forewarned him that “a successful book cannot venture to be more than ten per cent new”; 1.₂ McLuhan wrote his influential, but difficult to interpret, essay *Understanding Media* which, as he was aware of, constituted “the process rather than the completed *product* of discovery” (Schnapp & Michaels, 2013); <attitude> producer Jerome Agel and designer Quentin Fiore approached the author with a proposal that “they’ll be doing all the work; he’ll be approving”. The <brief> was: how to offer the masses a McLuhan’s book for children in order to popularise his *massage*? [typographical pun reproduced]
- 1.₁ Nick Sousanis, also a comics artist, worked on his doctoral research in education *Unflattening*; 1.₂ and <attitude> he iterated on his work using the “workspace” of the “panels” to formalise his thoughts and he expanded his thinking and his perspective in the expansive “thoughtspace” of comics as a whole, and he presented his PhD thesis as a comic. A <brief> could have been: how to show educators the importance of visual thinking in teaching and learning in order to help them teach better?
- 1.₁ Brigitte Borja de Mozota’s academic career in design spanned twenty years from her PhD thesis on design and marketing until the release of her handbook *Design Management*; 1.₂ *Design Management* became the “bible” in the eponymous field for practicing designers and managers, graduate students and researchers; <attitude> the author and co-author consultant Steinar Valade-Amland decided to team up to write a new book but could not agree whether it was going to be a “follow-up” of the standard *Design Management* or a “guide-manifesto”. Therefore, the <brief> could not be defined because the question of writing for students or for business leaders could not be decided, neither could the question of the writing style and the illustration content, nor the question of the materiality and of the purpose (a “how to” book or a textbook?).

1.₁ as an action research for this doctoral work, I contacted the organisers of the 2nd Écridil conference in Montréal; 1.₂ I contributed to the co-creation of the publishing process of the Écridil conference with the organisers and under the authority of the editorial board; <attitude>. I organised and facilitated a cooperative workshop and participated to a booksprint. The participants came up with the three following <brief>: how to incentivise curious readers to appropriate the contents in order to be empowered? <brief>: how to get the actors of publishing, design and literature together in order to build commons for an *épistémè*? <brief>: how could academic readers and publishers discover a cabinet of curiosities in order to grasp the idea of what digital reading, creation and writing are?

2.2. Phase 2: how to solve the problem?

The <brief> is the cornerstone upon which the two phases of problem-finding and problem-solving hinge. The <attitude> of the author-designers should be open to discussion with the editor-designers. The latter should seek to test prototypes of knowledge book with users (readers essentially) and get as much feedback from them as possible. The publisher-editors should allocate appropriate resources to design and produce the books and their transmedia system and, even more importantly, should grant the editor-designers the right to fail.

The two steps of the problem-solving phase are: 2.₁ <develop> which is about adapting and shaping the content and 2.₂ <deliver> an artefactual medium that fits its purpose and fit in the media ecosystem. The final outcome of this knowledge design process is a knowledge book and a transmedia system.

2.₁ development of knowledge books is adapting the (text) content and augmenting it visually (with illustrations and graphic design). Adapting and shaping the content is a long and demanding process. For instance, it took Osterwalder five years of teaching and consulting from his ontology to designing a canvas that could be appropriated by his audience of students and professionals. In a way, teaching and consulting were his ways of prototyping and testing his solution in real life with real people. He then upscaled and accelerated his test-and-learn process by sharing materials online with a community of prospective readers and collected their feedbacks through a custom-made platform. Another instance of this lengthy authoring process are McCloud's and Sousanis' comics thinking. The time and effort they invested in adapting ideas and concepts into images, interweaving text and images, composing frames into pages save the readers some of the psychic efforts of reading by making it easier to receive formally customised conceptual chunks. In other words, shaping the content takes time and effort. In yet another case, the Écridil booksprint was an attempt to shrink time by adding resources. The logical reasoning behind it was that if there was less time, the same number on man-hours could be made available by increasing the headcount proportionally to the decrease of hours. In retrospect, the required maturation of knowledge design was overlooked. This process is well documented in the field of science as the "sleeping beauty index" (i.e. innovative ideas take time to become common knowledge) and in the field of narrative fiction as the "wisdom of the community" (i.e. what Eco describes as "a process of verification that is based on slow, collective, public performance by what Charles Sanders Peirce called 'the community'"). Not only should the content be transformed, but it can also be augmented. For example, the *BMC* evolved from the VR of the thesis to the AR of the book. Layers of visual information (versus juxtaposition of information in the thesis) and other instances of hyperrealist photographic composition (vs. abstract diagram) made it easier to apprehend ("to seize, either physically or mentally") compared to the thesis which was more difficult to comprehend ("to seize with the mind"). A similar process occurs with *Science* and *Nature*. The content is at the same time simplified ("no jargon") and enhanced (addition of appropriate images, creation of explanatory diagrams, graphic design) in order to make it more accessible for non-specialists. In any

case, text and illustrations should blend together. At *The Conversation* for example, photos are deemed better than sketches or models because the text itself is often metaphorical (and hence can be seen as a sketch).

2.₂ delivery can be approached from an internal and an external perspective. Because knowledge design often involves teams (author, co-author, producer, designer, illustrator, etc.) internal communication is essential. For example, the *BMC* team acknowledged that visual tools—a practical simple user interface—facilitate group discussion. In addition to practicality, the Cambridge Core team observed that “emotionally designed” artefacts (e.g. personas and project tickets) have made internal communication easier. Enjoyable and fruitful communication (formal and informal exchange of ideas) is the main purpose of a conference like Écrivil and the participants actually enjoyed getting together. Because they did, and also perhaps because they were invited to participate in the knowledge design of *Version 0*, they were involved and appreciated finding what they discussed in another form. This reshaping of ideas is a feature of transmediality (from oral to written). In this respect, *Version 0* was more a remediation between the community of the participants than a dissemination to fellow researchers and professionals in publishing who did not attend the conference. Dissemination to a wider circle outside a close-knit community implies reaching out. For example, Agel staged a fake demonstration against *The Media is the Massage* to stir an emotional response of the general public. He entertained a wider perspective of a “book-as-performance” which encompassed a demonstration as a media event. *The Conversation* adopts a similar attitude of adding mediativity to scientific information (a mix of emotion and information, affect and cognition) and of showcasing the most popular disciplines of health and science because they are *involving* and hopes that they have a ripple effect on other more “distanced” research.

From the examples discussed in this thesis, it can be inferred that the KDT is working as an interpretation framework for knowledge publications. This theory is operational to analyse the impact of formal innovation on the dissemination of consensual knowledge content outside of a first circle of peers and specialists. It is not about releasing original and less formatted first-hand research as fast as possible to specialists who must know about it. For example, the current Covid-19 pandemic is a dramatic reminder that primary raw data such as datasets in medical trials must be made available with no delay to other qualified researchers in order to provide the medical community with additional information and help them to find efficient cures and remedies. It is also a truism that those data are completely useless for non-specialists. Once, hopefully soon in the Covid-A9 case, specialists can make sense of the available information, information can be shaped as knowledge.

Whereas immediacy would be desirable to transmit and exchange data, it remains a tenet of semiology that immediacy is impossible (the Peircean “impermissible immediate relation”). In the case of knowledge books, not only immediacy is unthinkable, but mediacy is desirable. Schematically, authors first need to formalise their knowledge (e.g. through explanatory diagrams) in order to understand it better as per the classic maxim: *Ce que l'on conçoit bien*

*s'énonce clairement*¹ (“What is clearly thought out is clearly expressed”). Then, authors should rehearse explaining and discussing their knowledge, ideally with peers and students, until the feedbacks they get about their idea-prototype become satisfactory; i.e. the message gets through as the knowledge and how it is being conveyed has become consensual. Eventually, author-designers should team up with other mediators called editor-designers and publisher-designers in the KDT (typically editors, graphic designers, publishers) in order to design the knowledge they wish to convey in a desirable form (e.g. a knowledge book and its transmedia system). This form is preferably written and visual (e.g. from exploratory to explanatory diagrams) and designed with its intended users in mind. The difficulty at this third stage is that the content and the exploratory diagrams are no longer supporting the author-mediator’s performance, instead they are stand-alone and have to self-supporting. This is why knowledge books are better defined by what they do than by what they are; i.e. they are performative. The KDT and the PMC are not so much about what a book is about than how its mediators should go about it in order to involve its users by turning the book and its transmedia system themselves into a mediator (as a non-human mediator identified in the ANT).

1 Boileau, Nicolas. 1674. *L'Art poétique*.

Chapter 26.

Knowledge books and the PMC

My second research question was as follow:

- «2. What is the purpose of knowledge books?»
- «2.1. Why do authors create knowledge books?»
- «2.2. Why do readers get, read and/or recommend knowledge books?»
- «2.3. How do publishers value knowledge books?»
- «2.4. How can stakeholders cooperate efficiently?»
- «2.5. What is the problem in today’s digital information society?»
- «2.6. On what principles should a publishing model be based?»

Graphic Designer Armand Mevis in his text “Every Book Starts with an Idea: Notes for Designers” (2015) explains that, obviously, “all books start from their content”. But, in addition, because books must be edited and designed “a book is a collaborative process” and hence communication is necessary to enable collaboration within the publishing project team. Therefore, he found that “all books start with a question”. For the purpose of this research work, this assertion can be rephrased as: knowledge books should start with a consensual brief on which a team of author-designers and editor-designers work collaboratively. And this challenge is, prior to thinking about design, about “the shape of the content”. In more general terms, this preliminary phase can be associated with what is called problem-finding. The outcome of this first phase is a design brief. The second phase of problem-solving should start with a clear question. For Mevis, “what matters is if a book actually works or not”. For it to work, there is a twofold process, akin to the Double Diamond, of *develop* (i.e. “to link the content to a concept”) and *deliver* (i.e. “to link the concept to a form”). Eventually, “all books tell stories about why or how they are designed” and the PMC is designed to tell this story.

Eight out of the nine cases have been analysed with the PMC. There is no PMC for the Cumulus Paris conference because there was no specific publishing project developed but, instead, traditional proceedings were published remotely. Neither is there a PMC for Cambridge Core because it is a program and not a project, and the PMC was designed to analyse publishing projects. This is a reason why the Cambridge Core case is not one of the nine case studies in the body of this thesis, and instead is presented as an appendix.

1. Aligned strategies can be innovative

The four projects analysed have in common a degree of novelty regarding the setting of their “book chain” which were customised in order to produce ad hoc models, but they differ on the two other myths of “the digital divide” and “the individualist mass society”.

The two projects TopicGraph and *Version 0* were both developed in a context of digital humanities and share the same characteristics of being budget-constrained and of applying functional controls on one hand and, on the other, of being conditioned by the formal guidelines of a community (see Figure 198 and Figure 166). How those projects were designed is more interesting

for my purpose than their outcome. The participants were prioritised over the potential end-users. *Version 0* is more a reminder of what happened during the Écridil conference than a stand-alone book, and its graphic design had to be altered because the publishing tools proved unable to deliver on the desired formal specifications. But the booksprint experience was original and interesting in itself and the technological developments showed some potential to improve a collaborative open-source publishing suite, sometimes in the future, for whoever wants to continue what was started. TopicGraph never went beyond the prototype phase and will not be further developed for lack of interest by the community to whom it was destined. Nevertheless, the Jstor Labs team gathered a lot of useful insights during their workshops with users and while developing the technological framework. The use data were also analysed and contributed valuable feedback. Out of it came the Text Analyzer project which is potentially more encouraging. In other words, the two above-mentioned knowledge design projects were more about how they have worked and performed than on how their formal characteristics could help users appropriate them. The outcome of these projects should be considered as *ustensils*² by authors rather than tools for users. It is echoing Graphic expert Richard Hollis' comment (2009, "Ways of seeing Books") that, with the arrival of new technology, production values can be downplayed and projects deployed just to satisfy demands for "a ustensil with perfect control". The problem is that ustensils which are not used (e.g. the TopicGraph) are unsustainable.

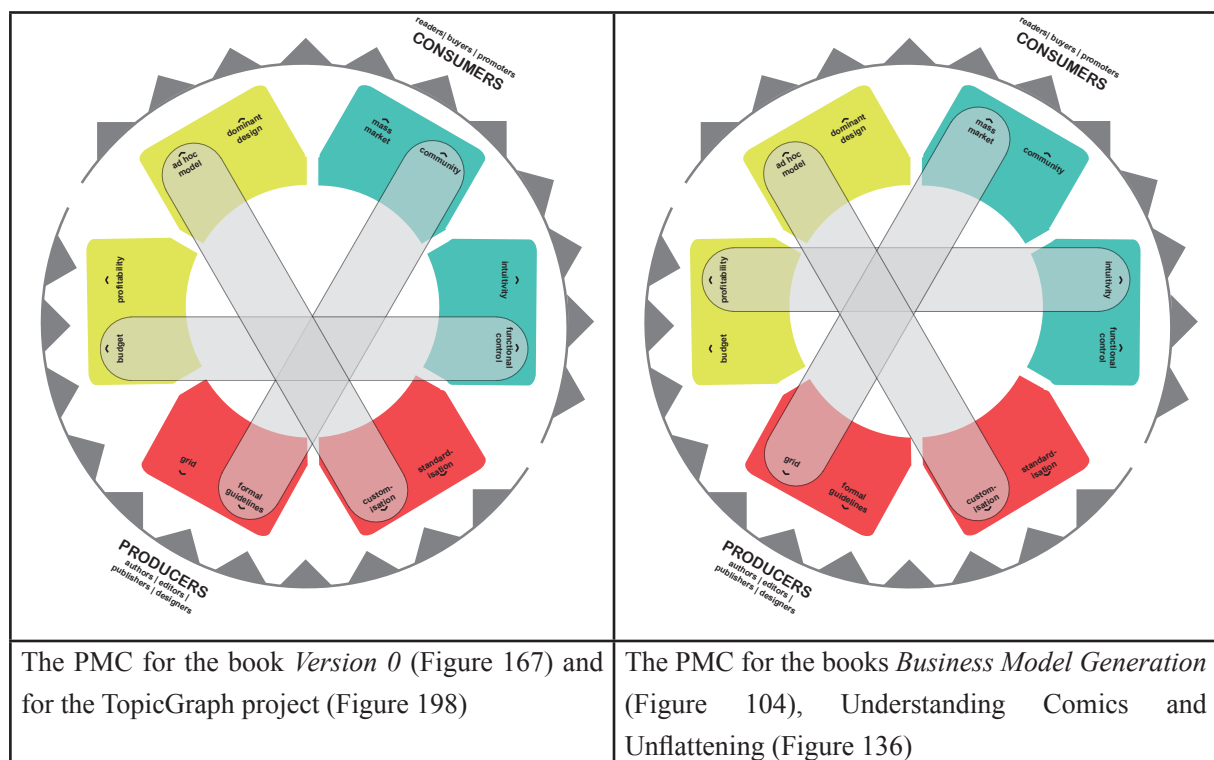
For some reason, maybe because their topic is more practice-based than about producing theoretical knowledge, the authors of the *Business Model Generation* and of the two comics *Understanding Comics* and *Unflattening* were more concerned with formal considerations (see Figure 104 and Figure 136). These author-designers were able to publish their books without publishers (because they have the skills, a clear view of their objective, of how to reach it, and the financial means) and they chose to do so in order to retain more control on how and what they would produce. For them, publishers eventually proved desirable for their reach but did not contribute to the making (editing, design, etc.) of the books.

The profiles of these author-designers are very different. McCloud and Sousanis are polymaths like, for example, the famous architect Le Corbusier, who, according to Art Historian Catherine de Smedt, "published approximately thirty-five books, which he not only authored but illustrated and laid out, going so far as to choose their format and paper" (2009). Osterwalder et al. chose to set up and work with their own team. They even went as far as founding their own organisation (Strategyzer) to, amongst other activities, design, edit, and publish their books. Similarly to what Burdick et al. recounted about what happened when they shifted "from the linear vertical scroll of word processing software to the spatiality and recto-verso of the codex" of *Digital_Humanties* (2012), it made them work "with a reader in mind". They were "writing to the design".

When designer-authors do choose to work with publishers, they do so under certain conditions. For instance, the Art critics Ernst Gombrich explained how his best-known book, *The Story of*

2 Bauhaus professor Laszlo Moholy-Nagy's considered that "the book can be conceived of in the same sense as the handle of a tool or an ustensil".

Art (1950) was designed to enable the readers “to have the illustration discussed in the text in front of them, without having to turn the page”. This was achieved, as he recounted in his 1971 preface to a new edition, through “weeks of intense collaboration” with the editor-designers of the editing and design team. They made him “write another paragraph here or suggesting another illustration there” in order to balance images and text. The end result for *The Story of Art* is what Design expert Richard Hollis (2015, “Ways of Seeing Books”) describes as “one of the first ‘integrated’ books”. For instance, books like *Digital_Humanties* and the *BMG* work on this same integrated graphic principle of presenting text and images on the same double page spread. The *BMG* and *Unflattening* are essentially thesis made public. Both their authors Osterwalder and Sousanis decided to break free (at least partially) from budget constraints and instead to integrate a constraint to (at least) financially break-even by disseminating their work beyond the academy. In order to do so, they focused, and spend a great deal of effort, on form and intelligibility so that their readers did not need to, and intuitively and effortlessly access it.



2. Misaligned strategies demand more communication

Misaligned strategies, as represented by the PMC, are full of paradoxes (sometimes oxymoronic). Consensual informed decisions need to be made between different stakeholders (who may well have divergent interests). Those are complex issues about which consensus are more efficiently reached when everybody is convinced of two things. Firstly, “the whole is greater than the sum of its parts” and that the throughput of the knowledge design process and the intended output of the knowledge publication make sense. Secondly, the values and purpose of the organisation (effectuation is about what people are able and wish to achieve, versus a

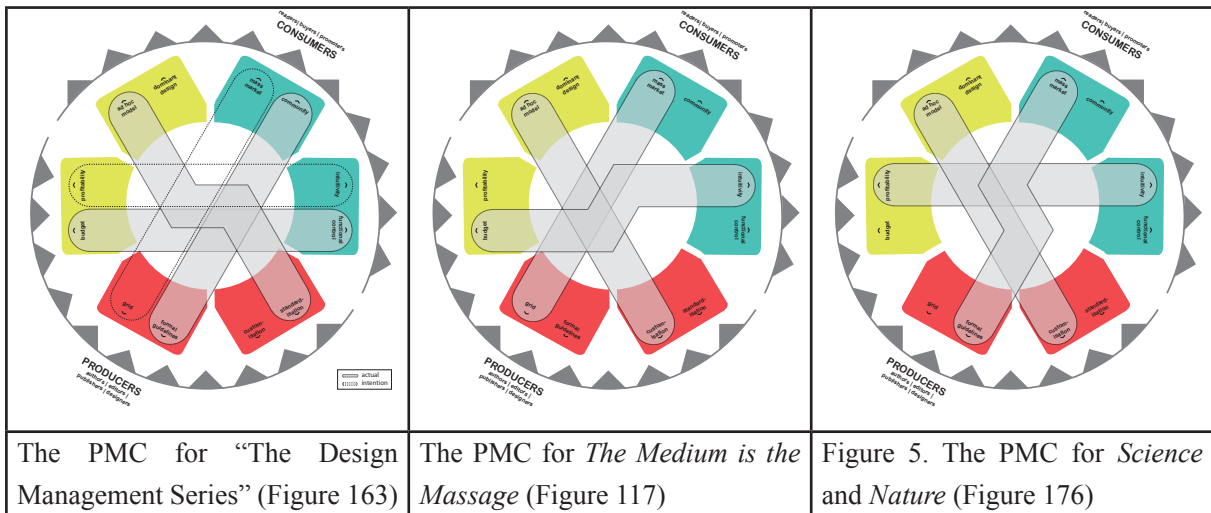
standard—disembodied and interchangeable—corporate mission statement) is compatible with the desired output.

The following four publishing projects each had to handle at least a misaligned dimension, and it required both creativity and team cohesion.

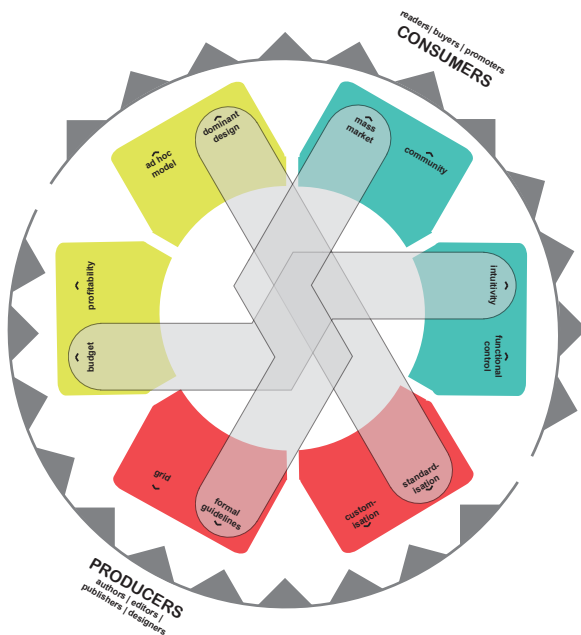
In “The Design Management Series”, there is a misalignment in the book chain (see Figure 163). The authors wished to create an ad hoc model, but they nevertheless complied with an established standard of social online publishing (the formatting imposed by LinkedIn). What ran deeper and made the design of the project less consistent were the discrepancies between the intentions of the two authors (who themselves not always agreed on what they wanted to achieve) and how they chose to work together. For example, they wanted to reach a wide audience of students (Valade-Amland) and business leaders (Borja de Mozota). But they could not afford to produce their publication accordingly and had to make do with a zero-base budget. Another paradox is that the two authors, who are prominent members of the design community, but are not designers themselves, were unable to mobilise design schools, and could not afford to hire design professionals. As a result, even though they could “link the content to a concept”, they were unable “to link the concept to a form”. So, their project could just partially get formalised. A possible book is still in the limbo of a somewhat unfinished design process.

Fiore and Agel fared a little better than Borja de Mozota and Valade-Amland at inception as they managed to convince a publisher to finance *The Medium is the Massage*. Still, they were only granted a limited budget (see Figure 117). This budget constraint turned out to be an incentive to make do. So, they innovated smartly. This makeshift attitude translated in design stints by Fiore who literally put more of himself in the book (photos of parts of his own body, etc.) and Agel devised a low-cost staged agitprop campaign to get media attention, instead of inserting paid-for ads in newspapers and magazines.

Science and *Nature* have managed the apparent paradoxes of publishing thorough science for the non-specialists (see Figure 175) and of setting uncompromising independently-assessed scientific standards while selling advertisements. What they have actually achieved is more akin to de-siloing scientific disciplines by making them accessible—through de-jargoning, rhetoric editing, graphic design and explanatory graphics (which are usually all lacking in specialty academic journals)—to other scientists who are non-specialists of other disciplines than theirs. Doing so, they have managed to aggregate the fragmented audiences of many disciplines into the overall “mass” of a scientific audience which otherwise (partially, occasionally and in very low numbers) only congregate in interdisciplinary teams and organisations. And because they sell in the million, these publications get adequate sales and advertising revenues to afford teams of editorial and design professionals to support the scientists who have met their very high standards of peer review.



The Conversation is a deviant model of knowledge design in two of its three dimensions (see Figure 186). With far lower financial means than *Science* or *Nature*, and a very different business model than theirs (free, open access and with no advertising), it aims to reach a wide audience. Its founders are aware that they do not have, and will never be able to afford, the reach to do so directly. Therefore, its “symbiote” model relies on the circulation of existing media by providing them free and conveniently packaged articles that they can reproduce immediately and at no cost. It mimics and adheres to the rhetorical dominant design of the gold standards of journalism while actually publishing science. Another innovation is that it devotes part of its budget to other forms of value creation (both in terms of content and how it is formalised; i.e. edited and illustrated) and to convince an increasing number and a wider array of partners to finance its venture. This “old folks’ start-up” is experienced enough not to overstretch financially and to remain entrepreneurial enough to gradually seek additional revenues and grow its business.



The PMC for *The Conversation* (Figure 186)

The Cambridge Core programme was too comprehensive to be analysed with a PMC. Still, some insights were gained and are presented thereafter in a less structured manner. In order to foster their cohesiveness, operational issues were discussed at committees. Sense-making was built by the Core team through the prioritising of a desirable compromise (between the rhetoric force of the user story, the resources in terms of budget and development manpower, and the level of urgency of each issue). The Core team also acted as mediators (“a startup in an established organization”) between external clients and internal stakeholders. But Cambridge University Press (CUP) is not a start-up and there was a need to show what was happening and to evangelise the 1,500 staff in the UK and the other 1,400 worldwide. Creating value was prioritised as a matter of maximising the customer experience, even at the detrimental cost of swelling operational expenses. As CUP experienced, merging their two platforms of journals and books into Core resulted in a trade-off. The apparent simplicity of the front end for the end-users was achieved at the cost of a temporarily increased complexity of the back end. The enforcement of the shift from a product-centred approach to a user-centric commitment had a temporary negative financial impact which was endorsed by the top management for the sake of customer satisfaction with the hope that it will pay off in the long run.

3. How robust is the PMC?

The PMC is based on qualitative methods. A major problem with qualitative methods (versus quantitative methods) is that there can not be any statistical evidence of their relevance. So, there is no purely statistical method to know whether the sample of eight cases to which the PMC was applied is a representative sample. Knowledge design is part of what Simon called “the sciences of the artificial”. In this domain, and because of the principle of “bounded rationality”, he favoured the “satisfying” and good enough outcomes of Artificial Intelligence (AI) over the unattainable search for an optimum of the Operational Research (OR). This became a tenet of Design Science Research (DSR) on which the KDT more specifically draws. So, because DSR contributions (i.e. artefacts, methods, models and theories) are bounded by bounded rationality, it is therefore rational to assume that they are rational within these boundaries. So, the PMC as a design model would be relevant if it is good enough at describing relationships and their outcomes within certain boundaries.

What are these relationships and these boundaries? In congruence with the provisions of the ANT, knowledge books should be construed as non-human mediators (they are performative). The purpose of the PMC is to describe their relationships with the three following human mediators: clients, author-designers and editor-designers. The output of the PMC is a knowledge book. The boundaries are the knowledge book itself and the other intermediaries and mediators which are part of its transmedia network (e.g. online courses partly prerecorded and partly tutored, advertising material, posts on social networks, etc.). Another question to assess the

relevance of the PMC is: how are these relationships described? Gregor and Hevner³ describe the typical four-step DSR research process as 1. realising a problem situation; 2. analysing published literature; 3. developing prototype pattern solutions, demonstrating a POC, and testing them; 4. after summative peer and student evaluation, positioning the contribution as a knowledge book and communicating it in an appropriate transmedia network.

4. How operational and understandable is the PMC?

Research publications are difficult to understand for most people, including undergraduate students, professionals and the general public. For example, it took a long time and substantial coordinated efforts to transform a thesis into the publishing success of the *Business Model Generation*. In another case, and despite her extensive experience of publishing, teaching and consulting, Borja de Mozota's endeavour to popularise design management with business leaders has not fully materialised. *Unflattening* is an exceptional case of a thesis and an acclaimed bestselling knowledge book. It is a case of the exception that proves the rule. It is exceptional because Sousanis is a polymath (a dedicated teacher and a gifted comic artist) and because "the form itself embodies the content" (i.e. the topic of his thesis is "the importance of visual thinking in teaching and learning"). This is an instance of PMC misalignment because it bent the traditional academic guidelines for the presentation of a PhD thesis. The author recounted that he was largely exempted of the standard formatting, but still had to comply with sometimes outwordly demands from the office of doctoral studies. These demands looked outwardly in such an extraordinary case, but they are perfectly legitimate in general. After all, the purpose of research works is to be validated by an academic jury ("verification that is based on slow, collective, public performance by [...] 'the community'"). And, in order to be assessed by experienced researchers, a thesis needs to be supported by a substantial amount of material. Unlike the simultaneous endeavour of Sousanis, it is a sequential enterprise of maturation and modelling (representation of something and reduction to the relevant properties) to transform a thesis into a knowledge book. An example of *representation* was given by how McCloud's 6-step theory of the creative process in *Understanding Comics*. He used the same diagram to, first, illustrate the creative process (meant to be read in the implied left-to-right direction) and, second, propose an allegory of the learning process by specifically indicating (with a right-to-left arrow) that it was going against the grain and should be read in the opposite direction. *Reduction* is akin to sculpting a block of material by carving out superfluous matter and chiselling expressive traits. I wish to be considered as a design thinker, but am under no illusion about being a designer, and especially not a graphic designer or a typographer. I neither have the training nor the talent. Thus, the form of this work emulates the stringent formal requirements of Hesam for a thesis, and it can not be a knowledge book. I resorted to diagrammatic reasoning⁴—what designers

3 Gregor, Shirley, et Alan R. Hevner. 2013. "Positioning and Presenting Design Science Research for Maximum Impact". *MIS Quarterly* 37 (2))

4 As Drucker recounted in *Graphesis* (2014), "'Peirce was convinced that reasoning itself was diagrammatic. [...] The diagrams performed the act of reasoning, they did not represent it after the fact but were the means of

call “ambidextrous thinking”—when I was faced with “wicked problems” and when I felt that I could not communicate accurately enough what I wanted to express. These exploratory diagrams are meant for the readers to better understand this work. But I am aware that design work is still needed to transform them into proper explanatory diagrams. In addition, these would-be prototypes of explanatory diagrams should be tested by their intended users in test-and-learn iteration.

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Appendices

Appendix 1.

The presentation of the case of “Business Model Generation” at the doctoral days of the SFSIC



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Mots-clés : édition, visualisation, représentation, design thinking, typographie, livre

Keywords: publishing, visual thinking, representation, design thinking, typography, book

Abstract : This case study shows how the book Business Model Generation sold over 1,000,000 copies worldwide. The aim of the original thesis was to produce and validate knowledge and it got its form by default, whereas form and function were integrated in the book by design. This text addresses the three issues of how design makes communication easier by improving accessibility by adding a layer of physicality and by being less speculative and more grounded.

Résumé :Le livre Business Model Generation s’est vendu à plus d’un million d’exemplaires. Le but de la thèse originale était de produire et de valider de la connaissance ; elle a donc été formalisée par défaut, alors que la forme et la fonction du livre ont été intégrées dans son design. Ce texte traite de trois caractéristiques du design qui facilitent la communication en améliorant l’accessibilité : l’ajout d’une couche de matérialité, sa dimension moins spéculative et son ancrage plus profond.

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A case of book design turned bestseller: Business Model Generation

Introduction

This presentation is a case study to illustrate a wider-encompassing doctoral research on design thinking and publishing. With the emergence of the digital technologies and culture since the end of the 1990s, publishing has been particularly affected and different sectors of this industry have adapted (innovated) in various ways. This is a study of one such example where by default editing of a classical artifact (a thesis) was transformed into a collective design thinking project and became innovative transmedia artifacts (including a book). Over a nine year period, from the inception of the thesis until the book was published, the authors followed a three-step communication process: 1. researching and writing the thesis—production and legitimization of knowledge (information); 2. formatting the ontology into a convenient canvas to teach it to students and use it in workshops with professionals—performance and fine-tune of knowledge transmission (media); 3. rewriting the text and designing the book—rhetorical publishing (communication).

For its author, Osterwalder (2004), “the two main domains that serve as a foundation for this thesis are management theory and information systems.” The thesis was thus situated in two disciplinary fields and based on established knowledge and theories. The thesis was both more and less ambitious than the book. On one hand an “ontology” is wider-encompassing than a “handbook”, and on the other a “proposition” is less assertive than a claim “to defy outmoded business models”. The book was designed for a generation—with its double-meaning of the creation of something and of a group of people of the same age band. This paper is structured in two parts: the first is about how the author wrote the thesis as an artifact for thinking, and the second how the authors and editors published the book as an artifact for action (i.e. focused on the readers’ perception):

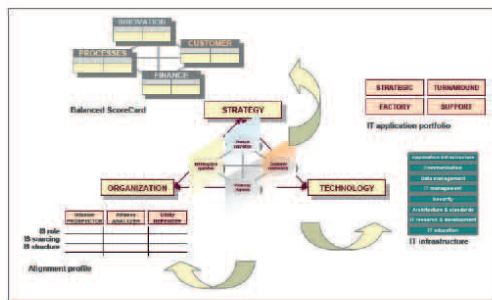
- 1.a comparative analysis of the writing of the thesis and of the generation of the book which was “co-created highly visual”, and thus had to touch on the “visual forms of knowledge production” (Drucker, 2014);
- 2.a user-oriented approach of how readers were encouraged to adopt a transmedia attitude and navigate from a freely available online canvas and supplementary materials (instruction manual, card deck), to the book, paid-for apps and exclusive masterclasses and workshops.

1. How the features of a thesis were morphed into a book through design

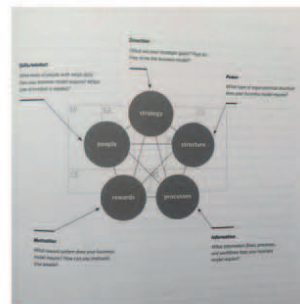
1.1. A semiotic approach—from re-presentation as memory to representation as communication—to deal with complexity

There is indeed a long way, and a rather long period of five years in this case, from an ontology aimed at modeling an algorithmic data-processing of business information to designing a handbook for people to use better management tools and enhance communication around projects and within organizations. The thesis had originally been presented to his peers by the author who applied to become a doctor in business computing. It was then redesigned by a team of authors, editors and designers for a loosely defined audience of “visionaries, game changers, and challengers” to help them “design tomorrow’s enterprises”. The two images presented thereafter are set towards the end of each volume (of both the thesis and the book) and are meant as synthesis or “take away”.

A case of book design turned bestseller: *Business Model Generation*



Thesis Figure 1. Alignment of models with IT (Figure 68: Alignment based on the business model, p. 143)



Book Figure 2. Implementing Business Models in Organizations (p. 271)

Figure 1 in the thesis was composed of four subsystems (“Balanced ScoreCard”, “Alignment Profile”, “IT Application Portfolio”, and “IT infrastructure”) organised around a main system (unnamed) as shown by directional arrows pointing outwards from the center to the periphery. Those systems were drawn at different scales and juxtaposed. There are no visual cues if (or how) they are organised (or interact with each other) to form a model and the overall image is cluttered. These cues might be unnecessary for the intended expert readers who are supposed to possess the implicit knowledge to read this diagram. No such assumption of implicit knowledge was made in the design of figure 2. It is an image of (two-) layered reality with the BM canvas at the background (at this stage of the book the canvas is a familiar feature which has already been featured more than seventy times in previous pages), and the introduction of Jay Galbraith’s Star Model in the foreground.

For Bertin (1967) in his *Semiology of graphics* “graphic representation is an experimental tool to build a collection of comparable images with which a researcher ‘plays’”¹ and, because information is “polyscopic”¹, representation can have three functions: 1. registering information; 2. communicating information; and 3. processing information. Figure 1 is a case of registering information; i.e. the design of an exhaustive “artificial memory” of—possibly complex—figures which thus might not be easily memorable. It is a mere re-presentation.

By contrast, figure 2 embodies both functions of re-presenting and, as well, of communicating and processing information. Communication and information processing are performed through the design of a “simplified” image of a memorable “message”—not by extracting part of the information but by both ordering it qualitatively and by omitting odd data in order to “smoothen the curves”. This second case is similar, in other words, to the “process in which the makers of signs seek to make a representation [which] is never the whole object but only ever its criterial aspects”².

1.2. Visual rhetoric: a leap from system thinking to visual thinking

The thesis was situated in the two disciplines of management theory and information systems which both rely on system thinking. The book was self-described as “a handbook for visionaries” and since “many words link vision with thinking. Insight, foresight, hindsight, and oversight. Visionary and seer.

¹ For Morin (2015), information is “polyscopic” for “it sometimes appears as memory, sometimes as knowledge, sometimes as message, sometimes as program, sometimes as organisational matrix” or “rather as all of that altogether”^{*}.

² Kres & van Leeuwen further elaborate the “process in which the makers of signs seek to make a representation of some object or entity whether physical or semiotic, and in which their interest in the object, at the point of making the representation, is a complex one, arising out of the cultural, social and psychological history of the sign-maker, and focused by the specific context in which the sign-maker produces the sign” in *The Grammar of Visual Design* [1996]—presented by the authors as “a resource for beginning to make inroads into understanding the visual as representation and communication—in a semiotic fashion”.

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The word ‘idea’ derives from the Greek idein: to see” (McKim, 1980) it was thus crafted in visual thinking through a process of “mental imagery” which is frequently described by designers as “seeing with the mind’s eye” (Oxman, 2002).



Figure 3. Page spread caption in the book (p. 124)



Figure 4. Double-page spread photo and text description in the book (p. 146)

Alexander Osterwalder, the author of the thesis and co-author of the book, seemed to have applied what he was recommending others in his book (fig. 3). Himself a business researcher, he has acquired skills to become more of a designer—more “master of heuristics” than “manager of algorithms” (Roger Martin, “The Design of Business”, 2004)—and has changed his focus from the thesis to the book accordingly .

The first and most obvious feature of the book compared to the thesis is its landscape format (fig. 4), versus the standard A4 portrait format. The substantial augmentation from the 168-page thesis to the 280-page book has been mainly graphic (i.e. non-textual). The text-to-illustration ratio of the thesis was 2:1 and became less than 1:1 in the book (fig. 5). Moreover, in the thesis there only are “artificial” diagrams which “do not describe an actual spatial arrangement” (Larkin & Herbert, 1987) and tables, whereas in the book the visual mix includes figurative pictorial elements such as sketches and photos which ground it into the “real” world.

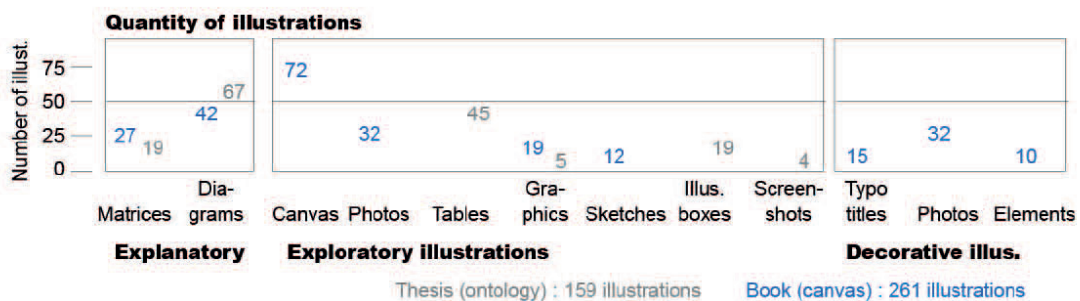


Figure 5. Quantity of illustrationsA

A case of book design turned bestseller: Business Model Generation

A feature of Visual Strategies (Frankel & Depace, 2012) can be drawn from the use of “exploratory graphics [which] invite the viewer to discover information” and “explanatory graphics [which] are used to communicate a point or call attention to patterns and concepts”. There are relatively more explanatory and less exploratory illustrations in the thesis than in the book (fig. 5), the former would thus be speculative or interpretative and the latter more matter-of-fact.

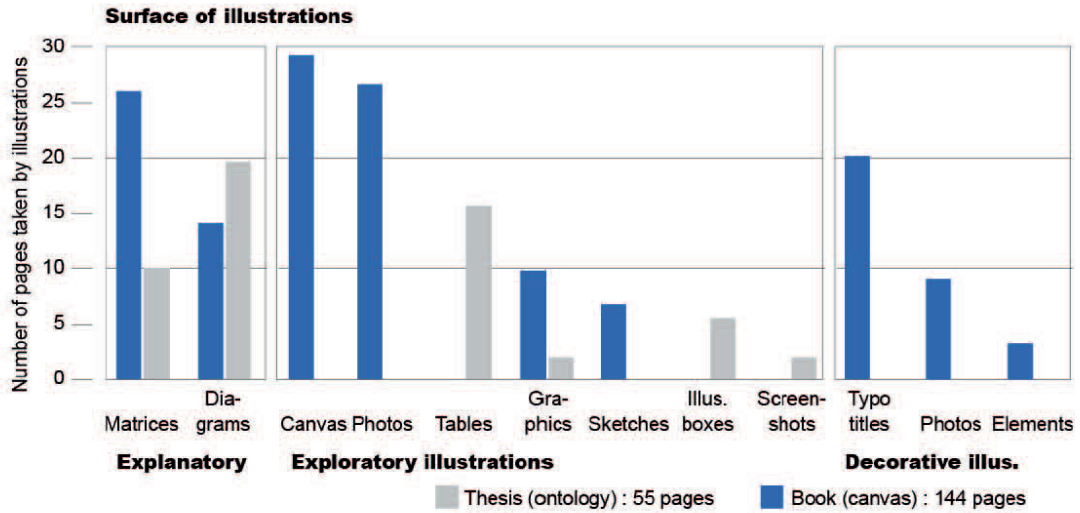


Figure 6. Surface of illustration (in page-equivalent)

In the thesis, the page-space³ allocation was about 1:1 explanatory-exploratory and 1:2 in the book (fig. 6, excluding the decorative illustrations). According to Larkin & Simon in “Why a Diagram is (Sometimes) Worth Ten Thousand Words” (1987) “diagrams automatically support a large number of perceptual inferences, which are extremely easy for humans”.

1.3. A form by default and a designed artifact

The two examples of the cover and of the table of contents hereafter are prominent instances of, on one hand, automated composition with a word processor for the thesis and, on the other, a graphically designed book.

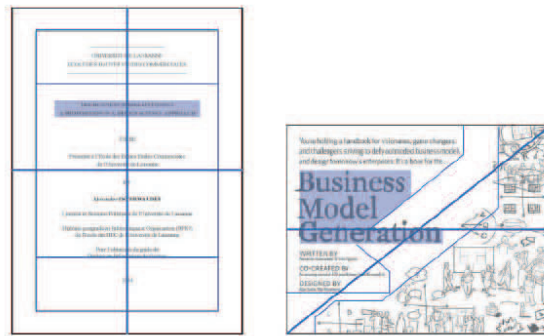


Figure 7. Comparative compositions of the covers of the thesis and of the book

³ The page-space is the surface of pages allocated to an element, for example a graphic, a paragraph, etc.

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The typographical analysis⁴ shows that the format of the thesis is classic and static while it is dynamic and informal for the book (fig. 7). This analysis is based on the three dimensions of layout, images, and type design. First, the composition of the cover page of the thesis is balanced and framed. On the contrary, the layout of the book is “baroque” (Wölflin, 1967) and expresses motion and emotion. Second, there is no image on the cover page of the thesis except for the “image of text” (Souchier, 1998) which is featureless. Conversely a series of hand-drawn sketches covers the surface of the lower right of the book cover which also participate of the sense of spontaneity. Third, the family of font in which the text of the title of the thesis was set in is classic “didonic”⁵ versus greater visual impact and more informal “lineal” sans serif type fonts for the book.

The Tables of Contents (TOC) of the thesis and the book are other examples of the different design approaches of both published artifacts.

1	INTRODUCTION.....	1
1.1	BACKGROUND AND RESEARCH CONTEXT.....	1
1.2	RELEVANCE AND RESEARCH GOALS.....	2
1.3	METHODOLOGY.....	3
1.4	CONTRIBUTIONS OF THIS RESEARCH.....	8
1.5	STRUCTURE OF THIS THESIS.....	9
1.6	ACKNOWLEDGMENTS.....	9
2	ORIGIN, DEFINITION, PLACE AND ROLE OF BUSINESS MODELS IN THE FIRM.....	11
2.1	ORIGIN, EVOLUTION, COMPLEXITY AND UNCERTAINTY.....	11
2.2	WHAT ACTUALLY IS A BUSINESS MODEL.....	14
2.3	THE BUSINESS MODEL'S PLACE IN THE COMPANY.....	16
2.4	USE OF BUSINESS MODELS.....	19
2.5	BUSINESS MODEL ONTOLOGY AND BUSINESS MODEL TOOLS.....	22
3	KNOWLEDGE OF THE PROBLEM DOMAIN.....	23
3.1	BUSINESS MODEL LITERATURE.....	23
3.2	ONTOLOGY.....	29
4	THE BUSINESS MODEL ONTOLOGY.....	42
4.1	INTRODUCING THE ONTOLOGY.....	42
4.2	STRUCTURE.....	48
4.3	COMPONENT INTERFACES.....	58
4.4	TRAILBLAZING THE MANAGEMENT FIELDS.....	79
4.5	PROSPECTIVE ASPECTS.....	93
5	CASE STUDY: MIT.....	103
6	APPLICATION PROTOTYPES: BM2.....	118
6.1	FROM THE ONTOLOGY TO A FORMAL MARKUP LANGUAGE.....	118
6.2	THE BUSINESS MODEL MARKING LANGUAGE (BM2L).....	119
6.3	TRANSFORMING XML DOCUMENTS.....	122
6.4	VISUALIZING A CHANGE STRATEGY WITH SCALABLE VECTOR GRAPHICS (SVG).....	123
6.5	CONSTRUCTING A REPORT PAGE.....	125
6.6	CONCLUSIONS WITH XML.....	126
7	EVALUATION.....	127
7.1	LITERATURE REVIEW.....	129
7.2	IMPROVING OUR BUSINESS MODELS.....	132
7.3	BUSINESS MODEL CASE STUDIES.....	138
7.4	THEIR DEVELOPMENT - WHAT'S NEXT.....	141
8	ONTOLOGY APPLICATIONS AND FUTURE RESEARCH.....	143
8.1	ABSTRACTS.....	143
8.2	BUSINESS MODEL COMPARISONS.....	156
9	CONCLUSION.....	159
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Figure 8. TOC of BMO

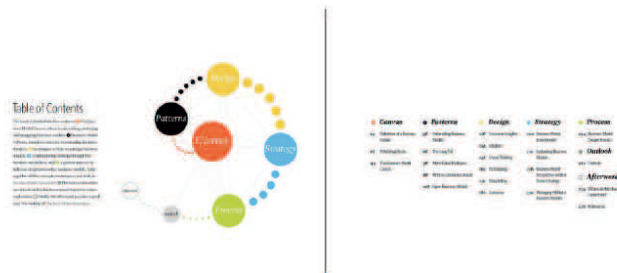


Figure 9. TOC of BMG

On one hand the TOC of the thesis was automatically generated by a word processor (fig. 8) and is an example of “function follows form” (i.e. a classical conception). On the other hand the two-page spread of the TOC in the book (fig. 9) appears to have been designed according to a modernist approach of “form follows function”. It is actually not one TOC but three different forms of it (from left to right): 1. narrative with a step-by-step timeline of embedded bullet points; 2. visually semantic with a spiral form that is meant to convey sense and direction; 3. functional as a navigation tool. This threefold approach of the BMG is similar to what has been advocated by Burdick & Willis (2011) for a generation of digital natives “who are bricoleurs” and “require new ways of thinking and knowing [which] center on an expanded notion of design thinking that includes 1. visual rhetoric; 2. comprehension of situated expression; 3. a user-oriented approach”. In this thesis the format was imposed—or at least “unthought” (Souchier, 2012)—, on the contrary the book style was selfconsciously designed in terms of both its form and function and also of the relationships between them.

⁴ In the French graphic tradition, typography encompasses the two dimensions of typesetting and type design which are more distinct in the english speaking world of books and publishing.

⁵ “Didot” was the name of a font family given by typographer Thibaudeau in his 1920s classification and “didonic” was the name in the 1950s’ Vox-A Typi. This was a tribute to the french and italian printers Didot and Bodoni who mastered the design and production of this kind of rational fonts at the classic period of the late eighteenth century. The main features of these fonts are their verticality and symmetry (especially for the capitals) and also their contrasting inner weight and their linear serif type. They bear a classical quality.

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2. Understanding with mind and body, making sense with senses

How did its intended audience react to the BM canvas?

In the thesis, the author was already concerned about the reception of his work beyond his academic peers and had interviewed a dozen managers and consultants for 60 to 90 minutes each in order to assess the BM “ontology’s fidelity with real world phenomena” and they were “all quite receptive to the topic”. Three main uses were anticipated by business practitioners: understanding quicker with a “visualization tool”, improving “communication” and “discussion quality”.

The results of a 2015 survey of 1,500 respondents who used the canvas (conducted by Strategyzer, the consultancy founded by the authors) confirmed the three anticipated uses. It showed that readers used it because “it is a visual tool”, “it facilitates group discussion” and “it has a practical simple user interface” for around 50% each, and “it is intuitive” for 46%; minor reasons with 10-15% each were that “it was recommended or has good reviews” and “it is affordable” (US\$ 34.95). The results of this qualitative survey were globally positive and the circulation figures of more than a million copies of the book sold were an impressive quantitative achievement that confirmed this qualitative feedback.

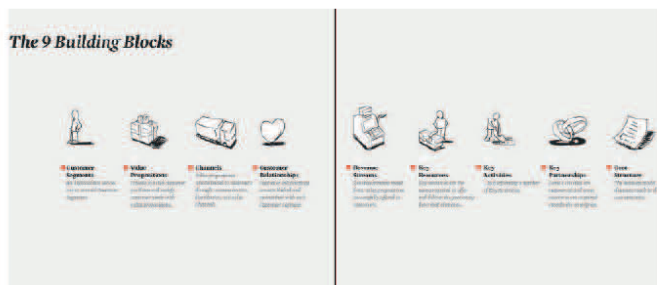
What were the main reasons for this publishing success?

2.1. A user-oriented approach: a shift from content-first to reader-first

In the thesis, the BM is presented page 43 after the research and the context were described. In the more circular (spiral-like) way of the book (fig. 9), it starts with the BM canvas and revolves around its different aspects all along.

Value	Building Block of Business Model	Description
Product	Value Proposition	A Value Proposition is an overall view of a company's bundle of products and services that are of value to the customer.
	Target Customer	The Target Customer is a segment of customers a company wants to offer value to.
Customer Interface	Distribution Channel	A Distribution Channel is a means of getting in touch with the customer.
	Relationship	The Relationship describes the kind of link a company establishes between itself and the customer.
Infrastructure Management	Value Configuration	The Value Configuration describes the arrangement of activities and resources that are necessary to create value for the customer.
	Capability	A capability is the ability to execute a repeatable pattern of actions that is necessary in order to create value for the customer.
Financial Aspects	Partnership	A Partnership is a voluntarily sustained cooperative agreement between two or more companies in order to create value for the customer.
	Cost Structure	The Cost Structure is the representation in money of all the assets employed in the business model.
	Revenue Model	The Revenue Model describes the way a company makes money through a variety of revenue flows.

Thesis Figure 10. A table of the nine building blocks in the thesis (Table 16: The nine business model building blocks, p. 43)



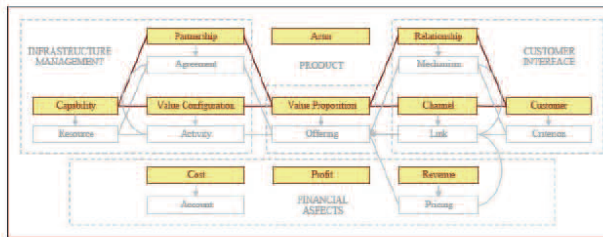
Book Figure 11. A depiction of the nine building blocks in the book (pp. 16-17)

The description of the BM as a theoretical system was carried out in the thesis with its nine blocks grouped into four pillars. Tables (such as fig. 10) display definitions of each term starting by [...] “is” or “describes”. This process provides a sense of order and stability, of solid reference.

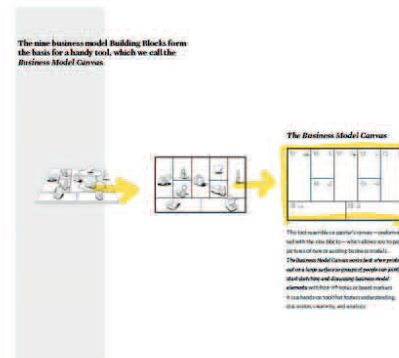
In the book, the nine elements are introduced together on the same two-page spread by order of appearance as a frieze-like narrative (fig. 11). This is already a rhetoric of these elements which are self-justified by their place in the narrative and thus do not need to be shown to belong to a higher order of things such as the thesis ontology organised by “pillars”.

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2.2. A shift from a two-dimensional diagrammatic thought to 3D game-board thinking



Thesis Figure 12. The Business Model diagram (Figure 21)



Book Figure 13. The Business Model Canvas (p. 42)

Figure 12 shows a pre-designed “linear” and pre-ordained “non-linear” diagram combining both a flowchart and a network representation⁶. It is a complex representation of the inner workings of the author’s mind which are difficult to understand at first glance by the readers. It is an ambiguous structure—at the same time narrative and conceptual—of something in between a process and a system, alternately, where boxes represent participants, connecting lines represent the process that relate them, and arrows represent what participants are doing to, or for, each other.

Contrarily to the sole frontal representation of the mind’s eye of the author in the thesis, figure 13 in the book shows the same representation of a BM from three different perspectives (similarly to fig. 9). The same object is apprehended by the reader first as a perspective of a 3D set of building blocks, then as a gameboard seen from above, and finally as a canvas metaphorically described in its caption as a tool which “resembles a painter’s canvas [...] which allows you to paint pictures of new or existing business models”. As for figure 9, this succession of images in figure 13 is a message and, in addition to communicating, it is rhetorically encouraging the readers’ engagement, and is inviting them to act (as formulated in the caption, e.g. “allows you to”, “people can”, “tool that fosters”). In this narrative visual proposition, the first lefthand box is an actor, the one in the middle can be read alternately as a goal and as an actor, and the right-hand box is the ultimate goal. The whole process is unambiguously transactional and, as Barthes (1964) wrote in “Rhétorique de l’image”: “the caption helps me to choose the right level of perception; it allows me to adjust not only to my vision but also my intellection”⁷.

2.3. Comprehension of situated expression: the book augmented the thesis

As in any thesis, the researcher needed to demonstrate his academic peers-to-be that he had understood the topic he was addressing, whereas for this book to be a success the authors (the now-doctor Osterwalder and his ex-director Pigneur plus a team of designers) also needed to convince-digital natives amongst others of its practical value and ease of use in real-life environments. In other words, the book augmented the thesis with a layer of “physicality”—from comprehending, “to seize with the mind”⁷ to apprehending “to seize, either physically or mentally”⁸.

⁶ For Kress and van Leeuwen (1996) this “linear’ (flowchart) and ‘non-linear’ (network) representation [...] provide the reader with many choices, many paths to follow, but on the other hand tend to obscure the fact that the range of choices is ultimately pre-designed and limited” for “the taxonomy [or flowchart] is modeled on a static, hierarchical organization in which everything has its pre-ordained place in a grand scheme” and “the flowchart is modeled on a form of [...] organization which is a vast labyrinth [...] in which it is difficult, if not impossible, to form a coherent view of the whole”.

⁷ Online Etymology Dictionary.

⁸ Merriam-Webster dictionary.

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This apprehension can be described in Piagetian terms as the three successive stages of human development through childhood: a body-centered stage, a visual stage and, beginning at age eleven or twelve, a symbolic stage. According to Faste (1994), efficient didactic methods should allow a circulation between these stages because “when problem solving becomes blocked at the symbolic level, humans must revert to the right brained abilities associated with these previous stages.”

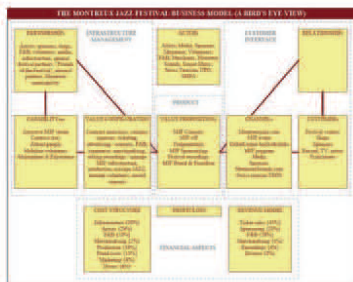


Figure 14. The Montreux Jazz Festival Business Model (Figure 52: A bird's eye view of the Montreux Jazz Festival's business model)



Figure 15. An example of applied Business Model to a multi-sided platform (pp. 94-95)

Figure 14 is a comprehensible although difficult to read diagram which is fully, and only, symbolic. It is as complex a representation as figure 12; in other words this “bird’s eye view” is represented as seen through the author’s mind’s eye. The problem is that what is seen through a double perspective (literally the bird’s and the author’s) has been flattened into a two-dimensional image: the representation does not represent these layers of interpretation. It leaves the reader with the problem of his/her own interpretation of reality through his/her own eyes; is what is shown real and is it the same “real” for the reader and the author?

This is a design paradox that the complex composition of figure 15 helps to deliver a message in a simpler form. At first sight, this double spread composition is augmented reality in that it consists of three layers, each one of them adding information to the others. From the foreground to the background, the first layer is the photo of the smartphone; the second are the photos of the highlighters and the highlighted sketch which appear to be part of the book itself because they are under the white line framing the two pages and also because the white lines linking the captions with the images continue over them; and the third is the image of the text which is printed in the book. Thus the reader can read the text and the images, and move from one to the others, at will. He/she can alternately resort to his “right brain” or “left brain”⁹ as ambidextrous designers do when they created this image. The reader, as Barthes wrote, is enabled to chose his/her “right level of perception” between images and captions.

A closer observation though shows that there is a paradox in terms of perspective for the third layer which is simultaneously positioned in the background and superimposed over the second layer by the white lines connecting captions with images; it is similar to the optical illusion of the “impossible” Penrose triangle which artist M. C. Escher contributed to popularize from its inception in the 1950s.

⁹ *Advances in cognitive sciences have shown that there is actually no clear distinction between right and left brain, one main reason being brain plasticity. Thus we propose this concept as a metaphor in order to simplify our communication.*

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Conclusion

This case study shows how knowledge design (Schnapp, 2014), applied to the thesis Business Model Ontology, in its classical conception of “function follows form”, is a method for registering information with tools such as explanatory graphics. It also shows how design can successfully be applied to communication as in the example of the book Business Model Generation with a more modernist approach of “form follows function”. A more extensive analysis would show the other aspects of the shifts from the virtual reality of the thesis to the augmented reality of the book. For example, in the book there are numerous examples of augmented reality by adding layers of visual information (versus juxtaposition of information in the thesis) and other instances of hyperrealist photographic composition (vs. abstract diagram).

As Saussure (1916) recommended, we have proceeded to a “synchronic”¹⁰ comparative analysis between the thesis and the book. It should also be borne in mind that the process—the successive writing, editing-and-designing, and publishing of the two artifacts—were transformational and should be apprehended in a “diachronic perspective”. In other words, there was a shift from making sense of information in the thesis (sense with its dual meaning of “meaning” and “direction”) to communicating sense through senses in the book (“senses” as a plurality of meanings, and also as the vision and haptic “senses”). This aspect from comprehending to apprehending and from content-first to reader-first should also be developed. That is an approach more akin to user-centric design thinking influenced by the Peircean semiotics of the interpretant than to book publishing as creating content in the sense of an industry of prototypes in which many fail and the few happy successes make up for them.

¹⁰ “Are facts belonging to the diachronic series at least of the same order as those of the synchronic series? In no way, because we have established that changes are happening outside of all intention. On the contrary the fact of synchrony is always significant”* (de Saussure, *ibid.*).

Appendix 2. Design Management

1. Entretien de Brigitte Borja de Mozota, mardi 23 avril 2019

Par Jean-Louis Soubret en vidéoconférence.

Merci beaucoup d'accepter cet entretien suite à votre série publiée sur LinkedIn.

Jean-Louis, une thèse?

Oui

C'est super

C'est beaucoup de bonheur. Et en fait on a pas mal de contacts en commun, notamment je travaille avec Estelle Berger de Strate

Oui

Qui m'a dit que vous vous connaissez bien. Je pense qu'on évolue dans des milieux qui ne sont pas très loins. Je vous avais aussi rencontré à Cumulus. Je ne sais pas si vous vous souvenez, on s'était retrouvé dans le métro, après, et j'en ai profité pour échanger nos mails. Pour la thèse, voulez-vous que je vous dise de quoi il s'agit ?

Je suis gourmande de ça.

En 180 secondes, comme dirait l'autre, pour présenter sa thèse. Il s'agit d'une thèse qui porte sur deux choses, que je pratique par ailleurs, qui sont le design thinking et l'édition. Le design thinking, je le pratique, notamment avec Estelle par exemple, auprès de Schoolab qui est un studio d'innovation parisien qui se développe assez rapidement en ce moment. Ça fait une dizaine d'années, notamment sur des programmes étudiants. Il y a un programme phare, un programme historique dans lequel on a des étudiants de Strate collège de l'Essec et de Centrale Paris. On les fait travailler sur des projets d'innovation. Ça c'est le côté design thinking, et puis pour Schoolab, je fais aussi des missions, soit en formation soit en ateliers auprès d'entreprises et qui ont trait au design thinking et puis aussi pas mal sur les business models, ce genre de choses.

Design thinking, vu comment ?

J'y ai consacré un chapitre entier mais je n'arrive pas à le définir. En gros, c'est la version californienne du design thinking à la Ideo, Tim Brown, pour faire simple.

Donc, c'est le processus, le prototype, le pluridisciplinaire et le user centred

Tout à fait. User centric, etc.

Et pluridisciplinaire, parties prenantes, ou pas ?

Pluridisciplinaire, parties prenantes aussi, même si c'est l'une des critiques, ce n'est pas au coeur du modèle. Oui, on le fait

Donc voilà, d'accord.

On partage avec Strate, pour le coup, un gros focus sur l'observation et l'idéation dans les premières phases du process.

C'est du design, on est d'accord !

Oui on est bien d'accord, avec la petite touche business quand même de Tim Brown d'Ideo qui a su transformer le design en un bon business. Un business qui fonctionne bien. Mais ce n'est pas du design management, on est bien d'accord

Ça, je ne sais pas, je veux dire par là c'est quand même... Ok donc ça c'est le design thinking comme vous le voyez. Moi, j'ai simplement besoin qu'on me donne la définition derrière.

Bien sur !

Donc ça, vous le pratiquez en tant que consultant. Et donc, l'édition ? C'est passionnant.

Qu'est ce que ça donne en matière d'édition ?

L'édition, je la pratique en tant que professionnel depuis une vingtaine d'années. À l'origine, j'ai travaillé pour des groupes. Vivendi qui est devenu Hachette, plutôt dans les maisons d'édition qui s'occupent de sciences, dures et molles, plutôt à destination soit des professionnels du côté de la médecine ou du côté par exemple des juristes, soit des scientifiques du côté des sciences humaines et du côté des sciences plus dures. J'ai également monté ma maison d'édition, ce qui m'a donné l'opportunité, le temps d'enseigner et de découvrir le design thinking, il y a une dizaine d'années et que j'ai cédée depuis. C'est une maison d'édition scientifique de revues en sciences humaines et sociales. Je l'avais montée, à l'époque, avec le soutien d'un partenaire : Cambridge University Press. Les Presses de l'université de Cambridge.

C'est un truc que vous faisiez en anglais, alors ?

Non, en fait les Presses sous-traitaient leur plateforme numérique

Alors, question de recherche ?

Oui, venons-en à la question de recherche...

... c'est une thèse en...

En sciences de l'information et de la communication (SIC).

71e section

C'est ça, mais en fait elle est un peu à cheval parce que j'ai deux directeurs de thèse. Ghislaine Chartron est ma directrice de thèse au Cnam. Elle est et en 71e section. Mais je vais l'écrire en anglais parce que je ne voulais que la thèse soit franco-française et mon co-directeur de thèse est le directeur du Center for publishing qui traite d'édition à Oxford Brookes, une université britannique. Il est plutôt en publishing

studies. Mais comme les publishing studies n'existent pas en France, puisque c'est une discipline à objet, en fait ma thèse est entre publishing studies et SIC.

Donc je comprends pourquoi je n'ai pas vu votre thèse dans le fichier des thèses en design que je suis en train de constituer. C'est aussi pour ça que je vous pose la question.

Je ne suis pas en design.

Si, vous l'êtes ! On va quand même être obligés de réfléchir. Je prends la métaphore du textile en ce moment et je parle de maillage. C'est la construction de chaîne et trame. Je pense que sinon on ne va pas y arriver si on dit que les sciences du design c'est une autre section du CNU, à part, machin, etc., ça ne va pas marcher. Je ne sais pas ce que vous en pensez. Mais si on pense chaîne et trame et la construction d'un tissu, on va peut-être y arriver. C'est-à-dire, en quoi les sciences du design apportent quelque chose aux autres sciences et les autres sciences apportent quelque chose aux sciences du design ?

Je suis bien d'accord avec vous et j'ai quand même à prendre en compte un problème. Ce n'est pas vraiment un problème, c'est un objectif ou une question qui est : dans quelle discipline je m'inscris ? Sur le fond, j'utilise une approche différente et qui revient exactement à la même que la vôtre. J'utilise la notion de complexité de Morin. Dans la notion de complexité, il explique que complexus c'est ce que vous dites exactement. C'est à dire que c'est le tissu. C'est également, je renvoie aussi à la notion de Bruno Latour avec la composition et le tissu, et c'est ce que ce que vous êtes en train d'évoquer. À la base, c'est comme ça que j'essaie de construire un modèle que je vais proposer.

D'accord !

Je pourrais vous l'envoyer, le modèle que je propose.

Si vous avez déjà fait un petit pitch avec vos références, ça m'intéresse.

En quoi je puis aider pour la thèse ?

Et puis après on parlera de ce que je vais faire avec Lille l'année prochaine où il y a une design capitale, en 2020. Il se trouve que j'ai donné à l'université de Lille toutes mes archives. Pour rendre tangibles les sciences du design en France. Parce qu'en fait le seul endroit où c'était tangible était dans mon bureau. Parce qu'en France, on connaît le problème Français du CNU, de nos silos, et machins, etc.

En quoi je peux être utile ? La question de recherche est-elle dans le maillage ou alors...

La question de recherche, elle était double. Elle a un peu évolué, mais à l'origine elle était dialogique. C'est à dire qu'elle était dans « comment est ce que l'on publie le design thinking ? » d'un côté, et de l'autre « est-ce que le design thinking peut avoir une influence sur l'édition ? ». Avec deux sous-questions du côté de « comment le design thinking peut-il avoir une influence sur l'édition ? » une idée qui était que, historiquement, l'édition est une industrie d'offres, que le design thinking est une théorie ou une idéologie qui met la demande en priorité. Donc est ce qu'on peut, en quelque sorte, hybrider ou inverser la tendance dans l'édition ? Et puis, du côté de « peut-on publier des livres en design thinking ?

» – j’ai été très influencé par deux exemples que vous connaissez probablement. Dans un cas le Business Model Generation de Pigneur et Osterwalder, qui pour moi est un excellent exemple de ce qui peut être fait en publiant avec des méthodologies projet design thinking, et le deuxième exemple qui s’appelle This Is Service Design Thinking que vous connaissez aussi probablement et qui a été un gros succès qui a, d’une certaine manière...

Service Design. Lequel ? This Is Service Design Thinking et puis il a fait This Is Service Design Doing.

Il a commencé par le Thinking, puis après il a fait le Doing

C’est génial votre truc, c’est bien. Vous êtes à fond dans le maillage.

C’est pour ça que je me sens mal à l’aise avec la CNU 71e section, mais il faut bien l’inscrire quelque part, cette thèse.

C’est le sujet que je voudrais faire émerger. J’appelle ça de la constitution parce que j’ai je n’ai que des étudiants doctorants malheureux. Il va falloir faire émerger cette souffrance. Parce que, quand ils sont obligés de s’inscrire en sciences de l’ingénieur, ils se transforment, ils deviennent meilleurs que les ingénieurs ; ils font une thèse dans la santé il faut qu’ils réinventent la médecine. Enfin etc. Ça s’appelle la connerie française. C’est un vrai drame personnel parce qu’on ne peut pas être heureux si on fait une thèse pour faire plaisir à son jury et qu’en plus on ne sait pas comment constituer le jury. J’ai eu trois thésardes récemment, pardonnez moi du coup je partage tout de suite ça, je les ai vues vendredi dernier et ça a été un choc. Trois thésardes, dont deux en fin de thèse, et qui se disent « mais comment je vais faire pour constituer mon jury ? ». Et là, tout d’un coup au bout de trois ans où elles ont été tout à fait gentilles et ont adopté, quelque part, le langage dominant du laboratoire où elles sont, elles disent « comment je vais faire ? » Heureusement, vous êtes sauvé par l’anglais, vous n’allez pas avoir ce souci.

C’était un peu ma stratégie. J’ai également, dans la constitution, beaucoup de chance parce que je suis éditeur scientifique depuis un moment. Je connais bien le domaine des SIC puisque je publiais une revue en SIC. Pour vous répondre très concrètement, j’ai aussi eu la chance d’assister à un congrès au Québec et d’être lié à l’organisation de ce congrès, et j’ai demandé à une professeure de L’Université Laval au Québec, que vous connaissez peut-être, qui est inscrite en design de faire partie de mon jury. Elle s’appelle Renée Bourassa, vous êtes peut-être vues. Elle est assez ouverte, son champ d’étude c’est notamment l’édition. Donc ça colle parfaitement à ce que je fais. L’autre chance que j’ai, c’est que, comme je connais bien la revue Communication & Langages que je publie depuis plus de vingt ans, j’ai demandé Emmanuel Souchier, qui fait autorité dans le champ des SIC, de bien vouloir participer à mon jury, ce qu’il a accepté. C’est un ami. Donc j’essaie d’avoir un jury, disons, équilibré et multidimensionnel qui me permet d’aborder toutes les facettes de ce que j’ai envie d’aborder. Vous avez raison ça peut être une vraie souffrance.

[coupure] sans taxi et on a commencé à descendre la montagne et moi j’avais des talons ce jour là. Au bout de trois pas, je me suis dit « ça va pas le faire, je vais remonter, je vais chercher la route. Parce que le petit chemin dans la nuit, là, c’est bon pour les petits jeunes

mais c'est pas bon pour moi. En remontant, Steinar était là. Il m'a dit « prends mon bras, si on se casse la gueule on se casse la gueule tous les deux ». On a descendu la montagne. En descendant la montagne, on a discuté, on a dit « ce n'est pas possible, ce design thinking on en a ras-le-bol, il n'y a jamais de design management et puis les gens font du design thinking mais ils ne savent pas ce que c'est que le design, ils prennent des machins, etc. ». On a descendu la montagne et puis, à la fin, on a dit « il faut qu'on écrive un truc ensemble ». C'est parti d'une gentille petite promenade. Steinar écrit beaucoup mieux que moi en anglais, j'ai un style épouvantable, une vraie mitraille et, comme me disent mes enfants « ton bouquin quand t'écris 10 pages n'importe qui en fait un bouquin 100 pages ». Je connais mes limites. Steinar est plus consultant. Il rédige des rapports pour la commission européenne. Lui, l'édition, il est meilleur que moi. C'est plus lui qui a écrit et moi qui ai donné des modèles, ça s'est fait comme ça. On a commencé une conversation et l'idée c'était de faire un petit guide-manifeste, au départ. On a contacté un certain nombre d'experts, bien entendu un certain nombre d'éditeurs anglais ou anglophone et on n'a eu vraiment aucun succès, mais alors vraiment rien en retour. Après tout ça, Steinar me dit « qu'est-ce qu'on fait ? ». J'ai dit « on a un truc, pourquoi est-ce qu'on ne mettrait pas ça sur LinkedIn ? Puis on voit ce qui se passe ». Ça s'est très bien passé. C'est plus Steinar qui a géré la communication de tout ça et donc ce serait Steinar qu'il faudrait interviewer.

Moi, franchement, je suis expert dans le maillage entre la recherche en design – parce que la recherche en design, Steinar c'est pas son truc, la recherche en design management encore plus – par contre, il le pratique, il est dans le faire et il est un petit peu dans la difficulté, comme d'habitude on fait du design thinking sans design management, sans connaître le design et sans connaître le leadership en design, etc. Donc tout ce qu'on a raconté dans le manifeste...

Le manque de fonds...

Il y a deux aspects. À la limite on aimerait bien transformer les textes en bouquin. En plus c'est moi qui demande ça et c'est très marrant que je vous rencontre aujourd'hui, mais rien n'est un hasard. Steinar, tant qu'on n'a pas un éditeur qui nous fait un budget, on n'y va pas. Je me suis posé la question de publier le design. Sur LinkedIn, on va mettre des mots, des machins. Mais c'est pas ça qu'il faut faire, il faut travailler avec un designer sur « designer le design ». Moi, ça fait plusieurs années que je dis qu'il faut qu'on travaille avec les gens de l'édition. Je m'étais même rapproché du Laboratoire de recherche sur l'édition qui existe à Paris. J'avais été deux ou trois fois parler de mon problème mais je n'ai pas beaucoup de succès. J'en ai parlé en disant aux gens « quand est ce que vous allez m'aider à designer le design ? ». Parce que les bouquins qui sont écrits sur le design, blablabla, et parce qu'on se promène dans la rue et puis les gens ne savent toujours pas ce que designer veut dire. On n'a pas bien fait notre métier de communication du truc, et donc voilà où on en est Steinar et moi. On aimerait bien transformer le truc mais on voudrait un budget de design.

C'est parfaitement clair. C'est assez cohérent avec ce que j'ai en tête aussi sur la situation actuelle du design. À part quelques exemples réussis, il n'y a quand même pas grand chose sur « designer le design » en édition, et notamment très peu en France.

Il n'y a rien. Je reprends le bouquin de Potter [What is a Designer?: Things, Places, Messages] que je relisais ce week-end. Ça m'a fait mal. Je suis tombé sur La matérialité à l'ère digitale, je ne sais pas si vous les voyez, mais ils sont quand même assez semblables. Ça m'a fait marrer, parce que je les ai trouvés et l'épaisseur c'est la même. Je me suis dit « c'est génial ce truc », parce que c'est tout ce dont je ne veux pas. Je peux vous faire une photo des deux.

Avec plaisir

J'ai trouvé que l'épaisseur, le truc, et puis moi dans ma tête je suis en train de faire le rapprochement entre les deux. Je me suis dit, mais comment ? Le laboratoire sur l'édition du côté de Maubert-Mutualité, ils avaient une espèce de du fablab sur l'édition. Vous avez déjà été voir ces gens-la ?

Oui, en fait c'est plus un incubateur qu'autre chose, le labo de l'édition.

J'ai vu des gens qui sont des startupers de l'édition. Ils vont me pondre quelque chose. Ils étaient tous forcément dans le côté digital et machin, le numérique et le truc. Je voulais travailler sur, j'avais des délires à l'époque, un des délires que j'ai toujours, des formules hybrides, entre une appli et un bouquin, les trucs ce qu'on ne pouvait pas faire dans le bouquin, on les mets sur l'appli... On était était assez vite sur des trucs qui étaient très complexe et je m'arrêtais. Le design, ça s'appelle Dieter Rams « il faut d'abord être utile et d'abord faire simple », donc votre truc avec une telle forme très complexe, je n'en veux pas. Voilà, je voulais du bon design, c'est aussi simple que ça. Mais ça nécessite un petit budget. Nous, on a fait ce qu'on a pu. Ni Steinar ni moi ne sommes designer.

On voit très clairement dans les exemples que je citais qu'il ya vraiment un temps de maturation, un temps de design, qui est assez long pour arriver à faire la jonction entre le projet initial et le projet final, comme dans tout projet design.

Oui, et puis il ya quelque part des compétences de designer. Quand on limite la compétence du designer au design graphique, on n'a pas raisonné en terme d'objet, on résonne uniquement sur la surface.

Je suis assez frappé par le fait qu'on voit de bons bouquins, j'en ai pris deux exemples, mais je n'ai pas trouvé la la bible du design thinking par exemple ou la bible du design management. Pour moi, le Business Model Generation est la bible du business model, le This Is Service Design Thinking est la bible du service design. Il n'y a pas, paradoxalement, enfin pas à ma connaissance en tout cas, la bible désignée du design thinking, la bible désignée du design management. Je me dis que c'est quand même assez bizarre que ces disciplines, j'avais déjà remarqué ça pour les SIC qui est une discipline de communication et c'est probablement une des disciplines qui a le plus de mal avec la communication, du mal à communiquer vis-à-vis de l'extérieur.

Je vais être très gentille vis-vis de la 71e section. Je n'aurais jamais eu de job si la 71e section ne m'avait pas dit « on t'aime bien comme prof, une thèse en design c'est très bien, tu vas prendre tout ce que tu as publié et au lieu du mot "design", tu vas mettre

“communication”, et tu viens chez nous ». J’ai fait ma thèse en 1985, j’ai été nommé en 1990 en maître de conférences en 71e section. Les collègues ont été sympas. Ils me voulaient comme prof, il ne me voulaient pas pour mon design. Donc je me suis prostitué une première fois. C’est quand même ce qu’on comprend du design, c’est à dire que, côté communication, on comprend l’objet designé, on ne comprend pas la science.

Ça fait partie de projets qui me sembleraient être intéressant et qui, pour une raison qui m’échappe, n’ont pas aboutis.

On a un exemple, Béatrice Gisclard, que j’ai poussée à la thèse, qui a aidé à créer l’Alliance française du design, qui était designer, plutôt éco-conception, designer produit et qui est en train de terminer sa thèse et qui est en train de se prostituer. Elle travaillait sur le design thinking, ce que j’appelle du bon design thinking, c’est-à-dire qu’on part de l’humain et puis après on tire le fil. Elle travaille sur la protection des populations face aux inondations dans le Sud de la France et elle a dû soutenir sa thèse en géographie. Quand on en est à ce niveau de connerie, à la limite le sujet de l’édition paraît anecdotique. On est vraiment dans une logique du parcage, c’est à dire que les autres sciences refusent de donner un espace à la science du design.

C’était le cas pour l’info-comm, c’est peut-être pour ça qu’ils sont plus accueillants.

Oui, mais maintenant, et c’est ma bataille pour l’année prochaine à Lille, on est suffisamment nombreux, de frustrés du CNU, pour peut-être créer une section CNU. Mais je pense que les temps ont changé et qu’on n’en a rien à foutre d’une section CNU. C’est le XXIe siècle et il faut qu’on avance et, que ça, c’est des batailles du passé. Par contre, dire qu’on est là me paraît important. Il y a un espace de la science du design dans toutes les sciences, et puis il y a un espace où on travaille sur la science du design. Ça s’appelle un tissu. C’est comme ça que je vois les choix. C’est-à-dire que, pardonnez-moi, mais vous n’avez vraiment aucune compétence en sciences du design. Vous êtes compétent sur un maillage. Vous n’avez pas lu tous les numéros de Design Studies, du Design Journal. Ni vous ni moi ne sommes compétent en sciences du design. Nous sommes compétents dans le maillage, moi dans le maillage entre sciences de gestion et sciences du design, et vous entre sciences de la communication et sciences du design. Il va falloir le dire quand on soutient une thèse, ça me paraît très important de dire que le design thinking est une partie de la science du design.

Tout à fait, je n’ai pas de souci avec ça. Est-ce que je peux continuer l’entretien sur la trame que je m’étais un peu fixée ? Si vous voulez bien, je contacterai votre co-auteur pour avoir son son de cloche aussi .

Je vais le prévenir.

Ma première question, c’est ce pourquoi vous avez fait ça. Je pense que vous m’avez donné beaucoup d’explications sur l’anecdote et le pourquoi. On retrouve ce genre d’anecdotes, de faits fondateurs, dans beaucoup de livres qui m’ont inspirés. Il faut qu’il y ait un déclic, un problème... « Pourquoi n’avez-vous

pas publié dans une revue ? » et une question parallèle que je ce couple avec « pour qui publiez-vous ? » Vous l'avez un petit peu abordée.

Pas dans une revue. On n'y a pas pensé parce qu'on voulait un livre. Quand je publie dans une revue c'est 20 pages ; on était dans un truc de 100 pages. Après, troisième question, c'était quoi ?

La question corolaire, c'était « pour qui ? ». Quel public avez-vous en tête ? Quel lectorat ?

C'était plutôt la tribu du design, les tribus du design parce que c'est sur tous les groupes. Steinar a mis ça sur design thinking, design management, tous les groupes design et puis, de l'autre côté, il a mis ça sur des groupes business parce qu'il est consultant business en stratégie. Donc, un public très large. Il n'y avait pas de cible précise si ce n'est tous ceux qui tournent autour de ce fameux design thinking.

Plutôt du côté des praticiens que des chercheurs.

Ah oui, absolument. Vous avez vu l'article que j'ai publié dans Sciences du design récemment, « Quarante ans de recherche en design management ». J'ai écrit ça, ça s'appelle une recherche. Là, ça s'appelle une conversation, avec Steinar, dans laquelle j'ai mis de la recherche.

Ça me semblait, avec un public différent, un peu hybride. Forcément des choses se retrouvent puisque vous parlez de la même chose entre votre article au format académique et puis cette série qui ressemblerait à un livre.

Ce qui se retrouve, c'est vrai, je les avais en tête [interruption] on se donne encore jusqu'à 11 heures, ça va pour vous ?

Très bien.

[...] j'avais forcément en tête, et je crois qu'il faut que vous en parliez très fort, c'est qu'entre le moment de notre conversation en descendant de Lubjana... Il faut clarifier les choses, il faut dire qu'on se connaît depuis vingt ans que, par exemple, ça peut avoir de l'importance, Steinar et moi on a représenté nos pays à un moment donné de notre histoire, quand il y a eu la création de l'Office européen des dépôts des dessins et modèles, des marques... ça s'appelle l'OHMI. À un moment donné, il y a eu la création du dépôt des marques et du dépôt du design au niveau européen, des dessins et modèles. Les juristes, à Alicante, ont créé un comité d'experts. Steinar a représenté le Danemark et moi j'ai représenté la France. Ça me paraît important de dire qu'on se connaît et qu'on s'apprécie. On connaît bien notre truc tous les deux.

Quand on a commencé la conversation, je n'avais pas fini cette recherche. Cette recherche, elle est venue entre temps. On a commencé cette conversation, il faudrait que je retrouve le moment où nous étions à Lubjana, et puis Sciences du design, historiquement ça s'est fait comme ça. On était contents de se retrouver et de blablater ensemble et puis il ya eu Sciences du design qui a fait un numéro spécial sur le design management. J'ai dit à Véronique Cova et Guillaume Blum, etc. je me suis dit que c'est peut-être le moment. En

plus, parallèlement, je donnais mes archives à Lille. Tout ceci est aligné, je me suis dit que c'est peut-être le moment de faire quelque chose avant que je les donne, avant que les livres partent, et donc que je fasse un point sur sur le design management en matière historique. C'est vrai que le fait d'avoir fait ce recul historique m'a renforcé dans la conversation, forcément ça a nourri la conversation.

C'est marrant parce qu'il ya des trucs que Steinar a repris de l'article. Il y a une version en anglais qui va paraître de l'article le mois prochain, dans une revue anglaise. Steinar est marié à quelqu'un qui comprend bien le français. Très vite, je lui ai parlé du truc parce que ça me passionnait. Il a été passionné. Dans la première série, l'espèce d'historique qu'il a fait sur le design management, il a repris tout ça. Il s'est vachement approprié le truc. Je n'ai rien fait, il s'est approprié le truc et je trouve ça sympa. C'est une conversation publiée d'une heure. Si on avait été à fond la caisse, on aurait été plus violents.

Ce n'est pas violent en tous cas.

C'est assez gentil, c'est 10 % de ce qu'on pense.

C'est la face émergée de l'iceberg.

Je pense que Steinar vous répondra mieux. Il a eu beaucoup de like. Ce serait peut-être pas mal de l'encourager, il serait sans doute très content de parler avec vous parce que c'est lui qui a contacté les éditeurs. Je lui ai dit « le design management en ce moment tout le monde s'en fout ». Franchement, je le vis tous les jours, « tout le monde s'en fout ». Le pourquoi de « tout le monde s'en fout » m'intéresse beaucoup par contre. Je suis plutôt sur le pourquoi du « tout le monde s'en fout ».

Mais, apparemment, votre hypothèse du « tout le monde s'en fout » n'est pas validée et ce serait lui qui avait raison puisque finalement il y a eu... et c'est la question suivante, il y a eu du feedback, du retour, de l'intérêt.

C'est quand même une thèse, ce que vous faites. Il faudrait demander à Steinar des statistiques précises, qu'il doit pouvoir vous donner.

J'y compte bien puisque d'après ce que vous me dites, puisqu'il est consultant et puisqu'il avait mis un dispositif en place, il doit avoir une idée assez nette des retours. C'est une hypothèse que je fais.

Il me pose la question « qu'est ce qu'on fait ? », dans son dernier mail. Dans cette affaire, je lui ai dit « tout le monde s'en fout ».

C'est post-publication vous lui avez dit « tout le monde s'en fout ». Vous continuez à en être persuadée ou avez-vous pensé que vous avez été finalement contredite par les faits ?

Je continue de penser que tout le monde s'en fout. Il m'a envoyé un truc très long le 12. Un éditeur de magazines qui s'appelle Artifact qui a proposé de faire un article à partir de nos trucs, c'est le seul retour, d'écrire un essai. Il est sur une mission actuellement dans une agence design et il les accompagne sur la stratégie. Il a posté les articles sur academia.eu et

on a beaucoup de retours. Ça, c'est plutôt plus intéressant. Les retours sur academia.eu, ce serait pas mal pour vous aussi. Et puis, Artifact, c'est un journal de design practice, mais ce n'est pas un peer review. On a deux trucs, academia.eu, et Artifact qui nous demande un essai. Ce serait vachement bien d'être accompagné par vous, en tant que chercheur, là-dessus. En plus, nous, on n'y connaît rien à l'édition.

Avec plaisir. Je cherche, comme je vous l'ai dit, à la fois je suis intéressé par votre sujet et je cherche des cas. Vous seriez pour moi un excellent cas puisque j'ai déjà travaillé sur des choses similaires.

Je ne sais pas ce que je lui ai répondu ; j'ai du lui répondre que je suis fatiguée. Je suis fatiguée de ce métier de dingues. J'en ai ras-le-bol.

Vous ne pensez pas que..., je reviens sur les sur mes obsessions, mes dadas... que le fait de... à force d'avoir regardé des choses et de de travailler dessus, une espèce de d'hypothèses sous-jacente que je formule maintenant de manière plus explicite qui est que, finalement, si vous voulez expliquer les choses, le digital c'est super. Mais c'est surtout super comme outil de diffusion. C'est vraiment intéressant de l'utiliser dans une perspective transmédia, pour raconter une histoire et emmener vers autre chose. Je reste convaincu, ça fait un peu tâche par rapport à d'autres dans la discipline des SIC, que le livre reste un objet, on le voit aussi dans le service design, que le livre est un point de contact. Appelons ça comme ça si on était dans du design de service. Qu'il reste un objet qui a une valeur particulière et que cette valeur particulière permet de prendre date. Et que si on l'inclut bien d'un dispositif transmédia c'est intéressant. Et que, pour bien l'inclure, quand on parle de design notamment, il est intéressant de l'illustrer. Pour le coup, que graphiquement ce soit d'un très bon niveau. Je ne dis pas que ce soit uniquement du design graphique, mais je dis que le design graphique doit en faire partie. Une hypothèse que je pose est que la chaîne transmédia, pour le bouquin, est quelque chose qui fasse qu'on profite complètement de ce médium qu'est le livre. Ce qui me frappe dans vos initiatives, c'est que vous êtes, d'un côté, sur des articles scientifiques dont on connaît le formatage qui empêche quasiment d'avoir de la formalisation graphique et, de l'autre côté, deux choses qui sont assez grand public, comme Artifact ou d'autres, mais qui sont aussi très formatées. Ce que vous montriez toute à l'heure, ces deux livres, en disant « je n'en veux surtout pas, ce sont des collections, je veux pas rentrer dans un machin ». Si vous rentrez dans Artifact, vous allez rentrer dans un machin, en fait, qui va vous imposer ses propres normes graphiques, ce qui est normal puisqu'ils ont une unité. Mais êtes-vous prête ou avez-vous réfléchi ou pensé à sauter le pas qui serait d'avoir votre propre langage graphique dans un livre qui puisse justement...

C'est ce que je demande depuis deux ans. Je demande ça depuis qu'il ya quelqu'un qui a commencé à me dire « bon alors, ton bouquin, il faut le refaire ». Mon bouquin Français, en 2002... je vais vous chercher mes deux bouquins. [pause] Je ne parle pas du bouquin de 1990. Je prends le bouquin que j'ai fait en 2002 chez Eyrolles. Ça s'appelle un livre de référence, c'est-à-dire une synthèse. Un an après, j'étais à l'époque responsable de la recherche pour le Design Management Institute à Boston, je me bats pour qu'il soit publié aux États-Unis. Je rajoute deux chapitres, ça devient ça [montré à l'écran] aux États-Unis. Design Management, 2003, c'est la bible. Pendant pratiquement trois ans, rien ne se passe. Et puis, à partir de 2006 jusqu'à 2016, c'est la panique. Je vais vous montrer. Ça commence par l'édition Turque, puis l'édition Italienne, après l'édition Chinoise, après je

pense qu'historiquement ça part des Turcs, après les Coréens, après les Italiens, après les Chinois. Je ne sais plus, il faudra que je vous donne exactement, que je regarde sur mon CV.

Et puis, ça s'est terminé par ça. Une copine m'avait dit « tu nous parle de design et tu n'as même pas un designer graphique et tu n'as même pas une identité ». Ça, c'est une agence de design française qui me l'a fait parce qu'ils avaient aussi une filiale au Brésil. Donc ça, c'est la version en portugais qui est faite par un éditeur Brésilien. Et, là, il ya eu un petit peu de design graphique. On a mis un peu de couleurs, on a fait 2-3 trucs.

Je pourrais vous montrer, c'est un bouquin différent à chaque fois. J'étais plus dans la conception du bouquin qu'au design. J'ai fait du design thinking à tous les niveaux. C'est-à-dire que j'ai monté des outils. Sauf pour l'édition japonaise, je n'ai pas travaillé avec des designers, j'ai travaillé avec des profs. Je voulais que, quelque part, il y ait une équipe qui co-designe mes livres. Finalement, il faut que je vous les montre [passage des livres à l'écran]. À chaque fois, ça a été fait avec un éditeur. Effectivement, qui m'a fait rentrer dans son format. Là, vous avez l'édition en coréen, vous avez l'édition chinoise, vous avez l'édition japonaise, et puis, là, la dernière. Je vous montrais ça parce qu'on avait commencé à avoir une identité, pour mon nom. C'est un de mes étudiants, c'est l'édition en persan. Il faut que mon nom soit une couleur, etc. Donc il ya eu une logique de marque.

Pour l'édition japonaise, sur place, j'ai créé une équipe avec un éditeur et des profs. J'étais dans la logique que c'était un ouvrage – la référence –, donc un ouvrage de référence avec des images. C'est un format assez clair, c'est une forme d'édition. Mais là, Nanako me disait « on n'y comprend rien ». Je disais, « Nanako, c'est toi qui est designer », donc elle m'a rajouté plein de schémas. Quand elle a fait le truc, en japonais, elle a rajouté des schémas. J'étais dans la gourmandise après ce que j'avais fait avec Nanako.

Ce serait quand même génial qu'on refasse une édition anglaise ensemble. Ça m'a fait comprendre que le chapitre machin c'était compliqué, etc. Je voulais aller beaucoup dans la pédagogie. Pour mes bouquins, j'ai adopté une formule de design thinking, c'est-à-dire qu'il fallait que le design management soit compréhensible pour un étudiant. Pour ma gourmandise en matière d'édition à l'heure actuelle, quand les gens me disent qu'il faut refaire mon livre, je dis, et je l'ai dit à Steinar aussi, ça ne sert à rien de parler de design management tant que les gens ne sauront pas ce que c'est que le design.

Ça me fait penser, en deux minutes, la première chose c'est que j'adorerais travailler sur le corpus de vos adaptations en différentes langues. Ça me semblerait un exemple intéressant pour illustrer ce dont, moi aussi j'ai envie de parler, dans un domaine que j'ai pas encore étudié, qui est celui de l'ouvrage de référence pour les étudiants. J'ai vu deux ouvrages de référence pour des professionnels. Ce à quoi ça me faisait penser c'est, peut-être que vous connaissez ce bouquin ...?

Je ne l'ai pas lu encore.

Le bouquin de Lalou, *Reinventing Organizations*. Ce qui est assez marrant, c'est que l'édition originale n'est pas illustrée mais que ce que j'ai dans les mains est une édition illustrée.

C'est quoi, c'est la nouvelle édition ?

Ils continuent d'avoir une édition non-illustrée, mais il y a également une édition illustrée. En fait ça tient à une chose qui est basique, et qui est une question extrêmement indiscrete « combien vous en avez vendu ? ». Est-ce que vous avez une idée de combien vous avez vendu de bouquins dans les différentes éditions dans les différentes langues ? Là, par exemple, le livre il a commencé... on peut le prendre des deux côtés, on peut se dire « je fais une édition illustrée quand j'ai gagné suffisamment d'argent, quand j'ai trouvé qu'il y avait suffisamment un intérêt à mon bouquin même s'il n'est pas illustré, je l'illustre et je me fais plaisir. Ou on prend l'envers et on se dit que, pour que ce soit plus diffusée, il faut qu'a priori je l'illustre pour que les gens aient envie de se l'approprier. Ce qui est intéressant dans le mouvement de va-et-vient, c'est ce qu'on constate, par exemple quand on fait des livres aujourd'hui sur les business models, même à destination des étudiants. C'est difficile de faire un livre dans lequel il n'y a plus aucun graphique, plus aucun canevas, plus rien de tout ça depuis que *Business Model Generation* est paru. C'est devenu un standard de fait. C'est venu complètement perturber ou chambouler l'idée de ce qu'est un bouquin de référence du domaine. Donc, je me pose des questions par rapport à cela et à votre réaction à chaud.

Super, je trouve que ce serait sympa que vous preniez le train, que vous veniez à Metz. Il faut que vous preniez le temps de regarder tout ça.

C'est ce que je suis en train de me dire

On pourrait se faire un petit atelier de réflexion là-dessus. J'ai 73 ans, ça va bien. S'il ya des gens qui veulent le faire... j'arrose tous les matins, comme j'arrose mes radis pour mon petit-fils. Je ne vais pas être dans le faire. Ce n'est pas ma fonction. Par contre, je me sens responsable au niveau du collectif du design. Il y a un certain nombre de choses qui protégeraient les designers et les livres sont effectivement des fondamentaux qui protègent. Donc, je suis très attentive à cette logique de l'édition. Par exemple, on est en train de travailler pour « Lille, capitale du design », l'année prochaine, avec des espèces des formations de base, avec des bouquins genre « la bibliographie de base de celui qui est tombé dans la marmite du design pendant la nuit ». Ce sont des sujets qui continuent à m'intéresser.

D'un autre côté, avec Lille on est en train d'essayer de créer un centre de documentation qui n'existe même pas. Il n'y a pas un endroit en France où on peut avoir les revues de recherche sur le design, les bouquins de design depuis vingt ans. Je suis en train de le créer. Très volontiers, je pense que vous allez nous redonner du courage pour continuer à descendre notre montagne. Steinar me dit, « je suis dans le faire, je m'amuse avec cette agence de design », il leur a donné un conseil...

[sonnerie de téléphone] à bientôt, au revoir.

2. Interview of Steinar Valade-Ammland by Jean-Louis Soubret via videoconference, friday 19th April 2019

As you know I had a interview with Brigitte. Do you you want me to briefly explain what is my is my research work about?

Okay

So this is a doctoral research in information and communication sciences and I have two directors. It's important to understand the context. One is a French director, and in France it's definitely information and communication sciences and I have another director who is English and is based in the UK, in Oxford, and is the director of the Center for Publishing Studies in Oxford Brookes.

Okay

So I'm really in between information and communication sciences, publishing studies and, to make it even more complicated, a little bit of design. This is due to the fact that for the past 20 years I've been a publisher. So I'm interested in publishing. And also for the last over ten years now I've been working, I've been training, and I've been conducting workshops in design thinking which was something completely new for me. It was parallel to the fact that I started my own publishing firm and at the same time I started working for a consultancy. It's a studio, an innovation studio as it is called. And so I started to work in design thinking. And now my research is in design thinking and publishing.

What is the thesis about?

The thesis is design thinking and publishing. That is, how design thinking can be published on one hand and, on the other hand, it is about how design thinking can be used in publishing. Given the fact that publishing is traditionally an industry which is based on the law of offer more than on the law of demand, can it be changed through design thinking?

Have you have you read any of our articles?

Yes, I've read your series of the seven articles. Actually I was very interested in your articles. For the content of the article themselves because it was a very good way of distinguishing between design management and design thinking.

That's something which has actually not been done yet.

Okay so that was a good start.

Somehow design thinking was revived in the early 2003 by Tim Brown and Ideo even though it's an old term. It more or less automatically just took the place of design management as if it was just a higher level of design management. I think one of the messages that we try to convey around the articles is that they are not the same, they are complimentary but

they are also interdependent. If you don't have both you will not exploit the potential of the parts. And I think that is probably the novelty in the articles. For some reason surprisingly no one has really dealt with that by dilemma before

Maybe because I'm familiar with the subject it was quite obvious in what I have read of your articles. So maybe it's the way I read them.

I don't know the introduction to design thinking that you have. But most of the sources of design thinking, most of the articles, the courses and so on, they focused on the methodology, harder. And I think, but that's again a core of Brigitte's and my thinking, that design thinking is not a methodology, it's not a toolbox. It is much more a concept, a framework for working with designing and innovation.

That's probably right. Actually I've been trying to define design thinking for my thesis and I came up with a hundred page book and bibliography. What you say is definitely in it, that study but, as you mentioned, to simplify it I would say that there is this Californian blend of design thinking which was described by Tim Brown and David Kelley which is the one emerging at the beginning of the 2000s. And there's also this older blend of design thinking which has emerged as design research from the 70s. And the two are actually difficult to combine. I would say that probably what you said about the absorption of design management and design thinking into the same corpus is probably the Californian blend and the other blend is very different. It's what you described as probably a design thinking more into a none methodological approach which is not a toolbox.

Exactly. Personally I am very fond of the the definition that Bill Moggridge gave where he said that design thinking is a mandate to include intuition into your problem-solving. That somehow captures what it is to me. It is much more a mandate given by top management to the organization to work in new ways to apply new methodologies, to apply design and designing management. But it's it is much more a framework or playing field which is laid out by the decision makers of an organization.

It's probably both top-down and also bottom-up because if people are not allowed to make mistakes, to think out of the box and if they don't know that they are not going to be censored, that they are not going to be blamed if they fail, they can't do it.

Unless the mandate comes from the top there will be no bottom up.

I agree with you that the the first one is probably really top-down. What is your time availability? I was thinking one hour if it's okay with you.

That's good

I had guidelines of what I wanted to address with you. For my research what I am more interested in, it is not so much in what you have written as a content, as your publishing strategy. What I'm trying when I'm working on design thinking and publishing is this question of how. Sorry if I'm integrating design thinking and design management. But the idea was how people would do that? I mean we do design, we do design management and we do design thinking, we do management and publishing. As a publisher, to just to draw a parallel, I published with a scientific publisher and I was working with people

in information and communication sciences, I realized, that was a striking feature, that people who are working in communication are absolutely unable to communicate what they are working on. They don't communicate well. This is paradox that I want to address in terms of designing thinking and publishing . So the first question was: why did you start with this 7-paper series? What was the...

... the background for it. I'll take you all the way back to the start of the project. I have known Brigitte for many years. I met her in different contexts especially in some of the international design organization. I know her, not very well but I have known her for a decade or more than a decade. And then, a little bit over two years ago we were both speaking at the same conference in Ljubljana in Slovenia. At the reception, the dinner after the conference, I ended up talking with Brigitte and then I asked her "did you ever think about writing a follow-up on your book from 2003?" Because Brigitte's book from 2003, Design Management, is still a textbook in a lot of universities around the world in design management. It's the standard literature for management majors. And then, thinking about it, design management has really changed since 2003. To me it's a paradox that a book which is 15 years old can still work as a standard work for a professional field like this. And she said that a lot of people had asked her about that. And she had been thinking about it but she was retiring, and there was this and there was that. Clearly she was really keen on just embarking on a new book project. And then I said, just more or less as a joke, "okay why don't we write it together?" She just picked it up and then we continued talking. But the next evening we were also at a dinner and she was sitting at this party. She came down to me and said "Steinar let's write that book". And I said "fine". That's how it started.

We had a few exchanges just to frame our thinking. Then we met in Paris in February 2017 and had a mini workshop between ourselves on what was it that we wanted to convey. What would be the important issues and the angle? And we more or less developed the concept during a Saturday in her house in Boulogne. And then we started writing. Basically our working routine has been that I had written. Then she commented and paired it with other books and case studies, research that she knew of. Brigitte is a pure-bred academic and I'm a practitioner. I'm not even an academic technically speaking. I've been working in the field with design management and also management as director of the trade orientation for designers for 12 years. I think it's a pretty good scope of what has happened in the design arena for the last 20 years. And I've also been, to the extent possible, playing an active role in trying to articulate where design was going, where it was heading, what it could be, and how much more design could actually contribute if we just redefine its role both within the organizations DMI and DATA [Danish Data Center Industry] and all the other organizations. And here, in Denmark which has somehow also had a leading role to some extent in defining design, I've been a fairly central piece in pushing that movement of design entering into services, entering into the public sector, entering into organizational design and so on. So I have a lot of knowledge but it's not academic. It's much more framed from an experiential background. So it was a good match.

I've been writing for the last 20 years, I like it and it comes quite easy. So my role has been that I've been writing. I've been conceptualizing and she has been balancing and

adding academic rigor to the work. She's a busy woman and from time to time I am also practicing. So it's been a little bit up and down. It's not been a very linear process. It took a year and a half to get to a point where we said "okay now we're where we wanted to be". And then obviously on our way we had started a discussion. How would we publish it? I have only written one book which has been published in Denmark in Danish and in the US in English. So I'm not a very experienced writer. But Brigitte has written several books and the Design Management book that I referred to has been published in twelve countries. She had been working with a lot of publishers and she is very critical towards that relation. She feels that there is far too little [...] given to the writer in terms of the design of the book, how to communicate it. It's like you write it and then you leave it to the publisher who does whatever he/she wants to do with it, and most of the time that's crap. So she wanted to involve designers or graphic designers, designing the book as a work.

The problem is that none of us can put up a lump sum of money to hire a designer to do that without knowing whether it will be published at all. And design schools are not very keen on it simply because they are worried that it doesn't seem to fit into their curricula. It's too encompassing, it's not limited enough to make it as a student work. We actually spent quite a lot of time talking to design schools, talking to designers and to all kinds of people about how we could collaborate on making this complete work. It was ready to be designed. We contacted publishers to say "okay we haven't finished the book yet but it has to be published like that". As the discussions went on I was just starting to think that this is going to take a lot of time. This is adding another year before we get anywhere at all and to me time is crucial. There is a discussion now, there is a dilemma out in the Design Thinking and design management communities which we could ride of if we acted quickly. So actually, not out of desperation, but somehow because I'm not a very patient person and I could just sense that this is not really leading anywhere. Just to trying to publish it like this is insane.

"What do you think if we cut the book into portions and just publish it on LinkedIn and just see what happens?". And she said "fantastic, let's do it". Then I went back and sat down. There was a little bit of editing to do to make it into seven articles instead of a book. Somehow the format of the articles was easier for Brigitte to deal with. That was much more like a student thesis and she could take her old role as a supervisor. In that process she was probably much more inspired and much more constructive than in the whole writing of the book because none of us could really see where it was ending. With the seven articles it was very concrete. We felt "okay, now let's just do it". We had to set ourselves a time schedule and we had put a deadline on to ourselves. By that date the article has to be finished, after that there's no more correction. It was a very deliberate decision but it came out of a frustration that pursuing the idea of having it published by a publisher didn't seem to be the right way to do it because of the time.

I understand. This is something I'm working on for my thesis. It's is a transmedia approach. If I were to explain it in a few words. If you want to publish a book, a book is still a viable form of publishing. But of course we're in a digital environment and the environment has changed a lot since the beginning

of the 2000s. So you probably need to put the book into an environment which is also digital, which is what you did: there is a book which can be published in parts to start with, as episodes. Those episodes might be published as a book, or not, and, in terms of service design, they can also be complemented by other touchpoints. For example I'm thinking very much about the Business Model Generation which could be again vast, which could be conferences, which could be workshops, which could be any any kind of editorial or semi-editorial published activities organized around the book. That resonates with what I'm doing.

I just want to make sure I understood. I try to sum up what you just said about the publishing process. First you were going to publish a book. Then you worked on it for a year and a half. After a year and a half you had the book more or less ready to be edited or designed. And then you did not find the right way of publishing it, whether through schools, through professional designers or through publishers. And so you decided to hack it into a seven-article series.

Why did you decide to publish it on a social networks instead of publishing into a more traditional way? For example in academic journals or in magazines.

Well that would be almost counterproductive to the original idea. The audience for this book is not the academic world. The intended audiences for this book are people who work with strategic design in companies and organizations, people who work with strategic design as consultants or facilitators or processes. It's directed towards practitioners and not academics. It's not an academic book, it doesn't have an academic language, it hasn't been written as an academic series of articles. To me it would die if we just sent it to some kind of design care. The whole thinking when I suggested this to Brigitte was that, knowing from my own book, I mean hers has sold quite a few copies because it's being used as a standard work. But when I look at my own book, even though it's a published book both in Danish and in English, the figures are ridiculous. I mean it doesn't sell. It's also actually being used in Denmark at the IT University as a textbook. But still that's up to quite a limited number of readers and that means that writing a book and having it published for most of us doesn't have any economical incentive to it. What you get out of it is really low.

So I was thinking if I want to experience some kind of payback or success at having done all this work, because there is a lot of work in writing a book like that, that success has to be measured in the number of people who find it, who take time, not necessarily to read it, but at least to equate with it. And that has worked. When I add up the number of views on LinkedIn, just my own listing profile and the groups who are close to it, and there's only two (design management and design thinking), it's a about 120,000 views, that's quite good. I just know that a book would never ever be seen by that many people, that's one part of it. And the other part, as you said, is that you can start at one place and then it can evolve organically. What I did, some time after it was published on LinkedIn, was that I have also published it on Academia. I could see, because I get report, that it was downloaded three, four, five times every single day from Academia. And the other thing is that when people are there, they download other stuff that I've be writing as well. So it pumped. I might be a little bit naive but I think there is an objective in actually really distributing these ideas. I could see that the traffic was blinking. Obviously when I was posting it was enormous

but even after it felled out it has stabilized on a level which is three times as high as before I published it. So the interest in me as a person, as a professional has increased quite significantly just by doing this. At the end of the day it was a little impulsive. Somehow what we did made a whole lot of things.

It's really learning by doing. Thank you for sharing the figures with me. Shall I come back on the notion of payback, your incentive to publish. You published a book, you mentioned earlier. I'm sorry I didn't do my research well. I didn't see your book so I don't know what it is about. And in terms of sales figure...

They are negligible

I used to be a social science publisher and I know that most of the books sell in the range of hundreds. Is it what we're talking about?

That's exactly what my books have been selling. It sold more in the US. It was published in January 2016 in Denmark. Then I translated it myself. There is a publisher in the US called Business Expert Press which takes whatever as long as it has a profile of the kind. They serve university libraries, that's their main audience. I saw this on LinkedIn. They were searching for authors and manuscripts and I contacted them. It was peer reviewed in Denmark, the Danish version. So they took it right away because that was good enough for them. So we went into the process. It was published in February 2018 in the US. It has sold more in US during these eight to ten months than it has sold in three years in Denmark. But still the figures are hard to find right now.

The book is called Innoliteracy . It's a word that I made up, with the subtitle "From Design Thinking to Tangible Change". It's basically a book that discusses what it takes for an organization to benefit from working with design and design management or design thinking. It's about the environment you need to create in an organization in terms of giving time, giving the right physical premises, giving the mandate to fail, as you said, to make mistakes and all that. It's a book that doesn't really go in depth of what design thinking is but more what it takes for an organization to actually benefit from it. And then there is a model for how you can do that.

Would you be able to send me the reference of the book in English because I don't read Danish? Two more questions on this book because. I didn't know you had also published a book and that's interesting for me. First in terms of payback or in terms of incentive. After you've published the book did you see a difference? I have talked to an author in France who said that he has published articles in academic journals. Some people have read them but not so many. But then he published a book. He didn't sell so many of it but in terms of status it changed the whole thing. He could bring in the book as his name card so to speak and it gave him a lot of status. Did you notice this effect for you?

That's exactly how I felt. Having written a book hasn't given a lot of traffic, it hasn't increased my business in any way. But having it as a discussion-opener, as a business card, it gives an automatic credibility as someone who knows what he's talking about. Because there is this notion that you're not publishing a book unless you're an expert at your subject. Especially perhaps more when it was published in the US because then it must really be

okay. So having the book has had a lot of impact on how I'm being perceived. When I meet people, when I speak at conferences and stuff like that. But it hasn't brought a lot of traffic as such. It has had an effect clearly, but probably more than anything for my own self-esteem

So you are at the top of the Maslow pyramid.

Yes

Congratulations

I am not just a consultant, I am also an author

I am making gentle fun of you because it's also a consideration for doing my PhD

There has been a few interesting incidents. Since it's being used as a textbook at the University, I have actually met people. When I met them in different contexts and introduced myself, they said: "you're the one who wrote that book, aren't you?" That is better than sex. If you want to better your ego. It does have an effect when you meet people. I also had a few emails where people say "I read your book and what you wrote there has really made a difference to how I work". You know, that kind of feedback is extremely encouraging and really boosts your professional... It's a driver. I think that is probably the most significant effects of my publishing because, again, the numbers are not impressive and the earnings are ridiculous. It is much more a personal thing.

Thank you for sharing and being so honest about it. I was wondering and first for the book and second for the series

For the series you answered, but for the book who did you want to address? You said it's being used as a textbook in universities. Is it what you intended? Or is it a side effect that you did not expect? And why do you think it's so happened?

That's pretty much what I wanted because as far as I know it's only one university that uses it and that is the IT University. There's one activity at the IT university which focuses on user-centered design, UX and AX and DX. That's where they use it. I think it's quite coincidental. Unless there is a professor who reads it and feels that this resonates with his or her way of working with a subject, it will not be put on the list. But someone must've read it "this is relevant for my students". Again the book is not academical either, it is a practitioner book. And the fact that people who will be going out into all kinds of industries to work with user experience with service design and so on have read it, I think "that's fantastic". It gives them, in my opinion, perhaps a better understanding of how design can play a role in that organization. But the audience was a little bit the same as for the articles, people who work with change and innovation on a material level, people who have an influence on the processes we choose to develop our business.

Are you, yourself, teaching?

No I'm lecturing once in a while as a guest lecturer. Again because I'm not an academic I'm not a first choice when it comes to teaching positions. But on the other hand I got very interested in teaching over a whole semester. I really enjoy going in having a lecture or workshop or something and then leaving it. I think I have much more impact on people if I can give them an experience and then just leave it with that, help give them something to think about. It is quite rare but a few schools use me for that.

You approached the way you had feedbacks from the first series and all the feedbacks that you've had for your book when you published the seven-article series. Did you publish it in a design thinking frame of mind? That is, this is a prototype, this is going to be a test. Did you build up a framework to have feedbacks? Did you just do it because you wanted, as you said, to be out and to get whatever feedback you could in a not-so-organized way?

I think it was very focused on this prototype idea that "let's just get it out there and then we can start a discussion", which sounds like a fantastic idea. The only thing that I know from several attempts over a number of years, starting a discussion is very very hard. I never really believed that that would be the result. What I see now is that we have it the least with people whom we asked for feedback. We asked people to come back to us with comments or ideas of how things could further be developed. We haven't gotten anything. The only comments that I've had have been short comments from people who enjoyed it or people who thought it was important in their studies, or if they're worried. But no substance. So there's nothing remotely like the discussion being started by us. I think it would be great but I never believed it would happen.

Is it a case of what Ford was saying about "if you asked people what car they wanted at a time when there was no car, they would have said that they wanted a horsecart without horses"? That is, if you ask people what they think about your book and you don't tell me what you want to know, what is your plan, if you don't come up with a proposal they just would say "okay that was great" and you don't get much of it. Do you think that's the case?

Exactly. To me that's good enough because, as I said, I didn't really believe in starting this discussion, not with us. I think it's much more likely that we start a discussion out there from what I've seen. Every time we posted an article I also said "if you have missed the first ones, send me an email and I'll send them to you". I sent over 300 emails to people who asked to get the entire series. When I look at who they are, it's very often someone from an university who sees it. And then, the day after, three others from that university would also ask for the article. To me that indicates that there are discussions going on out there. But I think that the discussions that take place are between people who have read it or people who are working with it. They don't really care about discussing with us, they want to discuss between themselves and that's fine. I think that's great.

So you are out of the loop.

The only thing is, occasionally I get an email, even now, from people who have read it and who say we might want to use you as a speaker. For example next week I'm going to an university in Norway to speak at the graduation ceremony of the design masters. People

read it and said that's interesting. "Would you come and talk to us?". It does have an effect but it's not in the form of discussion, it's more of a feedback, but this made sense for us.

What's next? You published this series. What I have in mind is, you probably know the books *Business Model Generation* and *This Is Service Design Thinking*. These books have a common point. They started as a discussion. This is also another very interesting book which is on digital humanities, but I'm not going to name them all. They all started with a discussion and the next step was "we're going to sit down, write about it more or less collaboratively" like you did with Brigitte, just the two of you, "then we can open it to other contributors to get more feedback, especially in the manner of case studies that would fit in, or not fit in, within the model that you're proposing". I'm speaking of your book, it's a bit of a mix, and there's another stage which you have also spoken about which is "why don't we have designers to work with us from the beginning?". If I were to refer to the famous Danish Design Center "Design Scale", I'd say you want to climb up from stage 2 to stage 3 or 4 (design as a strategy) in publishing a book. Is it something that you have in mind? Is it something that, given the feedbacks, you consider? Is it the end or is there something after?

I don't think that it's the end. I think it's still hot in the way that the topics and our way of dealing with it is still novel. I think that it will have a life for a while. I was asked if we would like to write an essay based on the book for a Danish design research publication called *Artifact*. It's published in English and it's quite widespread in design research circles and with design educators. They asked if we wanted to write an essay based on it, because as an essay it doesn't have to be peer reviewed. I'm not writing something which should then be reviewed, then possibly be published. The thing is that Brigitte is a retired professor. She has time and a good pension and she can do whatever she wants. I'm still an independent consultant and time is money for me. I don't have time to do all that interesting stuff if it doesn't give me some kind of revenue. I do, all the time, but I really can't afford it. After writing this, I really realized that I have to restrict myself in terms of how much time I spend on that kind of stuff. Otherwise it will affect my income. As I have realized that this would probably not generate a lot of new income I'm just thinking to let it live.

If someone comes up with something I'll play along to the extent that it's reasonable and to the extent that it's also something I can defend from a resource point of view. I have to prioritize my clients and the projects that I'm part of which gives me a revenue. I have a two-day-a-week job as well in a design agency where I work with business development and I work for the EU as an expert two, three, four times a year and I do this lecture and stuff. So I'm already fairly, not fully, up. I feel that I have to restrict myself in terms of entering into projects which will take a lot of time. That's why, in terms of writing that essay, I'm thinking "yeah, I could probably do that" but it would take time to reduce seven articles into one essay. That's a lot of work, it's not just done like that. I'm thinking "why should I do it?". It would provide a good read for a number of design researchers, but then what? You mentioned it, there could be spin-offs? I will consider each one of them individually to see how much time that will take and who it will give me the opportunity to meet. But I don't have a strategy. What I would almost dream of was that—because we have published these seven articles which by definition is a book split in seven, we have

published it on LinkedIn—there would be a publisher who will pick it up and publish it in English.

I disagree with you. It's an open discussion. You know that LinkedIn is moving into publishing because they have realized that there's something that publishers don't have, which is an audience and a network.

That's what I thought as well. I discussed it with a lady, she is at Rootledge in London. She said "if you had published the first two chapters or three chapters, we might have been interested. As long as you have published it all, it's dead."

I have an example, which is the exact opposite, of somebody who is publishing sketches on LinkedIn. She's doing water painting. Now she's publishing one sketch a week and she's been contacted by a publisher who told her "that's great, we really want to publish your sketches into a book".

If a publisher comes and asks us, I will be 100% in favor of letting them publish it. I just don't know what Brigitte would say because she is still focused on the design part of it. I think what would possibly be more realistic is that a German or French or Japanese publisher says "we'd like to have the right to publish it in our language" since it has only been published in English and I know that, for example in France, there is a lack of literature on these issues in French.

There is. But I'm not sure there is a market because most of the people who are interested in these issues would not necessarily speak English but would read English.

It might be a little bit premature advice.

The last issue I wanted to address, we're almost in the one hour frame, is the issue of "this is design". In design there is a strong visual element. What you've done is text only. I don't know for you book...

Who says so?

I'm saying so, and I'm not the only one, but you don't have to agree with me. For example if you look at success, and speaking of success and coming back to the This Is Service Design Thinking and Business Model Generation books, part of the success is that they have translated what used to be courses, what used to be a PhD thesis which nobody will read obviously—because it's too difficult to read, into a visual book which is very understandable. Is this something that you have considered?

Brigitte wants it. That was what she had in mind when she gave this idea to work with design schools to make it into a designed product, more than just a book. I don't mind if that's what happens. I'm not so concerned about it. Probably just because I know that a lot of people would feel that knowledge is more accessible if it is made into graphs or graphics. When I was writing this book, I was writing directly to people who are in fairly senior positions in organizations. I think it's underestimating them to say that they don't read books. They read long books and I've always been allergic to this idea that things have to be limited to one page or, maybe, numbers. If everything has to be put into an icon or one page or a naive drawing it makes people dumber. I don't want to contribute to making people dumber, they are dumb enough already. I'm not fighting if someone comes up with

the project suggested. It's fine with me but I'm not a great advocate for the very popular ways. I like long books, I like long sentences, I love words which can be discussed. I'm not an academic but I think I have a very intellectual approach to these topics. I am a little avert to making things too popular, too easy

What I had in mind also is this book. I don't know if you've seen it. This is called Reinventing Organizations.

No.

This is a big success written by a guy who used to be working for the BCG or one of these consultancies. His name is Frederick Laloux, he's French but it's pointless. What he did is he wrote a book. This book was a big success and then he decided, he was solicited, to publish an illustrated version of his previous book which was text-only. What do you think of that? You just commented that you don't want to contribute making people dumber.

I think it would be great if someone took that on and if I got royalties for me. Perfect. But I would not be the right person. I would obviously be interested in being involved in making sure that what we intended is not affected. I don't think I would be a central part of that because it's quite remote from how I think. I would be skeptical, I guess.

The very last question. I understand this is a very different approach, I'm just trying to get it right. I'm talking about Business Model Generation again. It started with the academic, it started with a thesis. Then the people who wrote it were academics and they were solicited by business consultants and designers into designing the book. I think the big advantage, or the big difference, between you and them is that they were already academics so they had a basic income to cover their cost and, even though time is money for them, they could live with doing it and you can't. This is really a limiting factor.

I think you're right. If we got a grant to do it, it would be an interesting project to be part of. But I think it would also take a lot of rethinking and a lot of our mental capacity to go through that process. I just don't think that it's something that can be done just alongside, or as part, of other stuff. It's something you have to concentrate on, ahead of this kind of project. If I'm to be involved in a three-month project, someone's going to pay me.

I know what you mean, I'm not again an academic. I'm a consultant and I'm a publisher so my time is money too.

The bottom line is that I am basically open to any initiatives from anyone. I'm just not spending a lot of resources myself on thinking what we do next. To me it's very much like "let's live and let it live its own life" and then let's see if something comes up. And if not, well okay then time has probably passed. I'm not emotionally attached to my book or to the articles it's like it's "been there, done that", and on to the next thing. But if the next thing is that someone contacts us with a good idea I'm clearly keen on discussing it.

You have a fisherman strategy. The bait is in the water and you're waiting for a fish to take the hook.

It is taking a long time.

Thank you very much for your time. Is there anything you wanted to ask, comment..?

I'm thinking, with your publishing network, would you see any opportunities as it is now?

Do you know any publishers or someone who would be worthwhile contacting?

That's a very good question and a tricky one as well. As a publisher working for publishing companies I have had a career in a big group and then I had a career as an independent. So I know both words. In publishing companies I know that they have to have their arm bent to do something that they are not used to doing. For example it was very clear with *Business Model Generation*. The authors published their book first as a prototype. Then, when it became successful they were approached by Wiley and then they imposed their own terms. Most of the interesting books I have seen in this field were initiatives from groups of authors who had themselves taken on the editing and the designing. Then they went to publishers just for the publishing .

That was Brigitte's idea. We never got to that.

That's one thing. The other thing is, I also see a lot of independent publishers. Some of them, like BIS in the Netherlands, and a number of others, as you were mentioning, they would probably take on a project like this if they had a subsidy. Like yourself they have to earn their living so they would probably take a risk if they have some fundings. On a project like this I would think that your approach—to go on if you find an investor or a public grant—is very cautious and very reasonable. The thing is, I don't think they would fall from the sky . There are a lot of people who are very active, and very bright, and very good and they're actively seeking them. That's why I was asking, and that could be something very interesting for me to help you, to take a part both in my research and as a publisher, if you wanted to do something else, to go further. At this stage it was really a first contact. I wanted to know what you had in mind, how you did it, what was the feedback... But that could be interesting. I'm not offering you and anything. I'm just thinking out loud with you.

Let's just see . You also talked with Brigitte. What's your connection...

I know people who know her, so we are close in terms of networks, and I met her personally once or twice, at Cumulus and at conferences and I'm going to pay her a visit probably next week or the week after. I'm interested both in her book and in your project. We had the same Skype conversation as with you.

Let's just see what comes out of that discussion. If there is something which could be worth pursuing just pop me an email and then we can bring it up again. Somehow I'm clear in my mind about the project. I have a lot of ideas lined up. Again, I'm very very receptive to interesting ideas, to things that could be meaningful. In the meantime, I'm just enjoying the feedback that I get which is actually exclusively positive. I haven't had any any comments like "hey you misunderstood this, this is not...". It's all confirming that this is a valuable input in the discussion which is already there. Until otherwise proved I'm on that level.

As a publisher and from what I've seen in other markets and in other fields, I'm thinking that in your field of business, design management, there is a bible which is Brigitte's book. What's missing is probably a book to popularize the issue. It's a paradox that it doesn't exist either, to my knowledge, in design

thinking. There are a lot of articles, a lot of books but the book that is popular for everybody and easy to read, which is not like what Hasso Plattner is doing—which is very complicated, there's no such thing. It's too simple or too complicated.

That's worthwhile thinking about it. But somehow, if I go back to the original idea I got in Ljubljana in my conversation with Brigitte, I still think that there is a lack, there is something missing. I don't think it's good enough that the book is used to train the future design leaders, it's from 2003. I think that we didn't write the book that I suggested. We worried about something else. But I still think that an updated version of Brigitte's book is really needed because it's outdated, it doesn't reflect how design is being worked with—out in the real world. I still think that there is a gap there.

One last comment. Something that I've realized in my discussions over the year when I have worked with Brigitte is that there is a world of difference between how design has been perceived in France and how it is being perceived in Northern Europe. Some of the stories that I could bring into the discussion, she didn't even believe it. She thought that I was just making something up. But actually here and also the UK, I would say the majority of design thinking, design management, the whole complex of how you benefit from insight is lightyears ahead of what I see.

This is really a cultural gap in design between the Latin countries and the Northern countries and California.

There is. That's also something we need to keep in mind. We were talking about two levels of audiences here and the interesting thing because the 300 who contacted me and the majority comes from South America.

Surprise?

Yes and no. It's a surprise to the extent that we don't think they're very evolved. But they have skip-jumped the chaos of the last 15 years discussion. They are embarking on the discussion now and they are really interested in what's going on. There is an interesting mechanism also in terms of cultures.

What you're saying basically is that it would be interesting to have a state of the art on the ongoing discussion which would be global and fresher than Brigitte's book.

Clearly. And it would also be an idea for an article, to make a portrait of how design is perceived in different parts of the world. How has this discussion over the last two decades affected the different parts of the world in different ways. I can see it now because I know some people in Brazil who run design agencies in person. Brazil is coming very fast right now. Keeping track of what's actually going on, that could be a first thing. But again it's not within my resort to do that. That's almost a research in itself. But there is some interesting stuff going on in terms of how this discussion resonates in different parts of the world.

That would be very very interesting to have a mapping of what's happening. This requires, as you said, energy to gather people in the different countries and a treatment that is really a global network. That is, to open up and to have feedbacks.

There are mappings like that for design policy. That's being done by governments. How it's actually being perceived?

That would be great. There are a lot of openings.

If you can source the funding for that we could do that together

I was thinking more about you to source the fundings, actually. That would be interesting. Thanks a lot for your time. It has been a pleasure and has been an interesting exchange. I suppose that we will keep in touch. I will give you feedback and you will probably get some from Brigitte.

If you use any of what I said just give me note of what you use it for, right.

Definitely. The purpose now is for my thesis. I will give you a transcript of what I'm using. Thanks a lot.

I'm used to being misused.

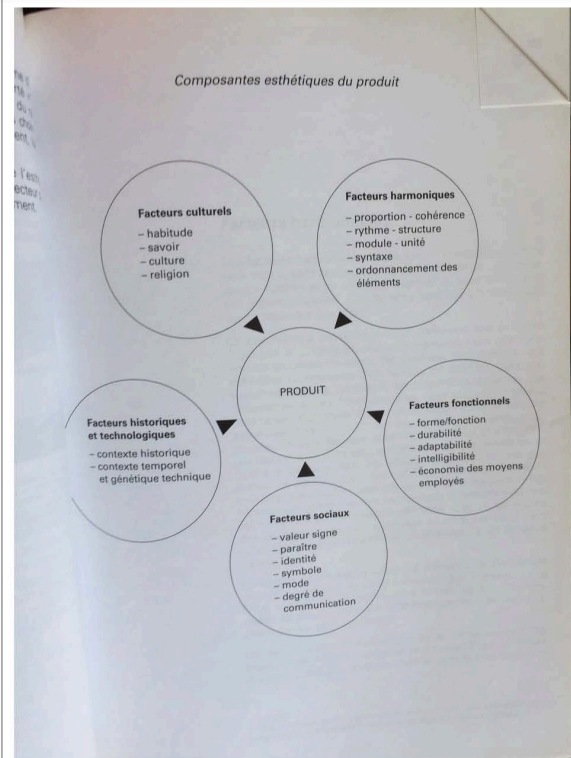
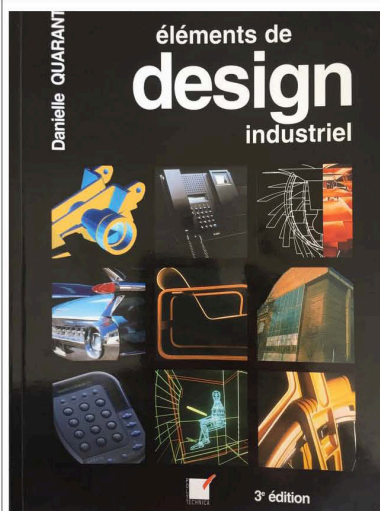
I promise I will try and make ethical and proper use of what you just said.

I am sure you will. It was a pleasure. We'll keep in touch.

3. Notes de visite au domicile de Brigitte Borja de Mozota à Metz, le jeudi 16 mai 2019.

Inscription en thèse à Paris 1 en 1981 (à vérifier), puis inscription parallèle à l'ENSCI-Les Ateliers en 1982-1985.

Découverte du schéma trichotomique de Peirce dans le livre de Danielle Quarante paru en 1984.



Théorie des signes de Peirce

C. S. Peirce, logicien américain, a contribué à introduire la sémiotique et la théorie des signes en philosophie et en sciences humaines. Le signe est, pour Peirce, un des éléments constitutifs d'un processus dans lequel le récepteur lui-même est impliqué. Qualifiée de « pragmatisme » par W. James en 1898, cette philosophie repose sur le principe suivant :

« Considérons l'objet d'une de nos idées et représentons nous tous les effets imaginables pouvant avoir un intérêt pratique quelconque, que nous pouvons attribuer à cet objet : je dis alors que notre idée de l'objet n'est rien de plus que la somme des idées de tous ses effets ». Cela signifie que l'image mentale que nous nous forgeons d'un objet est composée de l'ensemble de ses prévisions d'utilisation. Un objet est un signe. C'est le signe de ce qu'il fait, de ce qu'il pourrait faire, et tout ceci lui octroie sa signification. « Si les choses remplissent la même fonction, écrit C.S. Peirce, elles devraient être signifiées par le même terme. Si elles ne remplissent pas la même fonction, il convient de les distinguer par des mots ». C.S. Peirce décrit une phénoménologie du signe ou ce qu'il appelle encore une phanéroscopie (étude des signes et de leur manifestation).

C.S. Peirce distingue les trichotomies du signe selon un principe hiérarchique de trois catégories. Celles-ci comprennent trois dimensions qui appartiennent respectivement au « représentamen » (le signe tel qu'il se présente - signifiant), à « l'objet » (chose signifiée) et à « l'interprétant » (logique et lois d'interprétation).

Transposé et simplifié à l'analyse d'un objet ou d'un produit considéré comme porteur de signes, on retrouve ainsi le schéma trichotomique des signes de C.S. Peirce.

1. Dimension syntactique

La syntaxe est l'ensemble des relations qui existent entre les unités (mots, signes, symboles) formant le vocabulaire. C'est l'objet tel qu'il se présente, tel qu'il peut être décrit par l'ordonnancement de ses éléments constitutifs. C'est la structure du produit.

On peut illustrer ici cette dimension première par l'anatomie d'une bicyclette telle qu'elle est décrite par Baudry de Saunier en 1925 dans un petit manuel consacré à sa pratique*.

« Une bicyclette est constituée d'une selle et de pédales portées sur deux roues que maintient à la suite l'une de

une bibliographie de 7 pages.

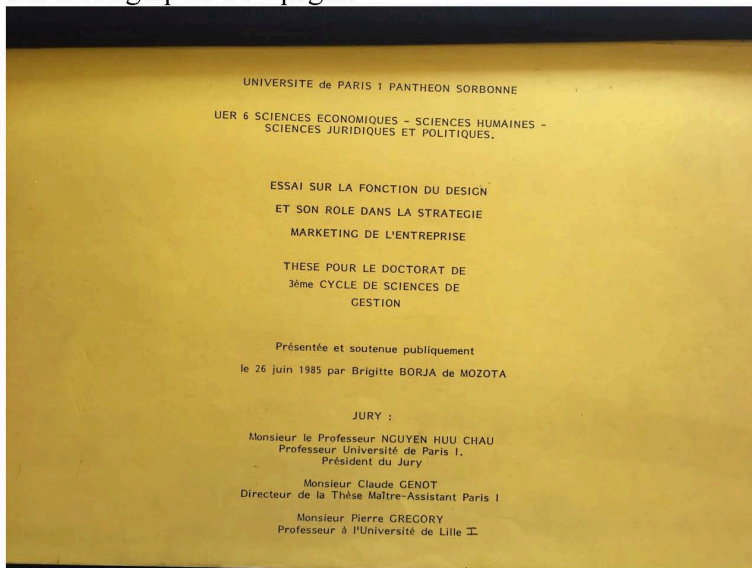


Figure 2. Couverture de la thèse de Brigitte Borja de Mozota, « Essai sur la fonction du design et son rôle dans la stratégie marketing de l'entreprise », 1985.

Imposer le terme « design » dans le titre fut difficile.

Thèse organisée autour des trois dimensions de Peirce et étayée par sept études de cas de projets.

Parution du livre adapté de la thèse en 1990.

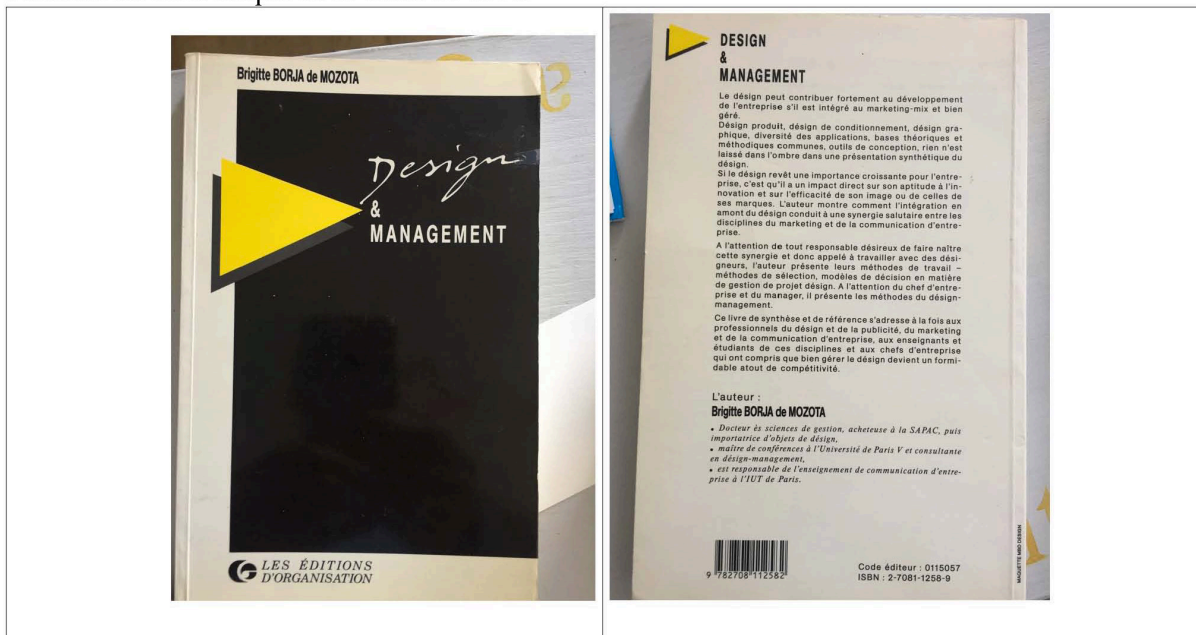
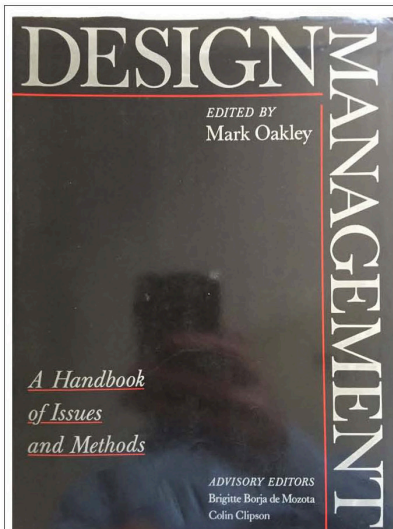


Figure 3. Brigitte Borja de Mozota, *Design et management*, Éditions d'organisation, 1990.

Publication d'un abstract de la thèse dans le *handbook* de 1990 fondateur du champ.



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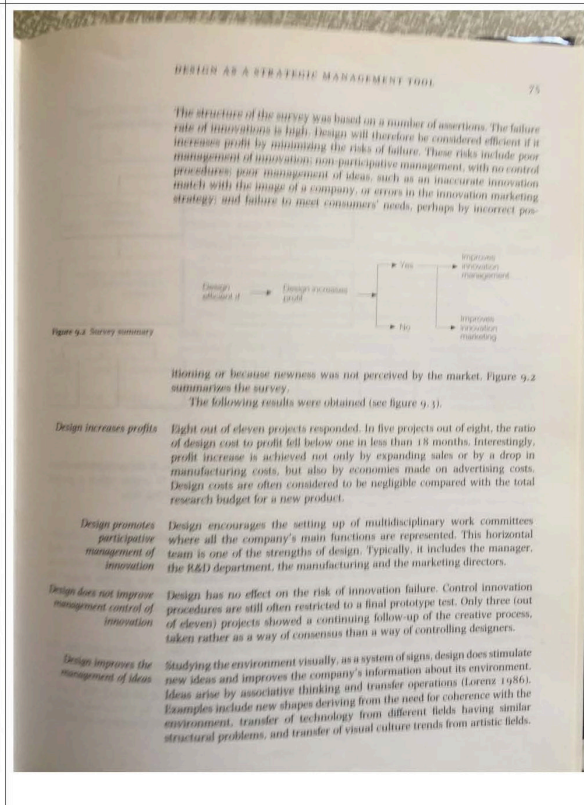
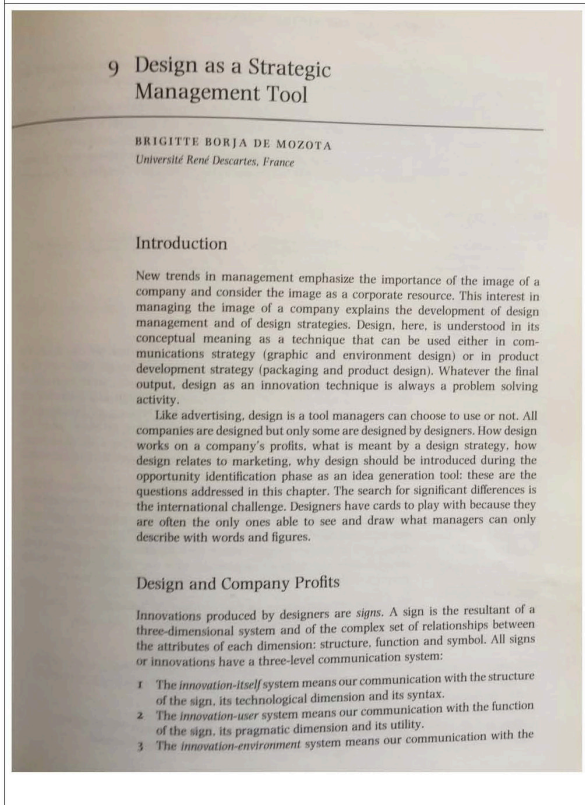


Figure 4. Mark Oakley (éd.), *Design Management*, Blackwell, 1990

Publication de l'article « A Theoretical Model for Design in Management Science: The Paradigm

Shift in the Design Profession, from Management as a Constraint to Management Science as an Opportunity Design management has changed greatly since Peter Gorb's definition in 1990 »



Figure 5. *Design Management Journal*, “Design Management Research”, 3(4), 1992

Thèse d'habilitation à diriger des recherches en 2000, sur le même thème que la thèse de doctorat, mais dans une perspective générale (stratégie, design, innovation...) et avec une bibliographie étendue de 20 pages.

[illustration de couverture, voire intérieur, à insérer]

“thanks to the 33”, c'est-à-dire 33 études de cas de lauréats d'un prix de design attribués à Paris et analysées à partir de la chaîne de valeur de Porter pour identifier des stratégies et les qualifier en termes de *patterns*, de *clusters*, etc. Le modèle de la chaîne de Porter a eu une influence fondatrice pour l'enseignement du design management et rédiger l'HDR.

Reprise de la thèse d'HDR dans un livre écrit en français et adapté en anglais par Brigitte Borja de Mozota. Pour convaincre l'éditeur Français qui tardait à publier, il a fallu fournir des témoignages d'acteurs professionnels et académiques à son service marketing. L'édition américaine a été soutenue par le Design Management Institute (DMI).

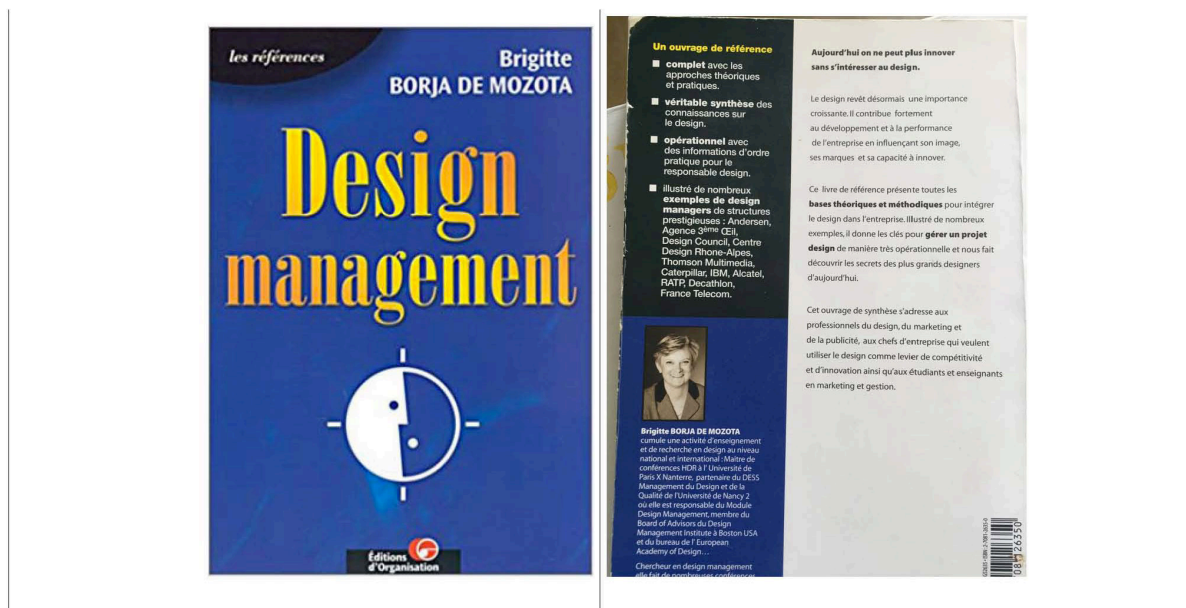
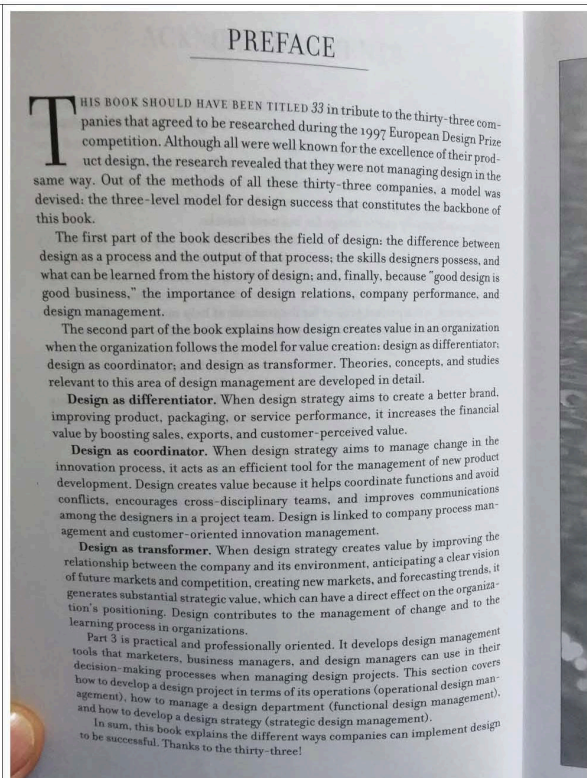
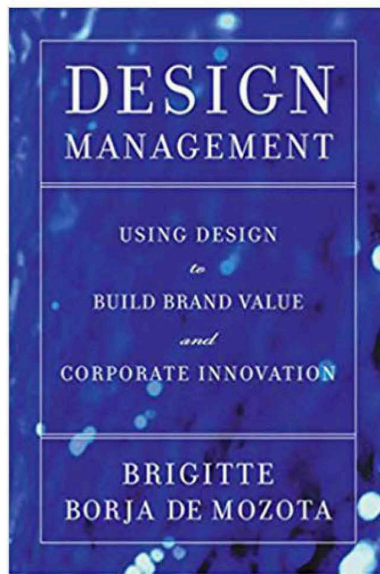


Figure 6. Brigitte Borja de Mozota, *Design management*, Éditions d'organisation, 2001.Figure 7. Brigitte Borja de Mozota, *Design management*, Allworth Press, 2003.

Publications parallèles d'articles sur le design management, en France et aux États-Unis, dans des revues de transfert, c'est-à-dire qui ne sont pas strictement des revues de recherche. En effet, la *RFG* se présente sur son site Web comme « généraliste et multidisciplinaire » et s'adresse aux « enseignants et étudiants en sciences de gestion ainsi qu'à un large public de gestionnaires » et publie des articles « conceptuellement rigoureux mais écrits de façon à être accessibles aux lecteurs avertis mais non spécialistes ». Le Design Management Institute (DMI) est une association professionnelle qui a été créée aux États-Unis en 1975. À partir de 1990, Brigitte Borja de Mozota y a organisé un colloque de recherche sur le design managérial dont elle a coordonné sept éditions, à chaque fois dans un pays différent. En 1994, elle a créé un chapitre de recherche qu'elle a dirigé jusqu'en 2005. Elle a ainsi contribué à la création du *Design Management Journal* en 2000. Cette revue académique, ouverte aux formateurs et aux professionnels, publie un numéro annuel et est destinée aux membres du DMI. C'est en quelque sorte le pendant théorique de la *dmi:Review*, un trimestriel dédié aux articles plus professionnels et aux études de cas créé en 1990 et que reçoivent aussi les membres.



Figure 8. Brigitte Borja de Mozota, « Un modèle de management du design », *Revue française de gestion*, 28(138), 2002.

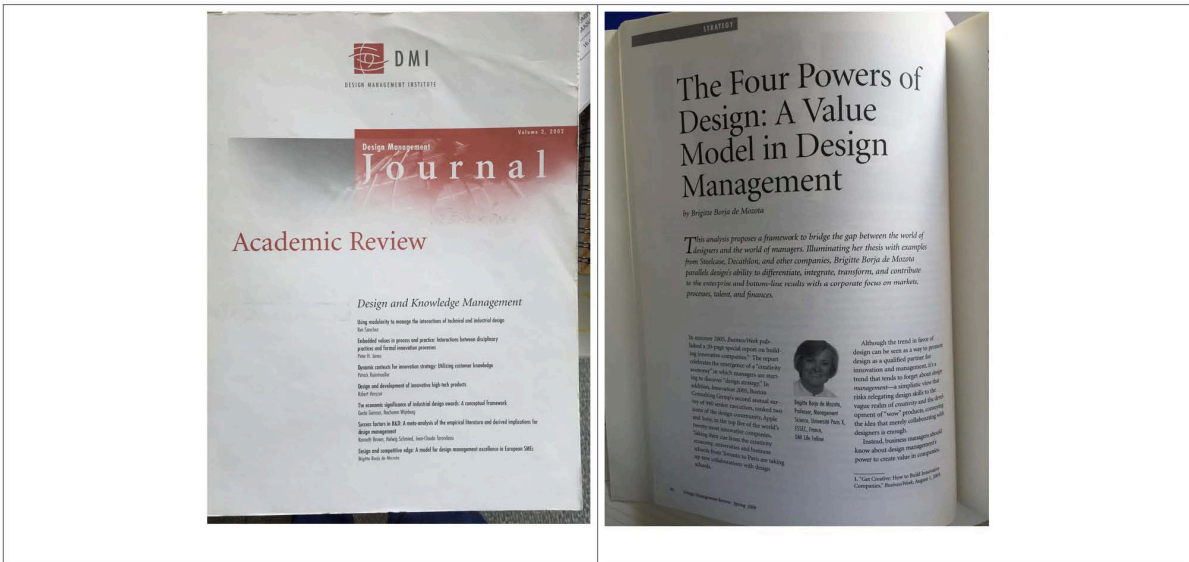


Figure 9. Brigitte Borja de Mozota, “The Four Powers of Design : A Value Model in Design Management, *Design Management Journal*, 2, 2002.

À l’instigation d’enseignants étrangers qui utilisaient le livre *Design Management* et ont voulu le rendre disponible à leurs étudiants dans leurs langues, plusieurs traductions ont été réalisées sous l’égide de l’éditeur français. Ni les collègues étrangers, ni l’éditeur n’en ont averti Brigitte Borja de Mozota.



D'autres adaptations ont été directement négociées et coordonnées par Brigitte Borja de Mozota avec des contacts, souvent d'ex-étudiants, et des cas locaux.





Figure 15. Brigitte Borja de Mozota, *Gestión del diseño*, Spain, 2010



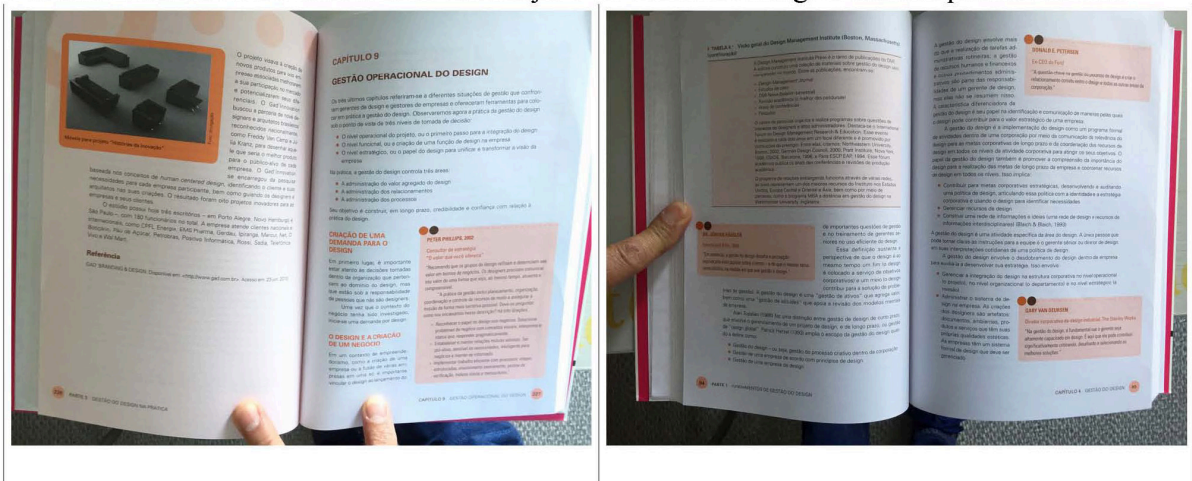
Figure 16. Brigitte Borja de Mozota, *Design Management*, Vijehnegar Publishing, Iran, 2010



Figure 17. Brigitte Borja de Mozota, *Usando O Design Para Construir Valor De Marca E Inovação Corporativ*, Bookman, Brazil, 2011

Les couvertures des éditions espagnole, iranienne et brésilienne ont été dessinées à partir d'une « logoisation » du nom de Brigitte Borja de Mozota – qui était *de facto* devenue une marque éditoriale – et a été offerte et réalisée par le studio TeamCréatif à Paris.

L'édition brésilienne de 2011 a aussi fait l'objet d'un travail de design sur la maquette intérieure.



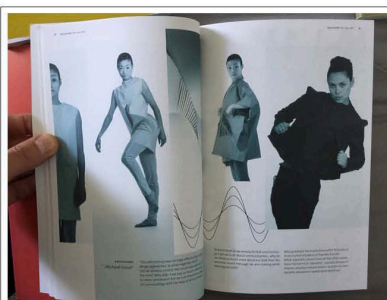
Cette sensibilité au design graphique intérieur et extérieur des livres se retrouve également dans les maquettes de la collection « Collection » créée en 2010 et dirigée par Brigitte Borja de Mozota jusqu'en 2013. Ses objectifs étaient de créer du lien dans la Parsons Paris entre l'enseignement et la recherche, de susciter des débats dans l'école, de contribuer à son rayonnement et d'inciter des étudiants à poursuivre en thèse. Chaque numéro abordait un thème en lien avec le design et ils étaient composés de reprise d'articles (traduits si nécessaire) que la directrice de collection voulait faire connaître, de travaux d'étudiants, de commandes originales... Un des problèmes éditoriaux

était la réticence de certains auteurs à accepter une schématisation ou une modélisation de leurs travaux pour en faciliter l'accès.

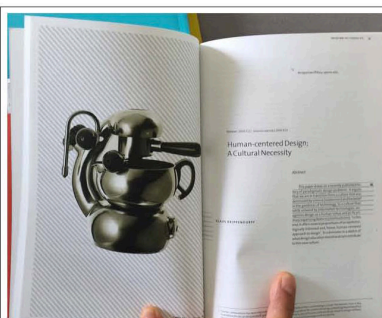
La création de la structure Designence en août 2012 s'inscrit dans cette volonté de mieux gérer et contrôler la diffusion de la méthode de design management développée par Brigitte Borja de Mozota, notamment via la diffusion des éditions du livre *Design Management*. Le constat est que le livre a été, et est, utilisé comme manuel de formation pour des étudiants et aussi qu'il contribue à l'approfondissement du sujet pour les thésards. Par contre, les idées et les modèles n'ont « malheureusement » pas été « piqués » par les consultants en stratégie (comme le BCG), ce qui en aurait permis une circulation et une appropriation dans les cercles des dirigeants d'entreprises. Designence a donc aussi vocation à rendre le *design management* plus opérationnel, que ce soit par la formation ou le conseil, et ce principalement à destination des dirigeants d'entreprises qui ont été peu touchés et influencés par les publications. L'ambition est de constituer une équipe pluridisciplinaire de 7-8 personnes formées par Brigitte Borja de Mozota pour valoriser et contrôler l'outil que constitue sa méthode de gestion du design. Des démarches en ce sens sont en cours avec un collectif de designers et une coach de dirigeant.



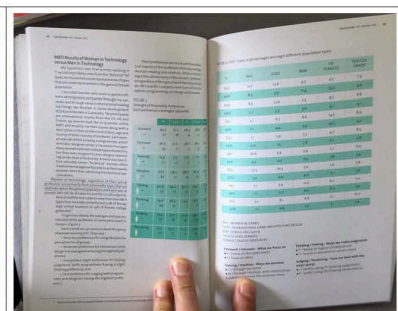
Figure 18. Brigitte Borja de Mozota (dir.), coll. « Collection Art + Design » #1-#5, Parsons School, Paris, France, 2010-2013



Brigitte Borja de Mozota (dir.), *Art + Design / Psychology*, coll. « Collection » #2, 2010



Brigitte Borja de Mozota (dir.), *Art + Design / Semiotics*, coll. « Collection » #3, 2011



Brigitte Borja de Mozota (dir.), *Art + Design / Economics*, coll. « Collection » #5, 2013

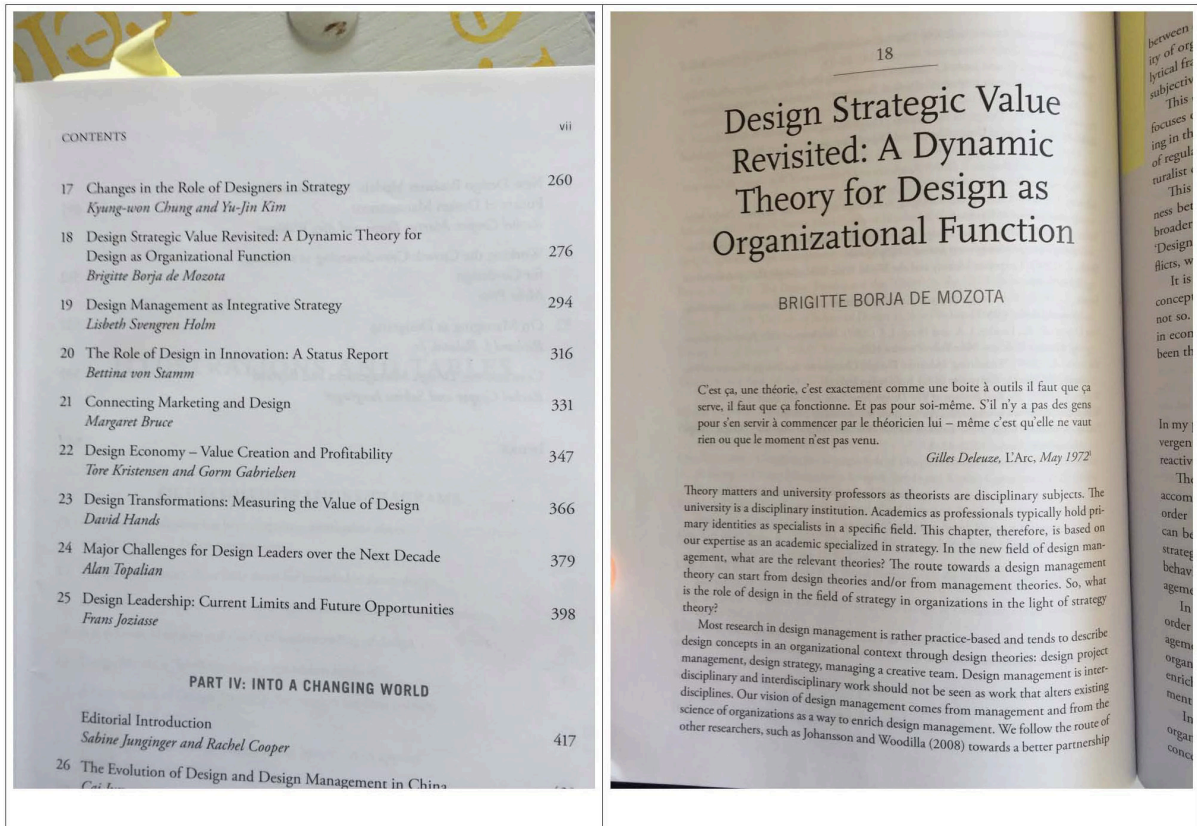


Figure 19. Rachel Cooper, Sabine Junginger, & Thomas Lockwood (dir.), *The Handbook of Design Management*, Bloomsbury, 2017 [reprint, 2011]

Appendix 3.

Ecridil and “Version 0”

Notes et comptes rendus préparatoires à la publication d’Écridil

1. Echanges avec René Audet, 18 décembre 2017

Participants : René Audet et Jean-Louis Soubret

Par Skype

Notes pour mémoire

Éviter l’éparpillement

Lors de la première édition, l’outil a pu surcharger les participants.

Il faut ne pas avoir besoin d’aller sur différentes plateformes.

Outil quotidien, mais qui ne heurte pas les options politiques des uns et des autres.

Peut-être relais des mails hebdos en complément d’un blog. Feed Facebook publié sur une page Web. Objectif d’une première liste condensée à proposer.

Que veut-on pour la première séance (réunion des volontaires) ?

Définir un modèle de publication :

moyens

contenus

publics

Idée d’un modèle à partir duquel réagir.

Ce à quoi les gens doivent pointer leur attention, pointer les points-clés.

Orienter la réflexion.

Structurer à partir des attentes des publics.

Absolu (objectif) qui ne se concrétise pas toujours : beaucoup d’universitaires, d’ingénieurs (contexte R&D) mais aussi quelques éditeurs qui travaillent sur des modèles concrets. La publication devrait « compenser » ce qu’on ne réussit pas à faire pendant l’événement. Par ex. diffusion à des publics plus pros. Pendant le colloque, espaces relativement limités pour favoriser des échanges riches. Prendre les contenus et les amener vers des publics plus larges. Enjeux de transfert et de vulgarisation, transfert : mobilisation des connaissances, faire progresser la société.

Pour l’invitation au premier comité, voici quelques indications, pistes proposées.

Entre RA et JLS :

cartographie

modèles commentés

scénarios (avant/pendant/après)

1er jet avant vendredi 22/12. Avant le 22 décembre, envoi d’un courriel à tous les destinataires en récapitulant qui sont les volontaires, en proposant à ceux qui le souhaiteraient de se joindre à eux et en invitant ces derniers à une téléconférence (via Doodle) la semaine du 8 au 12 janvier 2018.

Courriel initial

Les formes: publication numérique : une archive pérenne, indexée et citable

Objectifs : démarche « académique » humanités numériques

Publics : public de chercheurs (auteurs et lecteurs)

- chaque article accepté en Open Access (sur quelle.s plateforme.s ?) avec un DOI

- archive vidéo non dérushées de certains moments clés (lesquels ?)

- une vidéo montée des interventions des orateurs principaux

Publication papier : pour aller au-delà de la publication d'ECRIDIL #1

Objectifs : démarche design « expérientielle »

Publics : curieux, chercheurs des autres disciplines, praticiens et étudiants jusqu'au master

- format possible idem d.con festival (https://issuu.com/d-school/docs/d_confestival-the_book)

- making of et arrière-scène du colloque

- comptes rendus des échanges (après tout, un des ouvrages fondateurs de la sémiotique structurale, le fameux Cours de linguistique générale de Ferdinand de Saussure n'a pas été écrit par lui, mais par un éditeur scientifique à partir des notes des élèves de Saussure)

- photos d'ambiance et verbatims

Les processus

Objectifs du dispositif numérique : systèmes éphémères de communication (échanges, posts, etc.)

Publics : au service des participants, intervenants et spectateurs

- système de soumission des manuscrits

- réseaux sociaux : Twitter, Pinterest, ResearchGate, 99designs...

- Framapad, Slack...

- Youtube...

- etc.

Les contraintes et les moyens

À définir

2. Note de travail, 2 janvier 2017

Jean-Louis Soubret

Cartographie

À partir de l'expérience du 1er congrès Ecrdil, de sa publication et du concept de « catal-acte » de Stéphane Vial, j'ai essayé de construire une cartographie. Parmi les axes que j'ai testés, figuraient celui du temps de publication (c'est-à-dire entre les pôles en « temps réel » à l'issue du colloque, et jusqu'à des mois, voire des années plus tard) et celui du degré d'éditorialisation (c'est-à-dire d'une part la reproduction « brute » des facsimilés des auteurs et de photographies d'ambiance des participants indexés de manière sommaire, et d'autre part des articles rédigés par des rédacteurs professionnels, des reportages photographiques professionnels et des représentations visuelles réalisées par des graphistes organisés par un rédacteur ou un comité).

Après réflexion, le premier axe du temps de publication est venu alimenter ma réflexion sur les scénarios et le deuxième sur le degré d'éditorialisation est de facto intégré dans la présentation des modèles commentés. En fin de compte, en complément de l'axe des destinataires (auteurs↔lecteurs) qui s'est immédiatement imposé, c'est l'axe du contenu (texte↔illustration) qui m'a semblé le plus opérant et que j'ai fait figurer ci-après (cf. Figure 202).

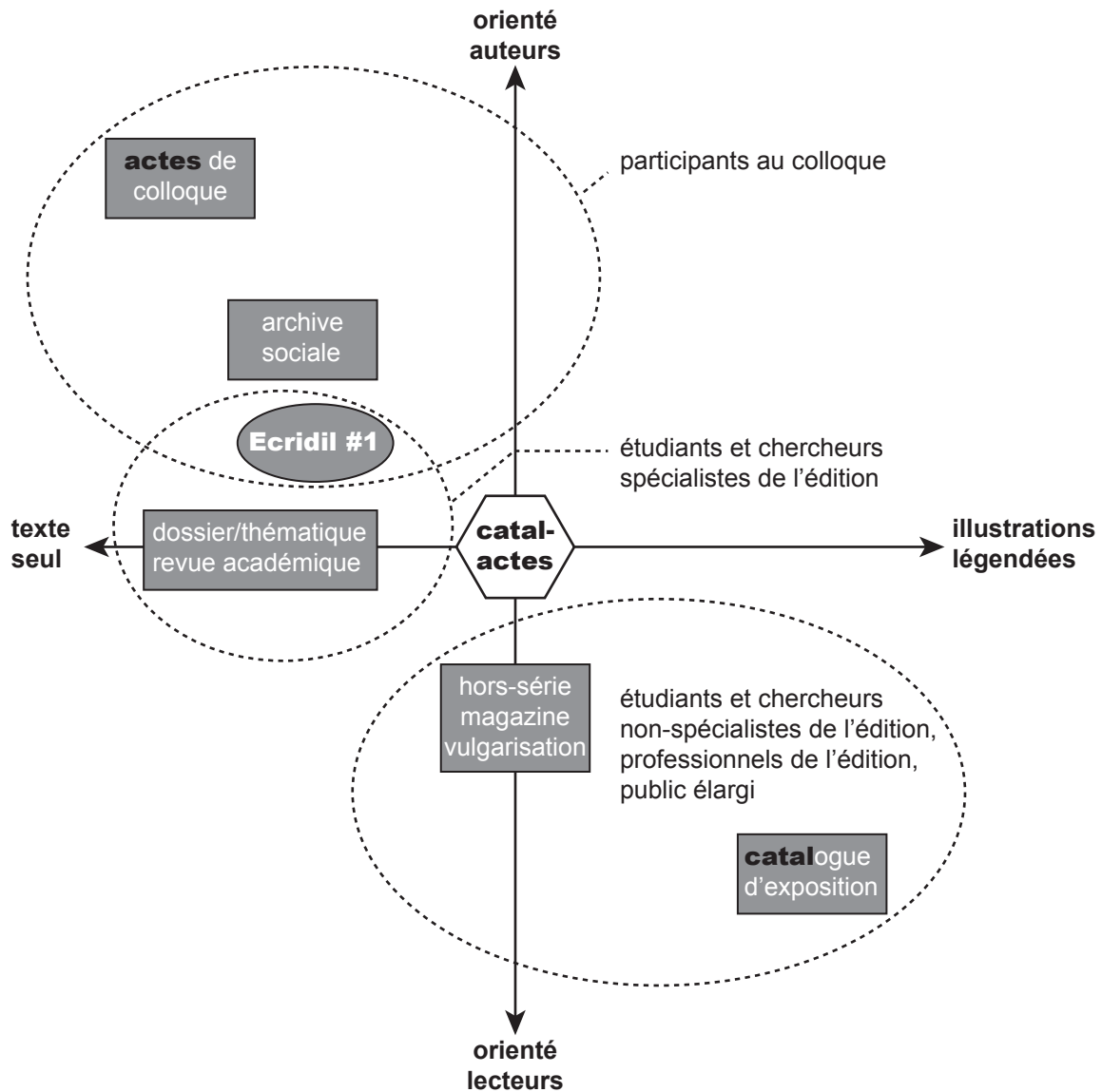


Figure 202. Cartographie éditoriale pour Ecridil

La cartographie ci-dessus et le placement de la publication du 1er congrès Ecridil sont conçues non pas comme une analyse, mais comme un schéma pour la discussion et l'échange.

En partant du haut et en allant vers le bas, en plus des auteurs, on mobilise une instance d'édition (sélection et classement) dès le niveau supérieur des actes de colloque, puis on ajoute de la rédaction (commentaires en ce qui concerne les archives et jusqu'à une réécriture partielle pour les dossiers et numéros thématiques) et jusqu'à un point de bascule qui correspond à une contextualisation plus avancée, voire une rédaction synthétique et sélective, en ce qui concerne

des publications du type des hors-séries de magazines professionnels ou de transfert, et jusqu'à des notices accompagnant un document dans les cas de catalogues ou de palmarès (du type des « Labels de l'observateur du design » de l'APCI, etc.). Ainsi, au fur et à mesure que les auteurs permettent la réécriture et la recontextualisation de leurs discours par des médiateurs le profil des lecteurs potentiellement concernés s'élargit.

Les deux formes (actes de colloque et archives sociales) dans le quadrant supérieur gauche sont devenues essentiellement numériques et en ligne et leurs formes ont été standardisées. Ainsi, ce qui est visé au niveau des textes des actes, c'est en premier lieu leur « trouvabilité » avec le corollaire souhaitable de leur « citabilité » en réseau, soit la forme canonique de l'article scientifique identifié par ses métadonnées et son DOI. L'archive sociale, constituée des traces essentiellement numériques des réseaux sociaux, a pour fonction de prendre date, c'est un pense-bête (un index sommaire, un catalogue succinct et une série de notes et de commentaires plus ou moins aléatoires de diverses sources et natures) que l'on peut retrouver sur une, ou plusieurs, des timelines de nos apps favorites.

Le quadrant supérieur droit n'a pas d'objet dans notre contexte ; il s'agirait d'une archive sociale particulièrement illustrée, assez proche d'un carnet de voyage ou d'un album photo.

Ce dont il faut discuter, ce sont des deux quadrants inférieurs et de leur articulation possible avec le quadrant supérieur gauche, et c'est ce qui figure dans les parties 2 et 3 ci-après.

Modèles commentés

Voici des questionnements volontairement non-exhaustifs et succincts pour réflexion.

Format classique ou design ?

Entre

d'une part des maquettes didactiques comme « La boîte à outils » (19 cm x 24 cm) de Dunod ou poche (12 cm x 19,5 cm) « Pour les nuls » de Pearson ou des maquettes très contraintes en petit format (13 cm x 17,5 cm) en double page comme Le livre des décisions ou plus grands (18,5 cm x 23,5 cm) comme la collection « 3 minutes pour comprendre » et des petits livres érudits comme Ecridil #1 (12,5 cm x 19 cm) aux Puf ou Quelles humanités numériques pour l'éducation ? Chez MKF (16 cm x 20 cm),

et d'autre part des formats plus grands à l'italienne (24 cm x 19 cm) pour Business Model Generation ou Le Design Thinking par la pratique chez Eyrolles,

on pourrait s'orienter vers un intermédiaire, comme celui de la collection « Basics Design » (16 cm x 23 cm) chez AVA-Bloomsbury ou This is Service Design Thinking (17 cm x 23 cm), dont les formats proches carrés impliquent presque nécessairement une mise en page du texte en plusieurs colonnes (généralement deux) qui permet de varier la maquette et les formats iconographiques.

Favoriser une ligne ou la diversité ?

Recueil de textes ou scénarisation (éditorialisation) ?

Quelle ligne veut-on privilégier – le récit du colloque, et donc la narration chronologique, organiser les textes selon une approche thématique ou varier les deux entrées pour le lecteur ?

Scénarios (avant/pendant/après)

La notion de temps se pose en des termes différents en SHS, par rapport aux STM dans lesquelles le rythme de publication et l'obsolescence des références sont rapides et se comptent en semaines ou en mois. Un des corollaires pour faire avancer rapidement la recherche sur un objet en STM est la nécessité de publier à plusieurs, ce qui est beaucoup moins habituel dans nos disciplines. Il serait donc aussi utile de réfléchir – ce que je ne ferai pas dans ces notes – à la question de l'œuvre collective si nous choissions un mode de publication moins traditionnel que ceux de nos habitus disciplinaires. Pour ne revenir au temps de publication, ce n'est pas parce qu'il est moins critique dans notre contexte qu'il n'est pas souhaitable de l'accélérer ; c'est le principe que j'adopte ici.

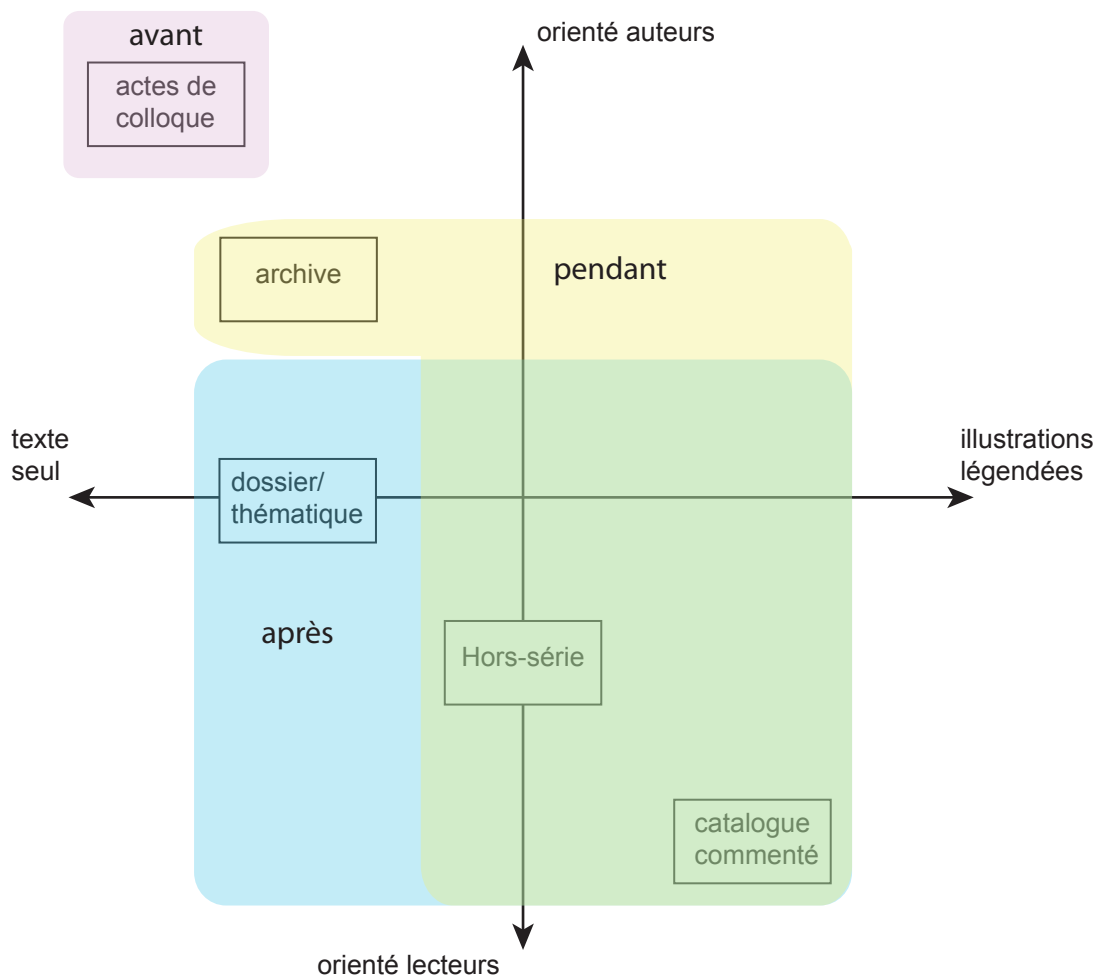


Figure 203. Cartographie chronologique pour Ecrdil

Avant

Un debrief sur l'organisation et le déroulement du colloque Ecridil #1 et sur la publication du prototype de catal-acte contribuerait à aligner le design et la réalisation de cette entreprise. Cette expérience unique devrait pouvoir servir à entretenir la dynamique d'Ecridil.

Beaucoup d'ouvrages de design et sur le design, et c'était aussi le cas d'Ecridil #1, présentent les trois éléments suivants en introduction :

à qui s'adresse l'ouvrage (auteurs↔lecteurs) ;

comment a été conçu et réalisé l'ouvrage, c'est-à-dire son contexte (cours, colloque, exposition, etc. – si le contexte est une manifestation, par une sorte de mise en abyme son making of est aussi parfois présenté) et ses éditeur(s) et rédacteur(s) (contrairement à l'édition qui peut parfois prétendre à la neutralité – en occultant l'énonciation éditoriale –, le design se revendique généralement comme une action de designer(s) qu'il s'agit de présenter) ;

comment utiliser l'ouvrage (notamment quand plusieurs entrées et/ou modes de lecture et/ou de consultation sont proposés et balisés).

Pendant

C'est grâce à l'« avant » de l'ouvrage – et donc du colloque –, qui se retrouve ainsi mis en abyme dans l'ouvrage même, que nous traitons maintenant le « pendant » sous ses deux aspects principaux :

la prépublication d'éléments. La prépublication (ou preprint) est généralement entendue comme préalable à une publication définitive imprimée (du pre-print au print). Pour Ecridil, je propose une publication définitive pré-colloque avec l'attribution de DOI et le dépôt dans une archive de publication scientifique. Les avantages seraient de pouvoir proposer (i) aux intervenants et aux participants une version imprimée des contributions réunies sous forme d'actes en précommande ou pendant le colloque (tirage numérique court et/ou impression à la demande), (ii) aux participants la lecture des contributions avant les interventions où elles seront présentées afin d'enrichir les échanges, (iii) aux intervenants une labellisation rapide des papiers pour ceux qui ont besoin de références de publication pour leurs dossiers académiques, etc.

l'organisation du « pendant ». Une meilleure connaissance de la substance des interventions permet aux organisateurs d'en améliorer la forme et de faire des propositions pour mieux rythmer le colloque et scénariser chaque événement en son sein. C'est aussi la possibilité éventuelle d'organiser un « booksprint » pour publier le livre Ecridil en temps réel et le proposer soit à l'issue soit quelques jours ou semaines après sa conclusion. C'est, en tous cas, la potentialité effective de réduire les délais de publication.

Après

La publication des actes et du « livre du colloque » d'Ecridil #2 ne sont-ils qu'un début ou la continuation d'un commencement initié avec Ecridil #1 ?

Il me semble que des exemples de questions à se poser – qui ne s'excluent pas les unes les autres – et afin de formuler un brief design pour l'organisation et la publication du colloque pourraient être :

Comment consolider la dynamique d'Ecridil auprès des communautés de chercheurs concernés en les impliquant au maximum ?

Comment associer un public plus large (étudiants et professionnels) que les chercheurs en SIC et en design à la dynamique d'Ecridil afin de produire des résultats concrets ?

Comment sensibiliser le grand public aux enjeux sociétaux abordés par Ecridil et lui donner envie de s'engager ?

3. Réunion du comité d'organisation, 11 janvier 2018

Participants : René Audet, Renée Bourassa, Tom Lebrun, Jean-Louis Soubret, Oriane Deseilligny

Par Skype

Présentation de leurs propositions par RA et JLS (cf. mail préalable de RA)

Par rapport à l'expérience Ecridil #1, les actes de colloque pourraient adopter des standards numériques et l'imprimé être plus original. Le colloque était plus intéressant par son animation, que du point de vue de la profondeur restituée des échanges.

Pourrait-on aller plus loin que des actes de colloque ?

Il s'agirait plus de faire avancer la thématique que de dresser un état des lieux. On pourrait inviter d'autres collaborateurs que les participants au colloque.

Je suis d'accord sur la question de la nécessité d'une documentation, de constitution d'archives du colloque.

On a, par ailleurs, un projet de plateforme en ce qui concerne le livre.

L'édition papier pourrait être destinée à un public non académique et l'édition numérique plutôt aux chercheurs.

Oui, les deux usages sont relativement autonomes.

Les scénarios conséquents doivent tenir compte de nos moyens, c'est-à-dire d'un budget limité. La publication numérique pourrait être envisagée comme un double site (inventaire, porte d'entrée) avec un basculement entre les textes (actes) et une banque de données des objets commentés, pas uniquement comme un container numérique.

La publication papier pourrait être plus synthétique, ciblant les objets et les résultats/conclusions des communications, visant un public non universitaire (professionnels, décideurs). Cela pourrait être un « livre blanc » sur le sujet ou se présenter comme une synthèse à la suite de l'événement (sans être des actes).

Oui, il faudrait rendre l'information dynamique. Comment faire dialoguer les textes ?

Désir d'un imprimé solide, avec une fonction de pérennité, fondé sur des textes longs, retravaillés.

Dans ce projet, on pourrait avoir un exemple de design, un prototypage.

Le numérique est parfait pour textes courts [NDR de quelle taille ?].

Sur le papier, comment articuler une réflexion ? La publication papier pourrait être plus expérimentale : un livre augmenté par exemple. Ces augmentations sont de deux ordres : d'une part l'hybridation papier/numérique et, d'autre part, la ramification vers d'autres contenus que ceux

du colloque, par ex. des liens qu'un intervenant souhaiterait ajouter a posteriori de sa présentation.

L'augmentation est limitée par des questions de moyens et de temps.

A priori, nous avons envisagé une publication très rapide. Une publication dans les jours qui suivent le colloque pour une stabilisation des contenus et leur diffusion rapide.

Si on ne fait pas de publication dans cet horizon, le colloque risque de rester un événement éphémère (et l'éventuelle publication en sera détaché, de même que les contenus pourront souffrir de leur obsolescence rapide).

L'idée que le numérique serait nécessairement court est une idée problématique qui circule et pose question.

Le papier prend plus de temps et c'est important d'avoir une pensée plus développée.

Telle partie du site pourrait se présenter en mode conversation avec des textes courts. Dans d'autres, des textes plus longs seraient possibles.

On doit laisser à l'imprimé la place pour le temps long et je suis favorable à la publication dans un temps court.

Un des intérêts du numérique est dans l'augmentation. La forme numérique brute passe beaucoup moins bien dans l'imprimé (cf. retranscription des tweets dans Ecrdil 2016).

Il serait opportun de laisser la place à des personnes qui n'auraient pas pu se déplacer ; la possibilité de (continuer à) construire un dialogue.

Un canevas pourrait être proposé à chacun des participants pour faciliter l'alimentation d'un livre blanc à partir d'une matrice (quels sont les résultats/conclusions de vos travaux, dont il faut assurer la visibilité/circulation ?)

La publication pourrait être double : une synthèse/livre blanc en parallèle d'actes numériques, puis un ouvrage collectif fondé sur des textes retravaillés, excluant les communications plus excentrées et appelant d'autres contributions de non-participants au colloque.

C'est une bonne idée d'effectuer un travail de préparation en amont.

La retranscription des tweets pose problème quand on s'attend à une certaine profondeur. Il faut éviter les effets flash, l'effet waouh.

L'attachement des jeunes étudiants français pour le livre papier est étonnant, ce n'est pas nécessairement le cas en Amérique du Nord. Sur un projet, ils avaient proposé d'amener la communauté, le collectif au cœur du livre. Le livre pourrait s'envisager comme un déclencheur de conversations après le colloque. Cela va dans le sens de notre projet de recherche avec René.

Il serait utile de réfléchir sur ce type de publication en termes de design.

Je suis aussi surprise de l'attachement continu des étudiants au livre papier, y compris pour ceux qui utilisent Wattpad tous les jours.

A propos de l'idée de communauté au cœur du livre, Kobo est un exemple (certes pas papier) dans lequel les annotations des uns et des autres se retrouvent dans les lectures de chacun.

Plusieurs approches sont possibles. On peut notamment ouvrir au maximum et partir en brainstorm pour générer un maximum d'idées, puis les confronter aux contraintes dans un exercice de synthèse soustractive afin de construire une proposition de publication viable. On peut aussi partir du budget et des bonnes volontés mobilisables pour réfléchir à un Minimum Viable Product (MVP) et ensuite y adjoindre une liste des souhaitables (nice to have) dans un exercice de synthèse additive.

Il est par ailleurs nécessaire de préciser le rôle du comité de publication comme instance et les rôles et volonté d'investissement de chacun de ses membres.

Dans notre projet de recherche, on a envie, et c'est l'objectif, de réfléchir à un projet ambitieux. Je suis d'accord pour partir de format minimal ; soyons bottom up pour obtenir un résultat rapide et réfléchissons à organiser une croissance organique.

On lancerait le projet dans un cycle rapide, puis le matériel produit nous servirait aussi dans un cycle d'expérimentation, notamment dans le contexte de notre projet de recherche.

Je veux être active, c'est un objectif prioritaire dans le cadre d'un projet de recherche et d'un cours. J'ai obtenu une subvention de 10 000 \$ canadiens pour produire un cours expérimental sur le livre avec une idée de communauté. Une étudiante du M2 édition numérique de Valenciennes va y travailler et les laboratoires de Marcello et de Bertrand à Montréal sont partenaires.

Pour revenir à la proposition minimale et à l'articulation de l'avant/pendant/après, le site web pourrait proposer des entrées avec la présentation des objets étudiés, à partir de 3 ou 4 questions, de sorte d'entamer la réflexion sur les objets du colloque.

Il faut se mettre en position de produire très rapidement un résultat et laisser la possibilité aux soumissionnaires de choisir leur forme de contribution et la latitude en termes d'éditorialisation, voire de réécriture, qu'ils délégueraient à leurs pairs et/ou à une instance éditoriale.

Qu'en est-il de la possibilité de récupérer les papiers le jour même ou avant ?

La formule de H2PTM est de récupérer les papiers en amont et de fournir les actes le jour même du colloque.

Le problème, c'est que les actes de H2PTM ne rendent pas compte des plénières.

Il serait cependant souhaitable d'obtenir les textes une ou deux semaines avant le colloque Ecrdil 2018.

Demander les textes avant, c'est se mettre la pression pour une publication simultanée, alors que nous avons déjà la responsabilité de gérer l'organisation du colloque lui-même.

Un autre risque, en pratique, de demander aux participants des textes publiables est que les contributeurs concentrent leurs efforts sur la rédaction et non sur le contenu (et sa présentation), les conduisant plutôt à lire leur texte à voix haute pendant le colloque.

On pourrait se limiter, dans certains cas, à ne publier que la présentation numérique.

Quand on n'a que le texte, on perd l'oral. On pourrait retranscrire des échanges tenus à l'oral, combiner les deux.

Il serait intéressant de réactiver la plateforme « dialogue », cf. avec Stéphane qui s'en occupait et lui demander de rendre compte du taux de participation, du succès de l'initiative. (Quel est son post mortem ?)

Un kit, une formule « tout fait d'avance », pourrait permettre aux participants de se mettre dans le bain du colloque plus vite

3 propositions :

s'inspirer de l'expérience d'acteurs comme The Conversation pour évaluer s'il est souhaitable, et jusqu'où, de réécrire les contributions des chercheurs pour les rendre plus accessibles et celles des professionnels ou des étudiants moins habitués à écrire pour mieux les contextualiser et les structurer ;

évaluer les différentes propositions du comité de publication sur une cartographie autour des deux axes (entre des pôles plus et moins subjectifs) de l'impact et de la facilité de les mettre en place (contraintes de budget et de temps) ;

demander à chaque membre du comité de publication, et pourquoi par élargir cette demande au-delà, un ou deux exemples de publications papier et/ou en ligne exemplaires de ce vers quoi il faudrait tendre et, à l'inverse, deux ou trois cas repoussoirs de ce qu'il faudrait éviter.

Ce serait bien que la signature design soit présente, que l'on accorde de l'importance au visuel. Une idée serait de faire des entrevues sur place ou en marge, à la volée, en plus des événements du colloque, pourquoi pas sous forme audiovisuelle ?

Dans Ecridil 2016, j'avais beaucoup aimé les moments actifs d'ateliers design. Cela aurait été intéressant qu'ils aient été enregistrés, qu'on ait des traces, ces sont des moments design. En design, on aime condenser des moments en temps très limité.

Effectivement les ateliers étaient stimulants, au-delà des démonstrations de stand.

Aussi l'idée de faire bouger le corps, cela fait du bien, on s'évite la somnolence de l'écoute passive.

Faut-il annoncer les thèmes d'ateliers, de brainstorm, avant le colloque ou surprendre les participants sur place ?

Le design thinking devrait imprégner le colloque.

L'idée serait d'animer une communauté et le défi de trouver comment capter cela, cet esprit.

En synthèse, des questions vives

Un consensus semble formé autour de la nécessité d'anticiper l'organisation du colloque et que cette aventure fasse partie intégrante du projet éditorial d'Ecridil. Est-il possible de faire vivre l'esprit design pendant le colloque, et comment, comme cela avait été le cas pour l'édition 2016 ? Comment le restituer de manière plus profonde que l'édition 2017 ?

Un consensus se dégage autour de l'archivage numérique des textes. Où les stocker et comment y accéder (est-ce un site, une plateforme dédiée ou un dépôt sur un ou des sites tiers ...) ?

Un consensus se dégage sur l'intérêt d'une édition imprimée. Faut-il un lien entre les éditions numérique et papier du colloque, si oui comment l'articuler ?

Un consensus se dégage autour des notions d'oralité des communications (versus la lecture à haute d'un texte rédigé) et de qualité visuelle des présentations (versus du texte seul). Comment à la fois favoriser une expérience design pendant le colloque et en restituer l'esprit dans une publication ?

Un consensus a émergé sur une publication rapide. Faut-il se mettre la pression pour publier avant et/ou pendant le colloque ou se donner quelques jours après ? (dans l'esprit d'un bookprint/hackathon)

Un consensus a émergé sur une approche additive partant d'une proposition minimale sur laquelle se grefferait, selon les contraintes de moyens, des évolutions plus radicales. Quelle est la proposition minimale et de quoi serait constitué un livre augmenté (un livre hybride et/ou un livre communiquant) ?

Est-il souhaitable, et comment, d'articuler la publication du colloque avec des projets parallèles ?

4. Compte rendu de réunion du comité d'organisation, 23 janvier 2018

Participants : René Audet, Renée Bourassa, Oriane Deseilligny, Bertrand Gervais, Tom Lebrun, Stéphane Vial, Marcello Vitali-Rosati

Ordre du jour :

Publication rapide d'une édition papier ? Sous quelle forme l'envisage-t-on ?

À quoi tient-on minimalement ? (idée du Minimal Viable Product)

Quels contenus, quels publics ? (perspective de transfert, résultats/conclusions, publics professionnel et politique ?)

Moyen/support/formule/lieu des actes atypiques (rapide + numérique)

Conclusions de la réunion :

Nous optons pour une plateforme numérique en amont (sous la coordination de Servanne Monjour), laquelle permettrait d'alimenter ensuite une première publication papier ou numérique rapidement après le colloque. Il est envisagé de collecter très prochainement les documents, livres et plateformes étudiés par les intervenants.

La première publication papier sera financée (en partie ?) par la subvention Connexion du CRSH, et pourra être suivie d'une seconde publication, enrichie et répondant aux exigences académiques, qui serait produite dans le cadre du projet Expérialité et design du livre en contexte numérique (CRSH, Bourassa et Audet – financement complet à discuter).

Dans cette dynamique, il s'agira de garder en tête l'importance d'une complémentarité entre les supports papier et numérique, afin que les deux dynamiques puissent se répondre et s'enrichir mutuellement.

Points abordés lors de la réunion :

[quelques premiers échanges à bâtons rompus n'ont pas été notés]

Un booksprint ne pourrait fonctionner que s'il y a une collecte préalable de données, laquelle permettrait toutefois une publication plus complète en aval. Il privilégie le format papier, qui aurait une meilleure pérennité qu'une plateforme numérique.

En l'état, nous sommes d'accord pour garder une trace numérique du colloque après son déroulement. On pourra ainsi créer une archive web de l'évènement, laquelle présenterait un caractère anthologique des documents, livres et plateformes étudiés par les intervenants. Ces données pourraient être collectées dès maintenant auprès des participants, ce qui leur permettrait de s'approprier ces éléments en amont. Après le colloque, cette archive pourra toujours être enrichie des documents finis (textes des présentations, présentations numériques, captations vidéo). Une telle présentation de contenu offrirait donc deux moyens de naviguer, soit par le programme de l'évènement, soit par les objets d'étude eux-mêmes. Au delà de cette archive numérique, deux types de publications papiers sont envisageables. Il y aurait d'abord celle du booksprint, une publication rapide mais très dépouillée qui serait destinée à un public professionnel, une sorte de livre blanc qui présenterait les conclusions du colloque. Dans un deuxième temps pourrait advenir une publication scientifique plus solide et détaillée, avec des textes retravaillés et incluant des chercheuses et chercheurs qui n'étaient pas nécessairement présents à l'évènement.

Il serait intéressant d'inclure dans la publication numérique des outils d'annotation et de conversation dans le genre d'hypothes.is (<https://web.hypothes.is/>). Il faut également prendre garde à la complémentarité entre numérique et papier pour la publication de ce colloque – point sur lequel le rejoint Bertrand Gervais – et garder en tête qu'ils autorisent des approches différentes (le numérique permet ainsi le multimédia, le non linéaire et les renvois externes, tandis que le papier permet de son côté la linéarité). Il ne faut pas non plus oublier que le numérique peut

aussi être pérenne si la publication entre dans des mécanismes institutionnels d'archivage (par exemple sur archive.org, sur erudit, etc.).

Nous pourrions également songer à la possibilité de mettre en œuvre un livre augmenté, ce qui pourrait enrichir les propositions.

- La discussion se poursuit sur la dimension numérique de la publication. La plateforme Dialoguea.fr (<https://www.dialoguea.fr/#/>), qui a été utilisée lors d'Écridil 2016, est mentionnée. Elle permet de commenter et de débattre d'un contenu en ligne, copiant-collant des extraits des abstracts et permettant aux invités de commenter ces derniers. Toutefois, son utilisation a été peu nourrie pendant le colloque. Il faudra faire attention au temps passé sur ces travaux avant le colloque ; de nombreux participants subiront le décalage horaire et discuteront surtout des sujets du colloque de manière informelle. Il est très probable que la majorité des ressources soient surtout mobilisées après le colloque, car la publication nécessitera de gros investissements humains.

Afin que les financements ne se recoupent pas, ce que les organismes subventionnaires refusent, les deux publications papier seront financées par des entités distinctes.

Pour résumer, le comité va mettre prochainement en place une équipe de travail. Comme proposé par Marcello Vitali-Rosati, Servanne Monjour va pouvoir prendre le leadership sur le site web du colloque. Les efforts seront très probablement coordonnés par Jean-Louis Soubret, comme ce dernier l'a proposé.

5. Projet éditorial, réflexions diverses, 23 décembre 2018

Oriane Deseilligny

Ma réflexion à partir de l'ouvrage *Quelles humanités numériques pour l'éducation?*, édité par Michaël Bourgatte, Mikaël Ferloni & Laurent Tessier, MKF éditions, 2016 « ouvrage collaboratif édité en temps réel »

Particularités de l'ouvrage : les conférences ont été retranscrites à partir d'une prise de notes collaborative sur Framapad.

Vidéos des conférences accessibles par QR Code sur Youtube

Les plus de cet ouvrage

- Le format, rectangulaire, poche, bonne « main »
- le papier : épais, couleur ivoire
- Discours tenus sur les réseaux sociaux pendant la conférence intégrés à la mise en page : tweets en marge des articles : parfois intéressants quand plus synthétiques que la prise de note

collaborative. Ne pas mettre les tweets, comme pour Ecrdil #1 à part : l'outil perd son sens et son intérêt s'il est détaché du discours qu'il commente/restitue.

Les éléments à éviter

- Pour certaines pages (noires) : le contraste négatif caractères blancs sur fond noir : difficile à lire sur papier et illisible sur écran (typo à empattements sans doute pas du tout adaptée d'ailleurs).

- La retranscription synthétique des conférences par plusieurs auditeurs : prise de notes collaborative + minutage parfois. L'idée est intéressante (voir ce que les auditeurs ont retenu, sélectionné dans le discours) mais la lecture en est éprouvante car la forme est très fade :

Beaucoup de reprises de la formule « il y a » pour introduire une idée. A la limite, mieux vaut se cantonner aux notes et ne pas se livrer à une pseudo-réécriture bancaire. Forme inégale, qui manque d'homogénéité de ce fait et pas très agréable à lire.

Sur le plan formel : la rapidité d'édition pose des problèmes formels : orthographe pas corrigée dans les tweets et dans les prises de note. Crée une déception à la lecture par rapport à l'horizon d'attente d'un livre imprimé.

Au-delà de cet ouvrage, réflexion diverses pour l'édition d'Ecrdil#2

Eléments à reprendre :

mise en page sur plusieurs colonnes, car permet de faire varier la maquette. Attention colonnes ne doivent pas être trop étroites (elles le sont dans Quelles humanités numériques pour l'éducation ?).

alternance textes rédigés et entretiens, scansion dans la maquette et autre modalité de lecture et d'écriture (cf. Ecdridil #1)

Design et ergonomie intéressants du sites web des Cahiers virtuels de la Chaire de recherche sur les arts et la littérature numériques (<http://nt2.uqam.ca/fr/cahiers-virtuels>). Mais penser à ajouter, en plus :

- la possibilité de télécharger un article/doc en pdf

- un sommaire textuel en plus de l'effet mosaïque des images introduisant aux articles.

6. Entretien par skype, 8 février 2018

Participants : Servane Monjour et Jean-Louis Soubret

Publication traditionnelle de vrais articles prévue à plus long terme.

Site simple et low tech

Avant le colloque, envoi d'une fiche-objet par intervenant, description pour créer un répertoire des objets. Prépublication et animation en ligne de la responsabilité de Servanne

Pendant : Pad de prise de notes collectif avec affichage en direct à l'écran

Implémenter hypotes.is (nous le testons dans le cadre d'un séminaire ; ça ne fonctionne pas terrible en terme d'utilisation : soit les gens discutent dans leur coin, soit ils n'osent pas...)

Twitter et réseaux sociaux (par ex. Instagram)

Groupe d'étudiants actifs à la Chaire « écritures numériques »

5 stagiaires en édition à "Sens public"

On a l'habitude d'enregistrer et de faire du streaming sur les événements ; l'image est assez moche, mais le son est bon

Multiplions les formes médiatiques

Notre développeur a conçu des outils maison pour des colloques, mais compliqué

Caler un séminaire avec les 5 étudiants ?

Sur papier

Publication papier

7. Courriel à René Audet et Servanne Monjour, 16 février 2018

Expéditeur : Jean-Louis Soubret

Destinataires : René Audet et Servanne Monjour

En peu de temps, j'ai commencé deux tests pour préparer la publication d'Ecridil. Les deux portent sur des vidéos diverses (de courts moments) et surtout sur la vidéo suivante (un trentaine de minutes, en anglais) postée sur YouTube : <https://www.youtube.com/watch?v=UoEozw-xg0M&feature=youtu.be>

Le premier test est sur Google StoryBoard

Avantages

- solution gratuite
- traitement très rapide

Inconvénients

- l'application StoryBoard n'est disponible que sur Android
- la définition des images est basse (72 dpi)
- traitement et rendu aléatoire non paramétrables ; cela limite l'utilisation des planches à une fonction d'« ambiance »

Le second test est sur la fonction « transcription » sur YouTube

Avantages :

- solution gratuite
- disponibilité en ligne rend l'application agnostique du point de vue des OS
- texte disponible avec ou sans timeline (au choix)
- sur l'exemple de la vidéo choisie (en anglais), la transcription est étonnamment fidèle. A-t'elle été améliorée manuellement ?

Inconvénients :

- sur certaines vidéos postées, les fonctions « sous-titrage », « traduction » et « transcription » ne sont pas actives. Est-ce un paramétrage amont au moment du dépôt ?
- en français, les résultats sont contrastés (ils semblent dépendre des conditions techniques de captation et d'éventuels accents ;-) par ex. Marcello Vitali-Rosati et Matteo Treleani dans https://youtu.be/FCnOeWkY_Kw), la transcription peut beaucoup perdre en fidélité
- traitement quasi simultané

A faire

tester la transcription YouTube lors de diffusion en direct sur une chaîne YouTube. On pourrait ainsi évaluer la qualité de transcription et éventuellement effectuer des réglages techniques pour l'améliorer.

8. Note d'intention à René Audet et Servanne Monjour, 8 mars 2018

Rédacteur : Jean-Louis Soubret

Destinataires : René Audet et Servanne Monjour

Quelques éléments liminaires

Points de consensus

Nous avons un consensus sur les points suivants :

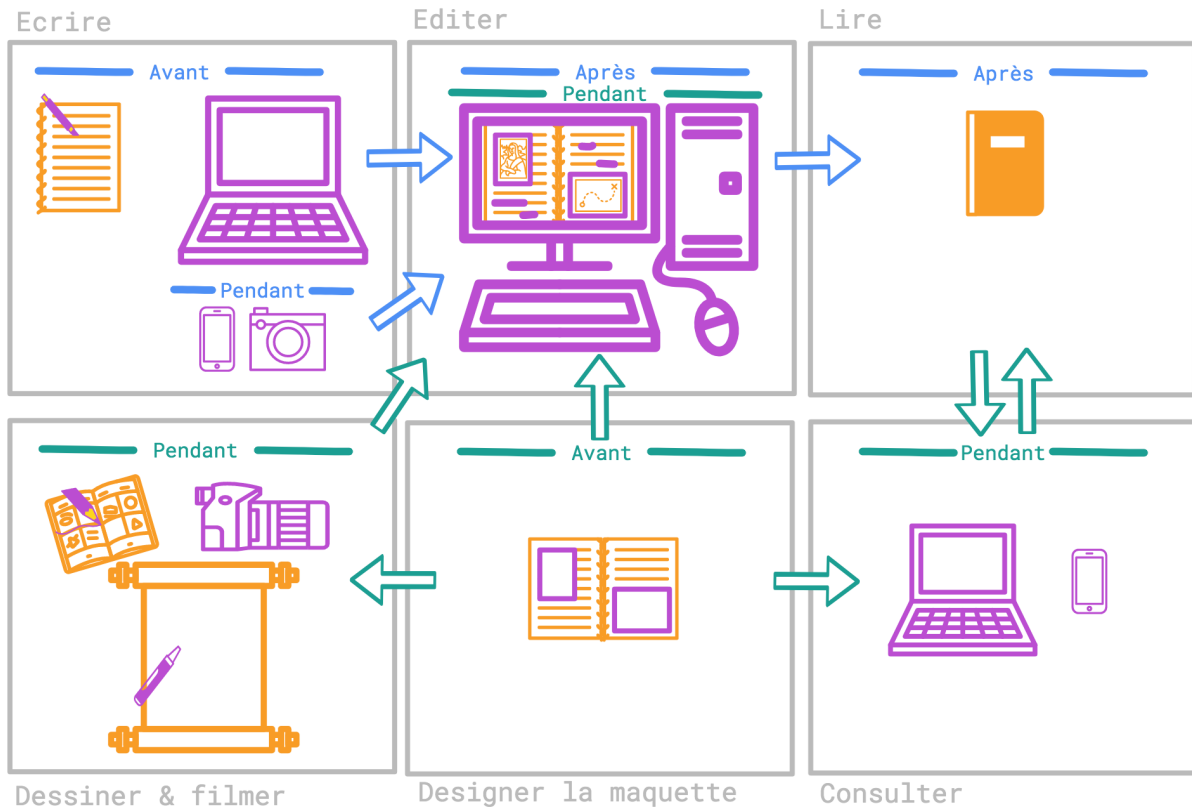
- utilisation de méthodes et d'outils simples et disponibles (tests de Google StoryBoard, Google AutoDraw et fonction « transcription » de YouTube) ;
- ne demander qu'une fiche simple aux auteurs avant le colloque (photo, courte biographie, thème de leur intervention) ;
- publier le plus vite possible à l'issue du colloque.

Rapide état des lieux éditorial d'Ecridil #1

La publication du #1 était littéralement organisée en trois parties reprenant successivement « écrire », « éditer » et « lire » (cf. Figure 204). A part les deux textes introductifs, les vingt autres sont peu édités et rarement illustrés ; ce sont des fragments relativement bruts d'une dizaine de pages chacun (soit environ 15 000 signes). Les textes sont de natures variées : entretiens, recueil de posts, interventions rédigées et compte rendu d'ateliers par leurs concepteurs-animateurs.

Pour ce qui concerne l'ambition de publier un « catalacte », il s'agirait plutôt d'actes que de catalogue (aux sens où, par rapport aux catalogues, le format du livre est beaucoup plus petit, la maquette en une colonne beaucoup plus simple et sans gabarit, l'impression est numérique noir et blanc et la typographie peu élaborée).

ECRIDIL #1



ECRIDIL #2 (augmentations du #1)

Figure 204. Ecrdil #1 et augmentations possibles pour le #2

Comment mieux publier Ecrdil #2 ?

Pistes et réflexions

L'initiative Ecrdil semblant avoir vocation à se pérenniser, il pourrait être intéressant d'y associer en parallèle un dispositif éditorial qui aurait vocation à simplifier et à accélérer la publication et à s'améliorer à chaque édition en capitalisant sur les acquis des précédentes. C'est par exemple, ce que font les organisateurs des congrès de design internationaux Cumulus.

Parmi les acquis les plus significatifs du #1, on pourrait conserver les deux caractéristiques suivantes :

- la brièveté des textes ;
- la variété des formes.

Pour mieux traduire l'ambition formelle de catal-acte, c'est-à-dire d'une part à la fois une liste méthodique (les objets et leurs notices) et une ambition visuelle, esthétique dans le contexte, par exemple, des catalogues d'exposition, et d'autre part une volonté d'action, de faire et pas seulement de penser, de représenter la réflexion en action, la discussion ; on pourrait « augmenter » le livre des manières suivantes :

Dessiner & filmer

mieux capter et/ou plus systématiquement le contenu des conférences et des ateliers. La matière ainsi collectée pourrait être utilisée de plusieurs manières : post des vidéos intégrales sur YouTube, transcription automatique de l'audio en texte via YouTube (avec relecture et correction nécessaires si l'on veut publier les textes) et utilisation de fragments ainsi obtenus pour publication après curation, possibilité de créer automatiquement à la volée des « planches d'ambiance » via StoryBoard, etc. ;

faire éventuellement appel à des designers et/ou graphistes pour « croquer » ou « scrire » (création de fresques à partir d'un vocabulaire graphique et typographique) les événements en direct. Les dessins peuvent être photographiés ou scannés (par ex. avec l'app CamScanner disponible gratuitement sur portable) pour être publiés.

Designer la maquette

le format « portrait » (plus haut que large) 12,5 cm x 19 cm du #1 est trop petit et peu adapté à l'iconographie. Des formats plus grands et plus carrés, voire à l'italienne conviennent mieux aux illustrations dans un rapport texte-image plus harmonieux ;

un gabarit pourrait être créé afin d'optimiser les illustrations en demandant et en s'organisant pour recueillir des illustrations aux bons formats plutôt que d'avoir à les redimensionner a posteriori. Ce gabarit serait aussi utile pour anticiper le calibrage des textes ;

une réflexion sur la typographie et les niveaux de titres et d'intertitres serait souhaitable pour faciliter la mise en page, mais surtout rendre la lecture plus agréable et chaque double-page plus esthétique.

Consulter

au-delà de la fonction déjà remplie par le livre #1 de donner à lire (lecture intensive), on pourrait envisager des pistes de lectures plurielles (extensives), donner à voir et permettre une consultation plus balisée, c'est-à-dire une lecture non-linéaire ;

la disponibilité de toute ou partie de la publication sur le web permettrait notamment d'autres modes d'accès et la faculté de poster des commentaires. Il s'agirait d'envisager la publication comme un début – celui d'un dialogue avec les lecteurs –, et non une fin. Ce serait un moyen de recueillir des feedbacks pour co-construire des éditions futures plus en phase avec les attentes de nos lecteurs, de fédérer une communauté des gens intéressés par Ecridil.

Rendre Ecridil plus interactif par design

Il s'agit de s'interroger sur les différentes parties prenantes et sur leurs rôles. Le sens de lecture de la Table 14 ci-dessous est chronologique, mais il est aussi en boucle car l'« après » d'Ecridil #2 est conçu comme une préparation à l'« avant » du #3, et ainsi de suite dans une logique de feedbacks récursifs.

Table 14. Approche diachronique du processus éditorial proposé pour ECRIDIL #2

Quand	Avant		Pendant			Après
Quoi	Ce qui a été écrit et dessiné	Ce que nous avons designé	Ce qui a été dit et vu	Ce qui a été entendu	Ce que nous avons retenu	Ce qui a été lu et consulté

Qui	Les auteurs	Les éditeurs	Les intervenants et les participants	Le public, les animateurs, (les facilitateurs graphiques?)	Les éditeurs	Les lecteurs
Comment	Prise en compte des feedbacks des éditions précédentes		Captations vidéos et photographiques	Posts sur les réseaux, prises de notes, entretiens, croquis, etc.	Curation des contenus, synthèses, mises en page et publication	Feedback par commentaires, évaluations, citations

La caractéristique principale du #2 est l'importance accordée au « pendant », cohérente avec une inclinaison revendiquée à faire autant qu'à réfléchir, à favoriser la pensée en action, la discussion.

Objectifs pour Ecrdil #2 et la suite

Présentation libre de propositions à discuter pour co-construire les objectifs éditoriaux de la publication des catal-actes :

- une ébauche, la réflexion en train de se faire ;
- donner à voir, donner à lire (quelle hiérarchisation relative de ces deux termes ?) ;
- pour donner envie d'une lecture extensive d'une autre publication plus exhaustive (augmentée, en ligne..?) ;
- montrer l'invisible, le derrière de la scène, l'impensé... ;
- état de l'art et/ou du non-art : ce que nous savons (explicitation d'un bien commun) ; ce que nous savons que vous savez (implicite, impensé...) ; ce que vous ne savez pas que nous savons (inédit) ; avec ouverture possible vers ce que nous ne savons pas (et sur lequel nous pourrions collaborer pour faire émerger des connaissances) ;
- inventer une forme au-delà des stéréotypes éditoriaux en créant des prototypes de catal-actes avec la visée de concevoir un archétype pour Ecrdil.

9. Courriel de René Audet, 14 mars 2018

Expéditeur : René Audet

Destinataires : Jean-Louis Soubret et Servanne Monjour

Je reviens sur quelques points :

- à moins d'avis contraire de la part de Servanne (qui en sera la cheville ouvrière), je ne pensais pas aller en quête des photos et notices bio des présentateurs... je pensais leur demander, sur une base volontaire, de donner un descriptif de l'objet dont ils parleront, pour publication sur le site web du colloque... quel usage associais-tu à ces photos/notices ?
- captations vidéo versées en StoryBoard, transcription d'échanges... je me demande ce qu'on y gagnera précisément – c'est un ajout qui donne de la personnalité au projet, certes, mais qui

peut difficilement transcrire ce que le colloque a permis de mettre de l'avant, d'avancer sur l'enjeu qui nous réunit.

- dans ce planning, il me semble manquer la ligne directrice de la publication, à partir des questions que nous avons précédemment évoquées : quels contenus ? pour quel public ? je crains qu'on en vienne à produire un objet de mémoire de l'événement (dans la nostalgie de ses anecdotes et des situations vécues, donc à public très restreint) plutôt que de viser à transcender l'événement et à ouvrir sur cet inédit que tu évoques en toute fin de document.

La publication en ligne des captations, des présentations numériques et des notes des conférenciers sera un complément évident à cette publication, et il faut justement viser une complémentarité (plutôt qu'une redondance).

Il y a une orientation forte de l'ouvrage papier à établir et à transmettre, pour éviter que la discussion parte dans tous les sens. Je te signale à cet effet qu'on a prévu, après le lunch de la deuxième journée, une plage d'une heure pour un atelier d'idéation collective (en parallèle à la visite des stands de certains participants) qui pourra servir immédiatement au travail sur le projet de publication.

Équipe éditoriale : Servanne est ton interlocutrice sur ce point, sans nul doute ! Côté finances, il faut attendre de voir la suite des choses (pour voir quel montant se dégage en regard des autres postes budgétaires), mais on ne sera pas dans une situation de luxe... il faut planifier avec cette contrainte en tête.

Pour les prestataires, dis-nous un peu comment tu envisages les choses ? Personnellement je travaille sur un modèle de diffusion libre en pdf et impression d'ouvrages papier à la demande (), ce qui fonctionne très bien – ça libère des lourdeurs de la distribution. Mais c'est évidemment peu orthodoxe et les ouvrages sont absolument invisibles en librairies... La question : est-ce une visée que nous nous fixons ?

10. Proposition de déroulé de l'atelier, 1er mai 2018

Jean-Louis Soubret

Disposition : un espace suffisamment grand pour accueillir tout le monde et partitionnable en 10 espaces de groupes ou sinon 10 salles attenantes.

Équipe d'animation : 1 maître du temps et 10 animateurs

Participants : 60 à 90 personnes

Groupes : 6 à 9 personnes avec un animateur

Début	Durée	Quoi	Comment	Qui
13:30	00:10	Introduction par comité éditorial et maître du temps (du rythme, cf. clapping islandais)	Présentation des objectifs, du contexte et de l'organisation de l'atelier	Plénière
13:40	00:20	Formalisation du brief	De quoi a t'on parlé ces deux jours ?	Groupes
14:00	00:15	Validation du/des brief(s)	Mise en commun des briefs	Plénière
14:15	00:15	Idéation individuelle	Merlin (3 idées x 3 tours)	Groupes
14:30	00:10	Pause Un groupe de volontaires moins nombreux finit l'atelier.		
14:40	00:20	Groupement et classement des idées	Matrice facilité/impact	Plénière
15:00	00:05	Introduction des contraintes par le comité éditorial	Temps d'édition Budget disponible Équipe dédiée	Plénière
15:05	00:15	Idéation collective	Brainstorm	Groupes
15:20	00:20	Formalisation d'un concept de livre	Titre Argumentaire Organisation générale (chronologique, thématique, indicielle...) Contenus	Groupes
15:40	00:10	Test de concept	X (en fonction du nombre de volontaires) présentations muettes de 5 minutes croisées par duo de groupes	Intergroupe
15:50	00:10	Pause		
16:00	00:45	Prototypage	Forme et contenu : titre, argumentaire commercial, chemin de fer, exemple de double-page, etc. Diffusion : points de contact, publics pressentis, format, prix, etc.	Groupes
16:45	00:05	Mot de la fin	Synthèse à chaud et rappel des prochaines étapes	Plénière
16:50	Fin de l'atelier – Place au cocktail !			

Brise-glace

2 visuels (ou vidéos si possible de les montrer avec le son) :

supporters Nord-Coréens aux J.O. 2018 de Pyeongchang (coordination)
supporters Islandais à l'Euro de football 2016 en France (coordination + rythme)

Matériel

20 paquets de notes repositionnables (post it),
10 tableaux ou support de blocs de papier (avec leurs blocs),
10 x 3 feutres marqueurs (de couleurs différentes),
4 rouleaux de papier kraft ou équivalent de plus de 1m20 de large,
150 feuilles A3 et 100 feuilles A4,
10 paquets de gomme tackante (patafix),
5 rouleaux de papier collant de peintre (pour fixer des feuilles de kraft aux murs sans abimer la peinture ou le revêtement mural),
5 paires de ciseaux,
10 tubes de colle.

Format des livrables

Brief

Comment faire pour que [destinataires]

[verbe d'action] + [objet]

afin de [verbe d'action] + [objectif]

Par exemple :

Comment faire pour que les étudiants de licence trouvent un emploi afin de rembourser leurs prêts en moins d'un semestre avant de s'inscrire en master ?

Merlin

Une feuille A3 divisée en 3 colonnes d'égales largeurs

Au 1er tour :

3 notes repositionnables disposées l'une en dessous de l'autre verticalement

1 idée par note

Au 2e tour (chacun passe sa feuille à son voisin de droite et récupère celle de son voisin de gauche) :

3 notes repositionnables disposées l'une en dessous de l'autre verticalement, à la droite des 3 notes précédentes

1 idée par note pour rebondir sur et améliorer l'idée à gauche

Au 3e tour (chacun passe sa feuille à son voisin de droite et récupère celle de son voisin de gauche) :

3 notes repositionnables disposées l'une en dessous de l'autre verticalement, à la droite des 3 notes précédentes

1 idée par note pour rebondir sur et améliorer les idées à gauche

Matrice facilité/impact

On dessine une matrice à deux axes avec l'impact de l'idée sur un axe et la facilité à la réaliser sur l'autre.

Les idées améliorées 2 fois par le Merlin sont disposées relativement les unes aux autres de manière à identifier les idées les plus impactantes et faciles à mettre en place. En fait, c'est une sorte de vote objectivé en temps réel.

Idéation collective

L'objectif est d'effectuer un rebond créatif à partir des idées qui ont été privilégiées dans la matrice.

A t'on oublié quelque chose, peut-on aller plus loin, etc. ?

Concept

Passer des idées au concept est un exercice de synthèse et de formalisation qui permet de donner de la cohérence au projet.

Le concept doit être explicite, visuellement compréhensible et autoporteur.

Test de concept

Les participants sont organisés par ensemble de deux groupes.

Un groupe visiteur prend connaissance de ce qu'a affiché un groupe hôte dans son espace de travail. Le groupe hôte n'a pas le droit de parler. Le groupe visiteur fait des commentaires à haute voix, dit ce qu'il a compris et ce qu'il ne comprend pas, pose des questions, etc. Le groupe hôte note les remarques et les questions et s'en servira pour rendre son concept plus robuste.

Après 5 minutes, les deux groupes changent symétriquement de rôle.

Prototypage

Ce prototype est une étape intermédiaire, une preuve de concept, entre le concept rendu plus robuste et la proposition de valeur minimale qui devra être définie ultérieurement à l'atelier. C'est un échantillon aussi détaillé que possible de ce à quoi le produit final devra ressembler, un brouillon de cahier des charges qui doit être cohérent.

Restitution

C'est le seul moment où tout le monde prend connaissance des projet de tout le monde. C'est donc l'occasion de partager le travail de l'atelier, même si cela n'est pas une synthèse, car elle ne peut matériellement pas être réalisée à chaud et en direct.

11. Formulaire de cession de droits pour les participants

CONCESSION DE DROITS D'ENREGISTREMENT AUDIO ET VIDÉO

Veillez prendre note que la conférence est enregistrée en audio et en vidéo (captation pour archivage et diffusion web en direct par Periscope). Votre signature confirme votre connaissance de ces enregistrements. Elle accorde au comité d'organisation du colloque ÉCRIDIL la permission d'utiliser les enregistrements à des fins d'enseignement et de recherche.



Je,

(votre nom en capitales)

octroie au comité d'organisation du colloque ÉCRIDIL 2018 (Usine C, Montréal, 30 avril et 1er mai 2018) l'autorisation d'enregistrer ma présentation en audio et en vidéo.

Le comité d'organisation est composé de René Audet, Renée Bourassa, Oriane Deseilligny, Bertrand Gervais, Michael Sinatra, Stéphane Vial, Josée Vincent et Marcello Vitali-Rosati.

signature

date

PUBLICATION EN BOOKSPRINT POST-ÉCRIDIL PROPOSITION DE LICENCE CREATIVE COMMONS

À titre de participant.e au colloque ÉCRIDIL, vous avez accepté de présenter une intervention et d'interagir avec les autres participants. Vous n'avez pas de ce fait autorisé la reprise de votre propos dans une publication.

Le comité d'organisation du colloque, exprimant le souhait de donner rapidement à lire une synthèse des interventions et échanges qui s'y seront tenus, a planifié un *booksprint* conduisant à la production d'un bref ouvrage aux fins de transfert des savoirs et propositions discutés lors de l'événement.

C'est pour cette raison que nous sollicitons votre accord explicite d'être l'un des « auteurs » de cette publication, à titre gracieux et dans les conditions que nous vous proposons.

Nous vous demandons l'autorisation de colliger vos idées et propositions et de les éditer. Les visées de transfert, dans un contexte de communauté ouverte, nous suggèrent de recourir à une licence *Creative Commons*, favorisant le respect de l'autorité des contenus, leur circulation libre et conforme à leur publication initiale. L'autorité de l'ouvrage est ainsi collective et conjointe, le comité de production de l'ouvrage (relevant du comité d'organisation du colloque) se joignant à votre voix pour rédiger les synthèses et reformulations nécessaires à cet exercice.

ATTRIBUTION / PAS D'UTILISATION
COMMERCIALE / PARTAGE DANS LES
MÊMES CONDITIONS



Je,

(votre nom en capitales)

consens à être « auteur » au sein de la publication issue du colloque ÉCRIDIL, dans les conditions énoncées ci-dessus.

signature

date

12. Organisation du colloque Ecrdil



Figure 205. Couverture du programme du colloque Ecrdil

- 30 avril -		- 1er mai -	
8h30	Accueil	8h45	Accueil
8h45	Mot de bienvenue	9h00-10h20	Séance (H) « Fondements repensés »
9h00-10h20	Séance (A) « Matérialités du design du livre numérique »	<ul style="list-style-type: none"> Emmanuel Souchier, « Éléments pour une épistémologie du design en contexte numérique » Franck Cormerais, « Retour sur la "Lecture Appropriative" dans la dynamique des humanités digitales » Olivier Charbonneau, « Encoder les communs de la lecture » 	
<ul style="list-style-type: none"> Marc Jahjah et Clémence Jacquot, « Interroger la matérialité numérique d'une œuvre "hybride" : l'énonciation éditoriale de <i>Poreuse</i> » Oriane Deseilligny, « Entre livre-objet et objet livre : représentations et circulations de la matérialité du livre en régime numérique » Julien Drochon, « Plasticités plurielles des lectures numériques » 	<i>Période de questions</i>	10h20-10h40	Pause
10h20-10h40	Pause	10h40-12h15	Séance (I) « Interactions, poétiques en contexte numérique »
10h40-12h00	Séance (B) « Interactivité, arts et design éditorial »	<ul style="list-style-type: none"> Arthur Perret, « La typographie du livre numérique, entre fluidité et frictions » Arnaud Laborderie, « Du livre enrichi au livre augmenté : les enjeux d'une clôture numérique » 	
<ul style="list-style-type: none"> Nolwenn Tréhondart et Alexandra Saemmer, « Le design éditorial des livres d'art numériques, au prisme de leurs pratiques de conception et de réception » Françoise Paquiénéguy, « Représenter la création artistique : les catalogues d'exposition numérique, comment aborder l'œuvre et son auteur ? » 	<i>Période de questions</i>	<ul style="list-style-type: none"> Elsa Tadier, « Corps, livre et design. Quand le numérique invite à revisiter la place du corps dans les dispositifs de lecture » Dominique Raymond, « Potentiel², Numérique et contrainte pour Savage (<i>Nathalie</i>), Dickner et Fortier (<i>Révolutions</i>) » 	
	<i>Période de questions</i>	12h15-13h30	Lunch
	Table ronde (C) « Arts, littérature et formes numériques du livre »	13h30-14h30	Stands (J) [SÉANCE PARALLÈLE – HALL]
	Participants : Lucile Haute, Ariane Savoie et Nolwenn Tréhondart	<ul style="list-style-type: none"> Jimmy Gagné, « Présentation Album jeunesse animé et narré » Nicolas Tilly, « Impression postnumérique et remix éditorial » Gisèle Henniges, « Co-création auteur et designer : ergonomie de l'œuvre augmentée et expérience utilisateur » Marcello Vitali-Rosatì, Arthur Juchereau, Servanne Monjour et Nicolas Sauret, « Stylo : un éditeur sémantique WYSIWYM pour l'édition savante de demain » 	
12h00-13h15	Lunch	13h30-14h30	Atelier d'idéation collective (K) [SÉANCE PARALLÈLE – CAFÉ]
13h15-14h30	Séance (D) « Édition scientifique : enjeux »	14h30-14h50	Pause
<ul style="list-style-type: none"> Anthony Measure, « Design et humanités numériques, vers une convergence du livre et du web ? » Jean-Louis Soubret, « Design thinking et édition - point d'avancement » Lucile Haute et Julie Blanc, « Design des publications scientifiques multisupports » 	<i>Période de questions</i>	14h50-16h00	Séance (L) « Interfaces, écritures et design éditorial »
14h30-14h50	Pause	<ul style="list-style-type: none"> Christine Develotte et Mabrouka El Hachani, « L'alliance du papier et de la tablette numérique : les spécificités d'une nouvelle écriture de fiction jeunesse » Florence Rio, Bertrand Meslier et Eric Kergosien, « Le "KIT de rédaction" pour livres interactifs numériques ou la reconfiguration de l'acte d'écriture » Nathalie Lacelle, Marie-Christine Beaudry et Prune Lieutier, « Projet de soutien au développement de démarches d'édition numérique jeunesse au Québec » 	
14h50-16h10	Séance (E) « Édition scientifique : études de cas » [SÉANCE PARALLÈLE – HALL]	<ul style="list-style-type: none"> Christine Develotte et Mabrouka El Hachani, « L'alliance du papier et de la tablette numérique : les spécificités d'une nouvelle écriture de fiction jeunesse » Florence Rio, Bertrand Meslier et Eric Kergosien, « Le "KIT de rédaction" pour livres interactifs numériques ou la reconfiguration de l'acte d'écriture » Nathalie Lacelle, Marie-Christine Beaudry et Prune Lieutier, « Projet de soutien au développement de démarches d'édition numérique jeunesse au Québec » 	<i>Période de questions</i>
<ul style="list-style-type: none"> Martine Clouzot, « "Living Book" et Enluminures médiévales. Résultats d'expérimentation sur la création, l'édition collaboratives et la diffusion d'un "livre vivant" » Enrico Agostini-Marchese, Elsa Boucharde, Arthur Juchereau, Nicolas Sauret et Marcello Vitali-Rosatì, « Une plateforme pour le livre anthologique à l'époque numérique. Le cas de l'<i>Anthologie Palatine</i> » Benoît Epron et Catherine Muller, « L'abécédaire des mondes lettrés, un outil d'écriture collaborative savante » 	<i>Période de questions</i>	16h00-17h00	Table ronde (M) « Imaginer des structures d'accompagnement éditorial en contexte numérique »
14h50-16h10	Séance (F) « Techniques de la fabrication et de la diffusion des livres en environnement numérique » [SÉANCE PARALLÈLE – CAFÉ]	Participants : Bertrand Gervais, Benoit Bordeleau, Nathalie Lacelle, Prune Lieutier et Annabelle Moreau	
<ul style="list-style-type: none"> Cécile Meynard et Elisabeth Greslou, « Du manuscrit au numérique : une édition multiformes et multisupports de <i>Stendhal</i> » Antoine Fauché, « Git comme nouvel ingrédient des chaînes de publication ? » 	<i>Période de questions</i>		
<ul style="list-style-type: none"> Fabrice Marcoux, « La co-édition grâce à Booktype au B7 : mise à l'épreuve du livre numérique » Jean-Michel Gascuel, « Le livre de demain sera connecté et transmedia ou ne sera pas » 	<i>Période de questions</i>		
16h10-17h00	Table ronde (G) « Publier la recherche »		
Participants : Anthony Measure, Julie Blanc, Antoine Fauché, Lucile Haute, Servanne Monjour et Nicolas Sauret			

Figure 206. Programme Ecridil



Figure 207. Le dispositif de présentation des communications

Le dispositif était organisé en trois zones :

- au centre, les intervenants étaient en position d'échanges face-à-face avec le public. Ce dernier pouvait aussi prendre des notes ou réagir en direct sur les réseaux sociaux,
- à droite était installée la régie son et vidéo qui diffusait les interventions en direct,
- à gauche, l'équipe éditoriale retranscrivait au fur et à mesure les présentations et les échanges sur un pad.



Figure 208. Les participants au colloque et la régie



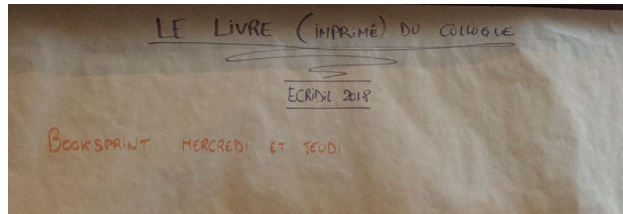
Figure 209. Les prises de note sur le pad du colloque

Les prises de notes sur le pad collaboratif étaient collectives et redondantes. Selon les moments, de trois à huit rédacteurs y écrivaient simultanément. En plus de cette prise de notes, certains participants et des rédacteurs réagissaient à chaud sur les réseaux sociaux (principalement Twitter).

13. Organisation de l'atelier de cocréation éditoriale



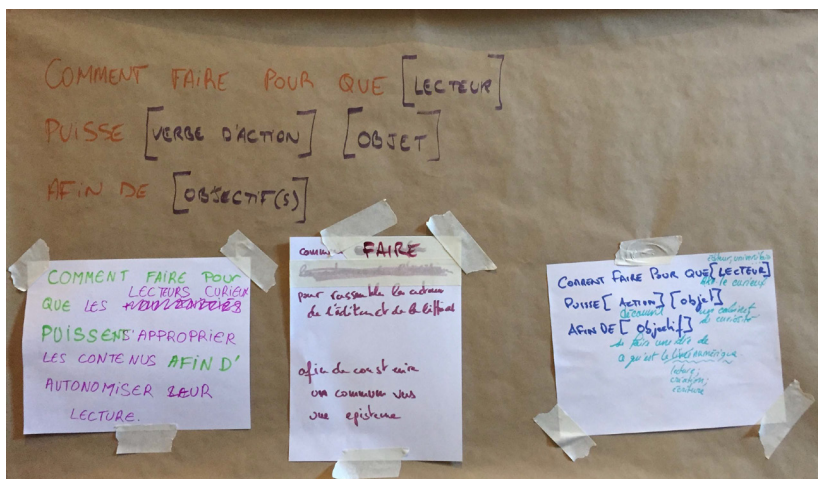
Étape #1 : Introduction de la problématique de l'atelier et répartition des participants en trois équipes de 7-8 personnes



Le livre (imprimé) du colloque ECRIDIL 2018
Préparation du booksprint des mercredi 2 et jeudi 3 mai 2018



Étape #2 : Rédaction des briefs par chaque équipe



Brief #1

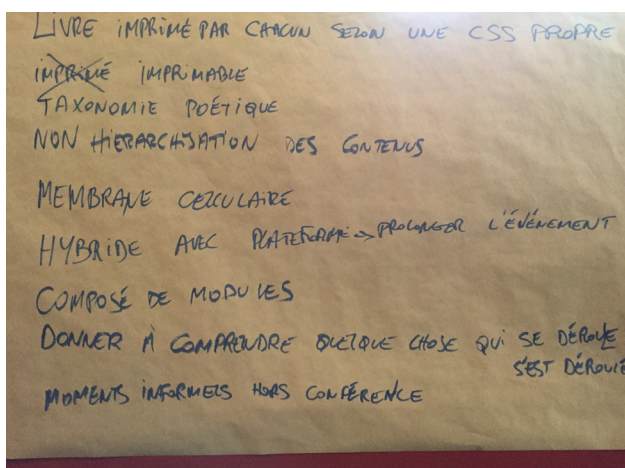
Comment faire pour que les lecteurs curieux puissent s'approprier les contenus afin d'autonomiser leur lecture ?

Brief #2

Comment faire pour rassembler les acteurs de l'édition et de la littérature afin de construire un commun vers une épistémè ?

Brief #3

Comment faire pour que les éditeurs et les lecteurs universitaires puissent découvrir un cabinet de curiosités afin de se faire une idée de ce que sont la lecture, la création et l'écriture numériques ?



Étape #3 : Brainstorming sur les briefs

Livre imprimable par chacun selon une CSS propre.

Taxonomie poétique.
Non hiérarchisation des contenus.
Composition modulaire.

Membrane cellulaire.

Hybrides avec plateforme => prolonger l'événement.
Donner à comprendre quelque chose qui se déroule, s'est déroulé.
Moments informels hors conférence.

Étape #4 : Merlin
créativité individuelle de chacun des 22 participants à l'atelier
augmentée par rebonds successifs de deux autres participants

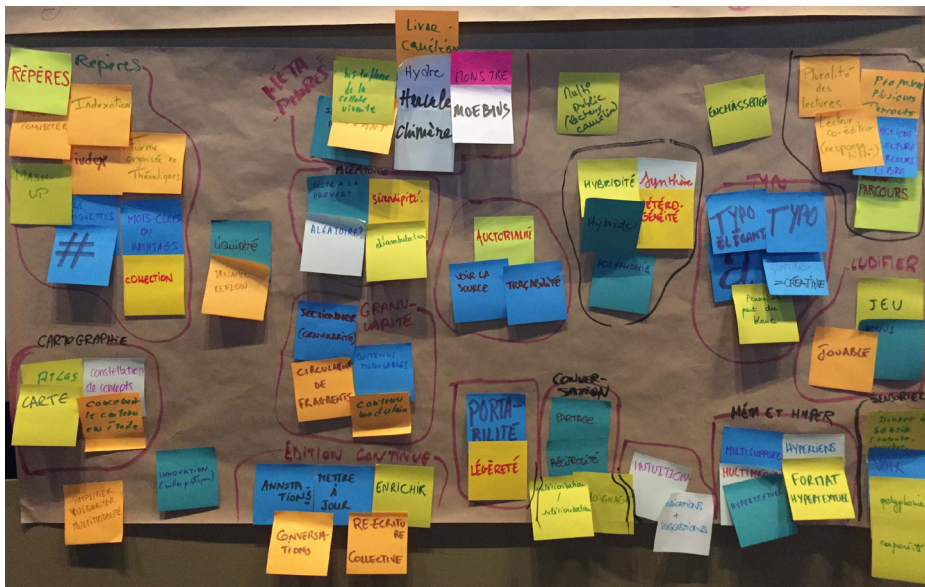




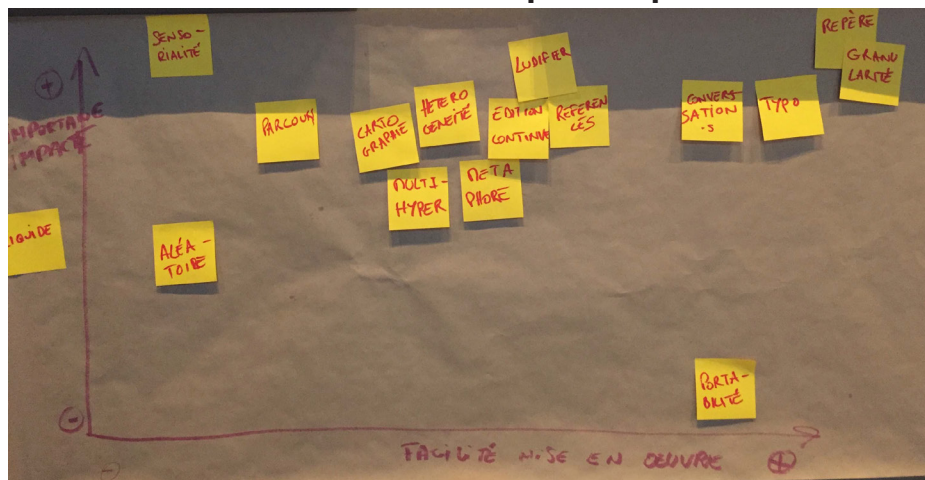
Étape #5 : Regroupement par « patates » des idées générées en créativité

Les 15 « patates » (groupes d'idées) sont :

- repères
- cartographie
- métaphores
- granularité
- aléatoire
- édition continue
- traçabilité des sources
- portabilité
- hybridité, hétérogénéité
- conversation
- typographie
- parcours pluriels
- ludification
- multi et hyper
- sensorialité



Étape #6 : Priorisation des groupes d'idées selon leur impact et leur facilité de mise en place respectives

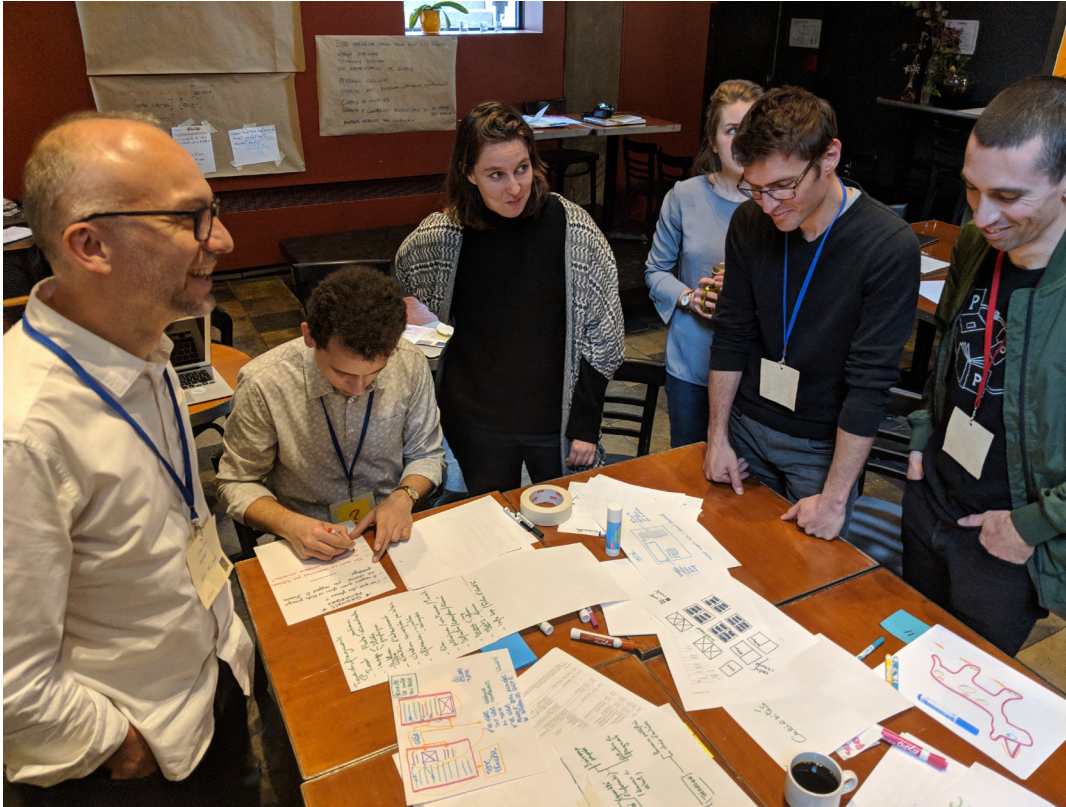


3. La «portabilité», la «sensorialité» et les «parcours aléatoires» sont plus éloignées des préoccupations immédiates.

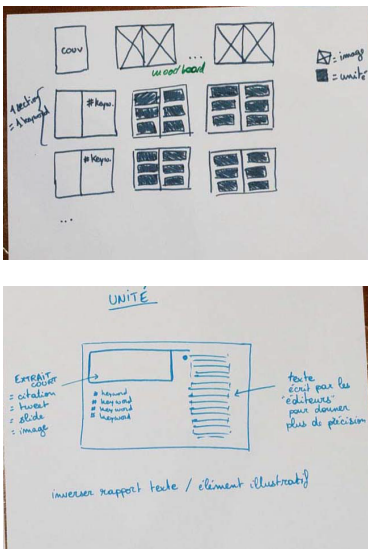
2. Dans un second temps, des notions pourraient s'enrichir comme repère avec «références», «cartographie» et conversation avec «multi & hyper» et d'autres notions s'ajouter : «ludification», «édition continue», «métaphore» et «hétérogénéité».

1. La preuve de concept s'établit autour des quatre notions de REPÈRE (index, mots clés), de GRANULARITÉ (fragments, modules), de CONVERSATION et de TYPOGRAPHIE

Étape #7 : Formalisation et prototypage des concepts



Proto-concept #1



Proto-concept #2

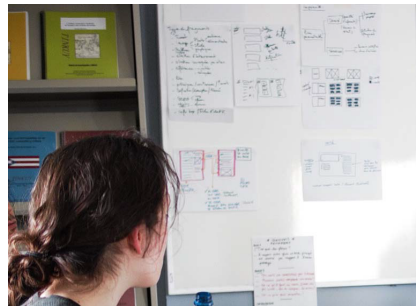


L'ébauche de chemin de fer montre une entrée par les images et la sensorialité (*moodboard*), puis un parcours rythmé par des sections correspondant à des mots-clés. Dans chaque section, des unités sont emboîtées. Chaque unité à une structure et une présentation semblables. La présentation inverse le rapport texte/illustration en privilégiant cette dernière. La structure s'organise autour d'une image (par ex. document visuel ou *slide*) ou d'une « image de texte » (par ex. citation ou tweet) augmentée de mots-clés et de texte rédigé par les « éditeurs ».

Les principes de mise en page sont inspirés de ceux d'Edward Tufte : les gloses sont liées au texte courant et peuvent être agencées de différentes façons (par ex. en colonne vis-à-vis du texte ou par blocs qui s'insèrent dans la justification). La forme numérique reste « liquide » et le livre imprimable est paramétrable à deux niveaux : 1. sa densité (quantité d'informations et niveau de détail) et 2. sa thématique (parcours pré-définis et choix d'entrées).

14. Organisation du booksprint Ecridil

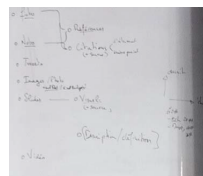
Étape #1 : Reprise des formalisations conceptuelles de l'atelier



Étape #2 : Réflexions sur l'organisation du livre

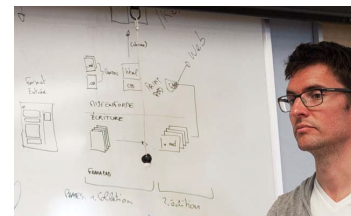
1. Typologie du matériel collecté : les « fragments »

- Fiches et notes
 - références
 - citations
- tweets
- images / photos
- slides
 - visuels
 - description / définition



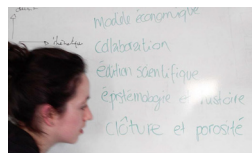
2. Rappels

- A) sur l'organisation éditoriale en 2 phases :
1. collation
 2. édition
- B) sur la succession des tâches :
1. écriture
 2. mise en forme



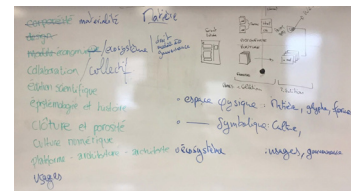
3. Première proposition d'organisation thématique

- corpororité
- design
- modèle économique
- collaboration
- édition scientifique
- épistémologie et histoire
- clôture et porosité
- culture numérique
- plateforme, architecture



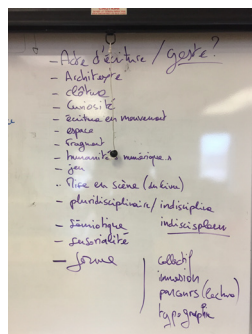
4. Seconde proposition d'organisation thématique

- matérialité
- écosystème
- collaboration / collectif
- édition scientifique
- épistémologie et histoire
- clôture et porosité
- culture numérique
- plateforme, architecture
- usages, gouvernance

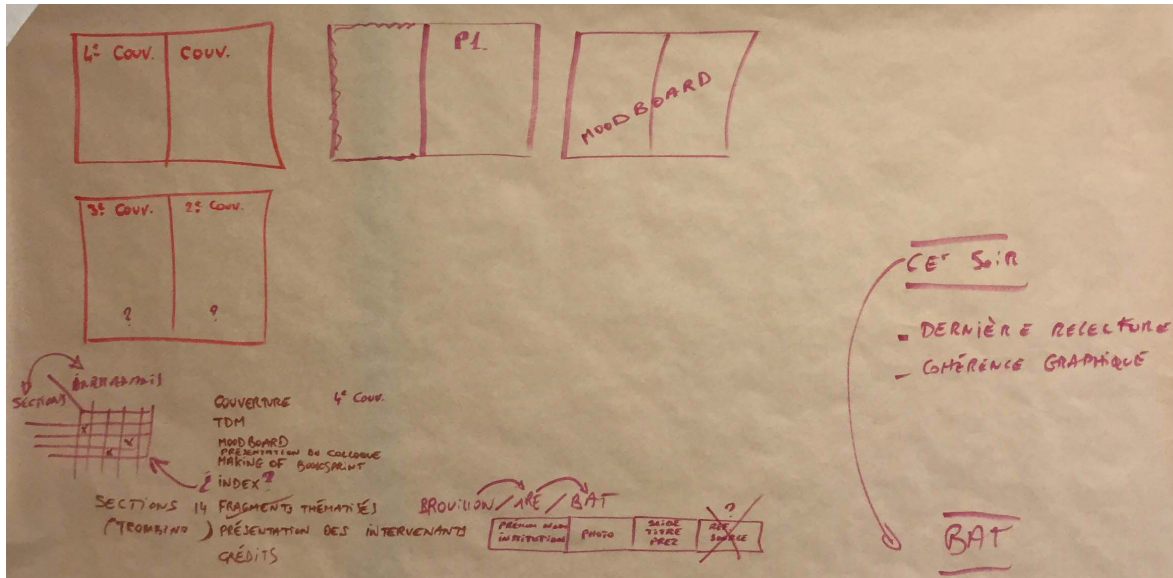


5. Troisième itération d'organisation thématique

- acte d'écriture / geste
- architecte
- architecte
- clôture
- curiosité
- écriture en mouvement
- espace
- fragment
- humanités numériques
- jeu
- mise en scène (du livre)
- sémiotique
- sensorialité
- pluridisciplinaire / indiscipliné
- forme (collectif, immersion, parcours, typographie)

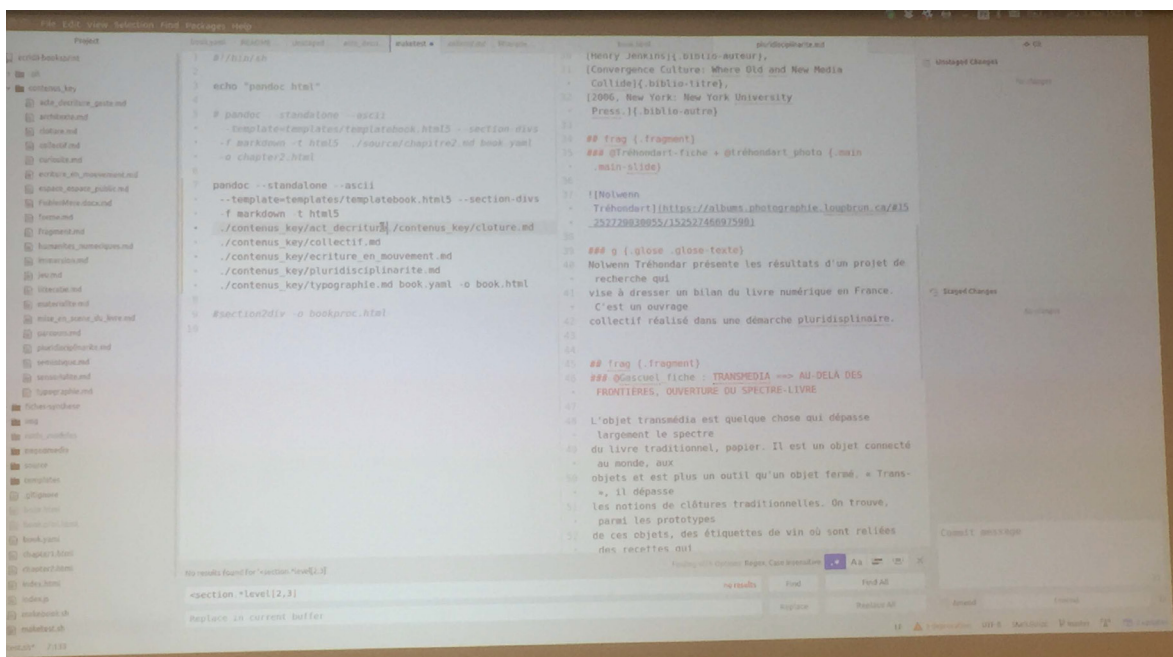


Étape #3 : Réflexions sur la formalisation

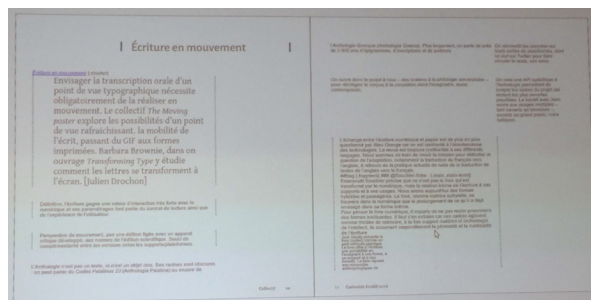
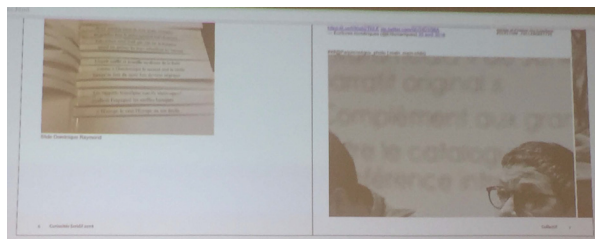


Les métadonnées de chaque « fragment » peuvent être représentées sous forme matricielle avec d'une part une étiquette SECTION indiquant dans quelle section thématique le ranger et d'autre part une étiquette INTERVENANT qui en identifie l'auteur. Ce marquage sémantique permet d'ordonner et de réordonner les entrées du livre. Il reste à préciser le chemin de fer du livre, c'est-à-dire quelles sections vont le constituer : table des matières, moodboard, présentation du volume, making of du booksprint, index, sections (compilations de fragments), présentation des intervenants (prénom et nom, institution d'appartenance, photo, slide de titre de sa présentation ECRIDIL), crédits. Il faut aussi réaliser (forme et sémantique) chaque section. Enfin, il s'agit aussi de rappeler l'objectif de clôturer le booksprint en deux jours et les étapes qu'il faudrait franchir.

Étape #4 : Structuration numérique du livre en cours



Étape #5 : Premiers rendus de maquette



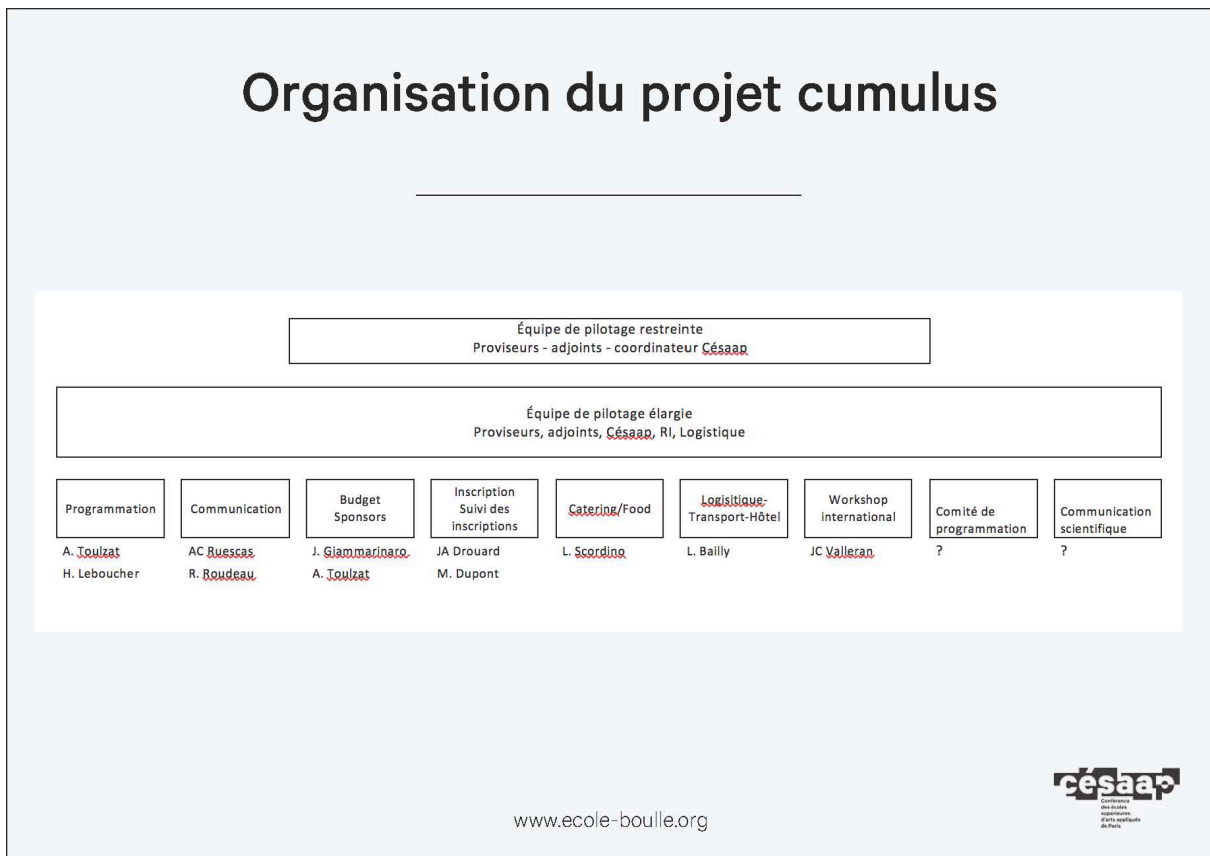
Appendix 4. Cumulus Paris


1. Comité de programmation du 7 septembre 2017

École Estienne, Paris

 <p>Conférence des écoles supérieures d'arts appliqués de Paris</p> <p>La Césaap est la Conférence des Écoles Supérieures d'Arts Appliqués de Paris, l'association des écoles Boulle, Duperré, Estienne & de l'Ens aama.</p> <p>Créée en avril 2016, cette association porte l'expérimentation d'un diplôme conférant grade master, permet de développer les échanges entre les établissements ainsi que la visibilité hexagonale et internationale.</p> 	 <p>Cumulus Association depuis 2001</p> <p>Cumulus représente actuellement 56 pays avec 260 membres ; c'est la principale association internationale pour l'éducation et la recherche dédiées aux arts et au design.</p> <ul style="list-style-type: none"> - Fondée en 1990 - Organisée en association depuis 2001 - 260 membres de 56 pays en 2017 - Reconnue par l'UNESCO depuis 2011 - Siège de Cumulus situé à Helsinki (Aalto University of Arts), Finlande - Présidente : Professeur Luisa Collina, École de design, Politecnico di Milano, Italie - Secrétaire générale : Eija Salmi, Aalto University of Arts, Design et architecture, Finlande <p>Plus d'informations sur www.cumulus.org</p> 
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Lors de la première réunion du comité de programmation, la question de la publication restait à aborder (cf. « ? » dans l'organigramme ci-dessous).



<p style="text-align: center;">Thématique Paris Cumulus 2018</p> <hr/> <p>Faire, imaginer, apprendre, penser, chercher, innover, créer, fabriquer, construire ensemble pour échapper à ce qui divise, oppose, exclut, et inventer demain.</p> <p>Le design est une élaboration collective et laboratoire des avenir possibles. Moyen de transformation de notre environnement autant que manière de le questionner, il implique des regards et des expertises croisés.</p> <p>La pédagogie de projet et l'esprit de collaboration propres au design en font une puissance de pensée, d'éducation et de transformation. Comment faire essaimer cette force dans tous les domaines de la vie ?</p> <p>La conférence Cumulus 2018 à Paris s'inscrit dans une démarche de transversalité et d'interdisciplinarité ; elle met en avant le collectif et le collaboratif : son objectif est de faire de l'altérité une force positive, du design et de la rencontre des talents un outil incontestable d'action sur le réel.</p> <p>Associées depuis deux ans au sein de la Césaap, les quatre écoles supérieures parisiennes de Design et de Métiers d'arts, Boule, Estienne, Duperré et l'Ensaama, ont choisi de partager leurs expertises, de croiser leurs expériences et d'accueillir Cumulus Together pour inventer demain ensemble.</p> <p style="text-align: right;"></p>	<p>Sous-thématique 1 Éducation et transmission</p> <hr/>
	<p>Sous-thématique 2 Monde professionnel : co-working</p> <hr/>
	<p>Sous-thématique 3 Citoyenneté et engagement politique</p> <hr/>

2. Recherche action

2.1. Réunions de travail

Deux réunions de travail avec l'équipe de coordination le 27 novembre (avec la participation de la présidente du comité scientifique) et le 7 décembre 2017.

2.2. Synthèse partielle : analyse éditoriale des publications Cumulus

Jean-Louis Soubret

13 décembre 2017

Cette analyse est partielle, pour l'imprimé elle ne porte que sur les exemplaires des 2 publications de la nouvelle série « Cumulus Think Tank Series » et des deux plus récentes publications (numéros 31 et 32) de la série « Cumulus Working Papers » et pour le numérique elle repose sur une visite rapide du site Cumulus.

Publications imprimées

Les deux séries sont publiées dans le même format portrait A4 (21 x 29,7) avec une maquette en 2 colonnes de justification similaire.

Cumulus Working Papers

Les deux derniers numéros publiés l'ont été en 2013 (More for Less – Design in an Age of Austerity, Dublin) et 2014 (Cultural Diversity – Social Engagement – Shifting Education, Aveiro). Ils présentent un « air de famille » car ils sont inspirés du concept développé par l'University of Art and Design d'Helsinki, mais sont dans le détail assez différents. Les 68 pages de More for Less hébergent 10 articles non thématiques et les 156 pages de Cultural Diversity – Social Engagement – Shifting Education en contiennent 26 répartis en 3 parties thématiques et une « varia

», plus une présentation des speakers et des pages finales où sont reproduits des posters. Chaque article du plus petit volume mesure 6 pages en moyenne (environ 25 000 caractères) avec un abstract et une dizaine de bibliographies et contient 6 photos et 1 schéma ou diagramme, les articles du plus gros volume sont plus courts, 5 pages en moyenne (20 000 caractères) avec un abstract, des mots-clés et une quinzaine de bibliographies et presque 2 photos et 1 ou 2 schémas ou diagrammes.

Le responsable éditorial de ces deux titres est E. Salmi, entourés de deux ou trois éditeurs différents pour chaque fascicule. Le copyright appartient conjointement à la Aalto University School of Arts, Design, Architecture and Media et aux auteurs.

Cumulus Think Tank Series

Les deux premiers fascicules ont été publiés en 2015 (Changing Paradigms: Designing for a Sustainable Future) et 2016 (Bearers of Internationalisation). Ils sont très dissemblables avec des paginations respectives de 378 pages et 90 pages, et l'un est imprimé en noir et blanc et l'autre en couleur. Les articles sont répartis en plusieurs parties thématiques (5 à 7) et le plus gros numéro accueille 29 articles d'une dizaine de pages (environ 50 000 caractères) avec une quarantaine de références bibliographiques et un schéma ou diagramme ; c'est-à-dire un format d'article académique classique. Dans le plus petit sont publiées 25 contributions de 2 pages en moyenne (environ 7 500 caractères) illustrées de plus d'une photo et, pour la moitié d'entre eux, d'un schéma ou diagramme.

Chaque titre a été édité par des équipes différentes et le copyright de Bearers of Internationalisation appartient conjointement à la Aalto University School of Arts, Design, Architecture and Media et aux auteurs alors que celui de Changing Paradigms n'est pas mentionné même s'il est lui aussi publié par la même faculté de la Aalto University. Il est indiqué que le concept de maquette a été développé par M. Hint de l'Estonian Academy of the Arts alors que les deux maquettes sont en fait très différentes. Le design graphique et la mise en page ont été réalisés pour les deux fascicules par Esmé Vahrmeijer du Studio 3.

Publication en ligne

Les fascicules sont disponibles en ligne sous forme de fichier PDF non indexé. Sur le site Cumulus, les « Cumulus Working Papers » sont postés dans la partie « News & Events/Publication & Reports » en pages 3 à 5 (sur 5 pages) et les deux numéros de la Think Tank Series se trouvent dans une autre partie du site « News & Events/Initiatives » page 3 et 4 (sur 7 pages). Les publications sont donc « trouvables » si on les cherche, par contre les papiers ne sont ni référencés ni indexés.

Questions

La série « Cumulus Think Tank » a-t-elle remplacé les « Cumulus Working Papers » ?

Quelle est la cession de droits consentie par les auteurs à Cumulus (comment se matérialise-t-elle : lettre-contrat, licence Creative Commons, etc.) qui en communique les termes aux auteurs (Césaap, Cumulus, Aalto University, etc.) ?

Quels sont les engagements de la Césaap envers Cumulus pour la publication (jusqu'où faut-il que la Césaap aille en terme de publication avant remise à Cumulus des manuscrits à publier, la publication est-elle exclusive pour Cumulus ou la Césaap peut-elle re-publier ou publier différemment toute ou partie des papiers et/ou des comptes-rendus de sessions, etc.) ?

Le calibrage des contributions est-il unique (par ex. un format « hybride » entre professionnel et académique de 20 000 à 25 000 caractères avec un abstract et une bibliographie de 10-15 références et un maximum de 5 photos et 2 schémas ou diagrammes) ou peut-il être adapté en fonction de la nature de celle-ci (par ex. 40 000 signes et bibliographie longue pour les articles académiques d'un côté et, de l'autre, 10 000 signes et 5 à 10 illustrations, notamment photographiques, pour les contributions professionnelles) ?

Quel est le degré de latitude pour une « augmentation » de l'édition papier en ligne ou un « site compagnon », voire une publication avec référencement de chacun des papiers (pourquoi pas une attribution de DOI pour la « citabilité ») ?

Etc. ?

3. Actes du colloque publiés en 2018

3.1. Published proceedings

Editor-in Chief
Cumulus President
Luiza Collina

Editors
Césaap
Claire Brunet, President
of the Cumulus Paris 2018
Scientific Committee

Layout
Jani Pulkka

Graphic Design
Concept for Cumulus
Conference Proceedings
Series was developed in
2018 by Jani Pulkka

Cumulus conference
*To get there: designing
together* hosted by CESAAP
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02/17 Bengaluru, Letters
to the Future
03/18 Paris, To get there:
designing together
04/18 Wuxi, Diffused Transition
& Design Opportunities

**TO GET
THERE:
DESIGNING
TOGETHER**

Cumulus Conference Proceedings Paris 2018

Cumulus Conference
Proceedings Series

Cumulus Association of
universities and Colleges
of Art, Design and Media

Paris 2018

Call for papers and selection procedure

We are very pleased to present the online Paris To Get There – Paris Cumulus Conference Proceedings 2018. The conference call received a great international response with over 180 submissions from more than 50 countries. 62 papers, 2 films and 1 poster were selected from a total of 188 proposals, and all contributions were double-blind peer-reviewed by the international review panel of 80 members. These papers and films were accepted for our Parallel Sessions including oral presentations.

We offered our contributors the possibility of submitting academic or professional proposals (32 academic papers – 33 professional proposals including films and a poster). We would like to take this opportunity to thank all the presenters for submitting their work and attending the conference at École Boule, École Duperré, École Estienne and Ensaama in April 2018. The Cumulus Conference 2018 in Paris adopted a cross-curricular interdisciplinary approach which highlighted collective and collaborative interest. Thanks to your contribution and the participation of almost 350 delegates during the 3 days of the Conference, we contributed together to make others a positive force, and to ensure that design and this union of talents become an undeniable tool for action on reality.

Thank you!

Césaap

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Estienne, Ensaama)
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10 Cumulus Conference Proceedings Paris 2018
Call for papers and selection procedure

3.2. Guidelines

Full Paper Title. Subtitle

First name Last namea, First name Last nameb, First name Last name*

aAffiliation name

bAffiliation name

*Corresponding author e-mail:

Abstract: These guidelines provide instructions to format your full or short paper for the ‘TOGETHER Cumulus’ conference. Please write directly into the template or copy your finished text into it choosing ‘match destination formatting’. Please use the predefined formatting Styles, preceded with ‘_TOGETHER’: such as _TOGETHER Paper Title, _TOGETHER Abstract or _TOGETHER Paragraph. Do not change the predefined formatting settings in this document as the aim is to produce the conference proceedings using a consistent style. The Abstract should be no more than 150 words and one paragraph only. Please try to include briefly both the motivation/background, approach/method and results/conclusion. Avoid quotation and citing references in your abstract in order to keep it easy to understand for non-experts of your field. The deadline to submit your full paper is jour/mois 2018. Submit your final paper by uploading a new file to your existing submission in the conference system at ref. URL EasyChair? [STYLE: _TOGETHER Abstract]

Keywords: One, Two, Three, Four, Five

1. Introduction [STYLE: _TOGETHER Heading 1]

Please read the entire guide before submitting the full or short paper as it will save time for you and make the process easier for us.

You should submit your full or short paper in Word format using this template.

Full papers should be 4000-5000 words in length excluding abstract and references, short papers should be a maximum of 2000 words in length. We expect high standards of scholarship and clarity in terms of establishing context, explicating methods of inquiry, and reporting results. If English is not your native language, please let a fluent speaker or a professional proofreading service revise your contribution.

All accepted papers will be published in the proceedings if at least one of the authors register to conference and present the work. The publication will have an ISSN/ISBN number and a DOI reference to ensure they appear in scholarly web-searches and it will be accessible from the conference website.

This template document itself uses the same formatting as required for the Conference so your full paper should appear visually very similar. You can access template styles for Titles, paragraphs, and other styles directly from the Quick Style Menu that is part of the Home Menu in Word. You can either write directly into the template or paste your finished text into it and choose ‘match destination formatting’ in the pop-up menu that appears when you paste in text. Do not change the predefined formatting settings in this document (such as paper size, orientation, margins, typeface, size, indents, spacing, headings, etc.).

3.3. Formatting rules

General Guidelines [STYLE: _TOGETHER Heading 2]

The main text of the submission should be formatted with [STYLE: _TOGETHER Paragraph]

The sections of your paper should be numbered, though not go deeper than one sub-section (i.e. Section 2.1 is fine but Section 2.2.1 is not).

Tables should be formatted as Table 1 (below): left justified text for first column and centred columns thereafter, if possible. Only horizontal table grid lines should be used and the table should have the same width as normal text paragraph in order to fit exactly within the document margins. Add one empty paragraph of the [STYLE: _TOGETHER Paragraph] style following a table.

Table 1. Table layout. Captions for Tables are placed above. [_TOGETHER Table title].

Table Rows [STYLE: _TOGETHER Table] Cell one Cell two

Second Row 1 2

Third Row 2 3

Fourth Row 4 5

Short quotations within the text should be marked with double quotation marks: Lawson also has a broad understanding of design when he mentions: “Professional designers such as architects, fashion designers and engineers” (Lawson, 2004, p.5). Longer quotations of more than one line should be formatted as below, again within double quotation marks:

“More of the goods and services produced for consumer across a range of sectors can be conceived of as ‘cultural’ goods, in that way they are deliberately inscribed with to generate desire for then amongst the end uses sold to consumers in terms of particular clusters of meaning indicates the increased importance of ‘culture’ to production circulation of a multitude of goods and services.” (du Gay, et al, 1997, p.24) [STYLE: _TOGETHER Long quotation]

For lists of material you can either use a bulleted list:

Design; [STYLE: _TOGETHER Bullet list]

Research;

Society.

Or a numbered list:

- Future; [STYLE: _TOGETHER Numbered list]
- Focused;
- Thinking.

Images

Please think carefully about the presentation of any visual material. As the proceedings will be published in digital form you have the opportunity to include good quality colour images or other media files that help to present your research and its context.

Where possible please make images:

Large enough to see clearly;

Of good resolution (200dpi);

Optimised to be less than 350Kb;

Cropped appropriately.

If you are using diagrams, info graphics, or other schematics please ensure that:

You present information clearly;

You use the Calibri font;

All text is legible;

After you insert an image into your document, select it and use the style named [STYLE: _TOGETHER Picture]. The image should have the same width than the formal paragraph and fit exactly within the document margins if possible and reasonable. Images are followed by a caption with figures numbered sequentially – Figure 1, Figure 2, etc.

Figure 1. Captions are placed under the pictures. Ensure that your caption adequately describes what you want your reader to see in the picture, highlighting any areas that they should focus on or relationships that you might want them to see. [STYLE: _TOGETHER Caption].

Referencing

Referencing should follow the APA, Author-date, Style Guide as explained in the official guide: <http://www.apastyle.org/learn/tutorials/basics-tutorial.aspx> (slides 13-25)

If you use reference management software such as EndNote or Word Citation & Bibliography make sure that you submit your paper with the fields unlinked to your bibliographical database.

3.4. Submission

In preparing your paper for ‘TOGETHER Cumulus’ please note the following:

We are aiming to produce a high-quality conference proceedings. Please follow as closely as possible this template structure and associated style guidelines;

Your final full or short paper submission should be in Word format to allow us to prepare the conference proceedings;

You can submit your final paper in the same conference management system that have received your (already accepted) submission:

ref. URL EasyChair?

Please make sure you can answer ‘yes’ to all the following questions:

Is the context of the work clearly described?

Is the contribution that is made clearly stated?

Does the paper conform to the paper template?

Has the paper been independently proof read?

3.5. References

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Lin, R. T. (2006). [Scenario and story-telling approach in cross cultural design]. , 2(5), 4-10. [IF THE ORIGINAL ARTICLE IS NOT IN ENGLISH LANGUAGE, IT SHOULD BE TRANSLATED AND INSERTED IN PARENTHESIS, AS INDICATED HERE]

About the Authors:

Author 1 add an author bio that describes research interests and main achievements in a maximum of 40 words. [_TOGETHER Author Bio and Acknowledgements]

Author 2 add an author bio that describes research interests and main achievements in a maximum of 40 words.

Acknowledgements: this section is optional. You can use this section to acknowledge support you have had for your research from your colleagues, student's participation, internal or

Appendix 5.

The Conversation

Journée d'observation in situ au bureau de The Conversation France, Tour Montparnasse, Paris
17 janvier 2018, 10h-20h

1. Entretiens individuels

1.1. Didier Pourquery, Directeur de la rédaction

La newsletter

Une newsletter quotidienne de 10 articles est envoyée chaque matin des cinq jours ouvrés de la semaine. Son menu est réalisé la veille à partir des articles que chaque responsable de rubrique sélectionne. La responsabilité de la composition de cette newsletter est tournante avec un responsable pour la semaine.

Les tableaux de bord

La liste des articles est affichée et qualifiée par 3 statuts :

- en cours
- commandité
- validé par l'auteur

Les articles

Les articles se présentent dans un format proche de Google Doc sur lequel apparaissent les révisions et leurs auteurs (identifiés par une couleur de texte). On voit ainsi qui fait quoi.

Quatre types de tags (balises) sont associés aux articles :

- thème
- section (rubrique)
- mots clés
- auteurs

Certaines propositions sont automatiques, mais les ajouts manuels sont toujours possibles et la validation est impérative. A chaque article sont aussi associés des suggestions de type « vous aimerez aussi ».

Chaque article est contrôlé selon trois critères :

- orthographique et typographique
- qualité des photos
- editing (lisibilité)

La newsletter

Des articles peuvent être publiés en anglais. Il s'agit d'une sélection de ce qui a été publié par le réseau de The Conversation ou d'articles de chercheurs Français rédigés en anglais, voire en bilingue français/anglais.

The Conversation

Les 10 articles sont présentés verticalement les uns à la suite des autres. Pour chacun, il est affiché un visuel, le titre et une accroche.

Il est possible de réunir deux (ou plus) articles dans un dossier. Le reste est identifié par rubrique. Des annonces d'événements figurent en pied.

Les articles

Certains papiers entrants sont rédigés comme des tribunes ou des opinions. Il est demandé à leurs auteurs de les recontextualiser comme des analyses.

Le CMS (outil de publication)

Les newsletters sont mises en page avec Campaign Monitor qui extrait les données du CMS.

Campaign Monitor permet aussi de produire des reportings qui affichent :

- le nombre d'envois,

- le taux d'ouverture des mails (sur les 12 derniers mois, il est d'environ 25%, contre 2% en moyenne pour les e-mailings et de l'ordre de 5% pour Le Monde),

- le taux de clic (sur les 12 derniers mois, il est d'environ 20%).

Les iconographies sont postées avec des droits de reprise sous licence Creative Commons les plus ouverts possibles ; l'objectif étant leur reprise à l'identique dans des journaux tiers.

Les articles

« [dans la rubrique] économie, on recherche des retours d'expérience au-delà de l'analyse. Des cas plus que de l'analyse théorique. »

Les métriques

Plus de 4 500 articles publiés depuis le lancement de The Conversation France (septembre 2015 [NDR] ce sont plus de 200 articles/mois).

Dans le hit des auteurs, on trouve des chroniqueurs et des co-signataires avec des doctorants.

Chaque auteur dispose d'une page avec ses statistiques. Y sont comptabilisées les pages vues sur le site The Conversation France et celles sur les sites des publications republiantes (tiers et autres membres du réseau TC). Lorsque les sujets ne sont pas trop pointus et que des articles sont repris dans des journaux plus grand public, ils sont souvent vus dans une proportion 90/10 ou 80/20 sur les republiants par rapport à TC France.

La durée de vie des papiers est assez longue et peut être entretenue avec des rebonds dans la newsletter et ou par la fonction « vous aimerez aussi » (4 suggestions) en bas de chaque article.

La newsletter

La newsletter du week end est conçue comme un best of de la semaine et une seconde chance pour les bons papiers qui n'ont pas été assez consultés.

Les articles

En haut de chaque article reçu sont affichés un calibrage et un indicateur de lisibilité à trois positions (vert-orange-rouge).

Grace à une simulation WYSIWYG, l'auteur conserve la main sur la mise en page.

Les auteurs

Les membres sont les institutions qui financent TC. A leur attention sont publiés les « six avantages d'être membre ». En termes de business, les membres sont plus ou moins assimilables à ce que sont les annonceurs dans la presse.

Les propositions des auteurs affiliés aux institutions membres sont privilégiées pour publication. Ils profitent d'un traitement plus rapide, là où l'examen et le traitement des propositions des auteurs tiers

sont plus longs. Les critères de sélection des non-membres sont plus exigeants. Des exceptions peuvent être faites au cas par cas pour les auteurs affiliés à des institutions en cours de prospection par TC France.

Les deux freins les plus fréquents à la publication sont :

la crainte que les auteurs ont des éditeurs scientifiques en termes d'exigence d'exclusivité de ces derniers. C'est une crainte largement infondée en fait, mais très présente, « pas le temps ».

Les disciplines qui tirent l'audience sont la santé et les sciences. Il existe une concurrence de fait avec les magazines santé ou de vulgarisation scientifique (Sciences & Avenir...)

Les métriques

Le site de TC France a comptabilisé environ 26 millions de vues en 2017

On constate un phénomène de « longue traîne »

Les auteurs

Des appels à article sont envoyés deux fois par semaine aux auteurs et aux membres référents (une personne par rubrique dans chaque institution membre).

Le travail de fidélisation est plus particulièrement de la responsabilité de deux membres de l'équipe de TC France

1.2. Leighton Walter Kille, Rédacteur en chef

Il est chargé notamment de la coordination internationale et technique.

Le réseau

TC a été créé en 2011 en Australie grâce à un amorçage de 1 million de \$AUS pour faire rayonner la science produite en Australie.

Le business model de TC est fondé sur le triptyque soutien institutionnel, Creative Commons et 0 pub. C'est un réseau d'indépendants signataires d'une charte. Par exemple, cette charte prévoit que chaque article publié peut être commenté, mais que les commentaires sont modérés. Au-delà des valeurs de la charte, des arrangements sont trouvés entre les membres du réseau, par exemple que les pages francophones sont gérées par TC France et cela concerne les institutions francophones canadiennes qui sont membres de TC France.

La gouvernance du réseau est plus ou moins informelle. Un TC Global qui gérait le « reste du monde » (c'est-à-dire les territoires non couverts par un TC-pays) a existé puis a disparu. Une instance TC MG est devenue la structure de gouvernance du réseau.

Dans le réseau, TC Australia est dominant. Aux États-Unis, l'espace occupé par TC US est moins légitime car il est déjà partiellement occupé par des initiatives préexistantes. L'environnement de TC France, le monde universitaire hexagonal, est en recomposition. L'esprit général est à but non lucratif et inspiré par les communs ; on le retrouve dans les statuts (501 aux É.-U., charity au R.-U., et Association loi 1901 en France).

Brève biographie

Journaliste américain de formation et dans sa carrière antérieure, Leighton se déclare touche-à-tout ; à TC France « on n'est pas snobs, on fait tout », « nous sommes tous, dans un certain sens, des généralistes ».

Sur la question des métadonnées, il participe à un atelier commun avec TC US.

Leighton a travaillé pour Journalist's resource, basé à Harvard, et soutenu par des fondations sur un modèle proche de celui de Wikipedia. Ce n'est pas du fact checking, mais des synthèses d'études de fond en lien avec l'actualité pour les journalistes. Il s'agit de fournir une boîte à outils et, d'une certaine manière, un complément de formation pour que les journalistes puissent donner du fond à leurs articles.

TC cible d'une part le grand public avec des articles prêts à publier et d'autre part s'adresse, avec une visée pédagogique, aux chercheurs qui s'efforcent de mieux communiquer.

Les articles

Format de 6 000 signes-1 200 mots, c'est-à-dire des articles longs de la presse quotidienne. Ils sont destinés à l'édition web, pas au papier.

Il collabore à la rubrique « Data » (infographie). Cette rubrique a été créée grâce à une bourse Google Digital News Initiative d'un an. Cette rubrique est désormais moins active, mais un projet de ce type est discuté au niveau « fédéral » de TC.

Il assure aussi la publication d'un article par rubrique par jour, soit 50 articles par semaine, sur la page d'accueil. Sa composition se réalise en drag & drop, potentiellement avec tous les articles des TC de tous les pays. En fonction de la langue consultée/utilisée, des menus contextuels dans cette même langue sont affichables. Les articles ne sont pas traduits, ils sont adaptés c'est-à-dire contextualisés dans une approche orientée lecteur et réécrits. Par exemple, un article repris par El Pais a été adapté et il est conservé en attendant un TC Espagne (quand il existera !).

Les reprises d'articles sont principalement destinés aux journaux, mais elles se font aussi sur les sites des institutions membres qui le souhaitent.

Les métriques

Les métriques de TC sont utilisables par des novices, alors que celles de Google Analytics par exemple sont un peu plus compliquées.

Le CMS

La conception est originellement évolutive (scalable). Le codage ayant été réalisé en Ruby [NDR : langage open-source dynamique qui met l'accent sur la simplicité et la productivité] avec de l'anglais inséré dans le code (embedded) ce qui a rendu difficile de sortir de cette langue. L'adaptation en français, la première, a été compliquée et a permis de rendre le code agnostique du point de vue de la langue. L'adaptation dans une troisième langue, l'indonésien, a été plus facile.

Le réseau

En dehors de l'Australie, où les relations entre les chercheurs et leur institutions sont bijectives et directes, les contextes des autres pays sont plus compliqués. Ainsi, le rôle des fondations aux États-Unis est à prendre en compte comme ceux de structures comme les Comue [NDR : les communautés d'universités et établissements sont des établissements publics à caractère scientifique, culturel et professionnel, soit des communautés d'universités et d'établissements qui permettent de regrouper des établissements d'enseignement supérieur et de recherche] ou l'IUF (Institut Universitaire de France) en France. Là aussi le CMS, conçu pour le contexte australien, est compliqué à adapter.

Au niveau de TC MG, il est possible de travailler par projet. Dans le cas de projets thématiques, par exemple « les jeux olympique », cela peut être compliqué.

En terme d'état d'esprit, le droit à l'erreur est permis, « nous sommes tous des entrepreneurs ». Il est possible de créer des dossiers pour des fondations, par exemple « l'économie circulaire » pour la Fondation Véolia pour lequel des articles ont été publiés et sont sollicités. Techniquement, il reste un problème pour afficher le logo de la fondation sur la page du dossier. Sur ce point, qui pose aussi problème pour TC UK et TC US, les trois pays se sont mis d'accord pour mutualiser le coût de développement afin de permettre l'affichage des logos des fondations. Dans des contextes dans lesquels tous les membres du réseau TC ne sont pas impliqués pour mutualiser les coûts, il faut rester vigilant aux freeriders, c'est-à-dire à ceux qui ne se porteraient pas volontaires pour partager les coûts mais profiteraient de nouvelles fonctionnalités.

Le CMS

Son mode de développement, centralisé en Australie, est agile, et non scrum ou quick and dirty. Les améliorations sont entreprises à partir de demandes bottom up. Quand Leighton souhaite un développement, il envoie une demande. Il est bêta-testeur.

La plateforme est robuste et l'affichage des textes est simple et clair, entre WYSIWYG et HTML. Le site est conçu avec une idée de transparence « on ne cache rien, tout se discute ». Ainsi les révisions sur les papiers sont affichées dans des couleurs différentes (une par intervenant) et les auteurs doivent remplir des déclarations d'intérêt.

Le réseau

La maintenance et l'utilisation du CMS sont rémunérés par un tech fee de chacun des affiliés au réseau à l'Australie. Il n'y a pas de frais de licence pour l'utilisation de la marque « The Conversation ».

A l'occasion du départ du fondateur de TC, il y a un an, la question de la vision se pose. Quelles sont les valeurs fondamentales du réseau ? La question s'est notamment posée avec des demandes d'affiliation de Singapour ou de Chine, pays dans lesquels les gouvernement exercent un pouvoir politique qui influence directement les institutions de recherche et d'enseignement supérieur. Accessoirement, les affiliations posent la question de la sécurité informatique du réseau TC et il faut être vigilant à qui on en donne les accès.

1.3. Aline Richard Zivohlava, éditrice Sciences et Technologies

Brève biographie

Elle fait partie de l'équipe depuis le début et est responsable de la rubrique « Science & technologie » et de la rubrique « Data », avec l'aide d'un journaliste en alternance (trois jours par semaine) depuis septembre 2017.

Parallèlement à TC France, elle travaille sur deux projets de livre (un sur l'intelligence des animaux de leur point de vue et un autre sur une enquête sur les mutations génétiques).

Elle a été directrice de La Recherche.

Le réseau

TC a trois objectifs pour trois populations à sensibiliser :

- les chercheurs pour publiciser leurs travaux,
- les journalistes pour intéresser le grand public à la recherche,
- les institutions (qui financent TC) pour valoriser leurs productions.

Les chercheurs qui ne sont pas spécialement mis en avant par les institutions auxquelles ils sont affiliés ont envie que l'on parle d'eux.

La vulgarisation passe par le texte et l'image et aussi tous les autres médias possibles. « La datavisualisation nous a paru importante et on veut en faire pas comme les autres ». Il s'agit de demander aux chercheurs leurs jeux de données et de les rendre appréciables par le public. Un des problèmes est l'incompréhension des chercheurs pour lesquels les données sont leur richesse et qu'ils hésitent donc à partager et dont ils hésitent à consentir ce qu'ils peuvent ressentir comme une perte de contrôle, c'est-à-dire une représentation qu'ils n'ont pas générée.

Le CMS

Un autre problème est que le CMS n'est pas conçu pour la datavisualisation.

Le réseau

L'absence de publicité dans TC traduit la double exigence d'indépendance et de transparence. C'est aussi la reconnaissance que de facto les budgets publicitaires dans la science n'existent pas et c'est aussi important pour les partenaires-membres, en somme cela n'a que des avantages.

Les auteurs

TC est « dans le sens de l’histoire » avec des carrières de chercheurs qui dépendent aussi de leur travail de vulgarisation, notamment pour les jeunes. La question de « l’approbation du chef » pour écrire ne pose pas de problème car plusieurs signatures sont possibles, même si en fait le journaliste de TC ne travaille qu’avec un seul auteur. Il faut aussi noter que TC évite l’opinion pour publier des analyses.

Les projets

Un vrai datajournaliste avait été recruté un jour par semaine pendant 6 mois grâce au fonds Google.

L’idée était d’insérer des parties applicatives tierces sur le site de TC (embedded) comme Datawrapper (dont la licence a été souscrite par TC Australie) ou d’insérer des infogrammes.

Le problème est plus lié aux données d’entrée qu’à leur visualisation.

TC US a formé toute son équipe à Datawrapper ; en termes de productivité, l’expérience de TC France de recrutement d’une ressource dédiée était souhaitable.

Le réseau

L’équipe de TC France travaille en général à 4/5e. « On est une start-up de vieux ».

TC UK a une équipe très jeune avec des horaires stables du type 9h-17h ; à Paris, c’est plutôt 11h-19h avec du travail le week end et à domicile.

Aline travaille à 3/5e et cela lui convient, « on a un fonctionnement relatif à notre personnalité » ; personnellement c’est assimilable à un « statut de pigiste régulière ».

Les projets

L’idée d’un numéro annuel imprimé a été explorée avec Bayard. Ce n’est pas exclu, mais « sur des formats à trouver. Nous sommes très souples. »

1.4. Réunion de rédaction

De 15h35 à 16h15

11 personnes présentes, dont le directeur de la rédaction et la directrice générale.

La réunion se tient dans les bureaux en open space de TC France, chacun restant assis à son bureau sauf le directeur de la rédaction qui l’anime debout devant le tableau du planning de l’équipe.

Les thèmes de dossier à traiter sont évoqués ; par exemple le « sport » et les traumatismes à propos des jeux olympiques d’hiver et du tournoi de rugby des 6 nations pour lesquels il faudrait solliciter l’INSEP et l’université de Limoges, « mai 68 », « les élections en Russie » pour lesquelles l’EHESS et Sciences Po devraient être relancés, la « bioéthique » à traiter sous les angles de la science, de la santé et de la société, etc.

Les échanges s’articulent autour du fond...

« c’est presque de l’ethnologie, presque de l’anthropologie », « socio »

... de questions pratiques...

« mettez par mail, mais aussi dans le Google Doc partagé », « les sujets transversaux, on les met en home », « on annonce un événement », « tu vas sur l'outil et tu changes la date de remise, l'auteur reçoit un mail automatiquement »

... mais aussi des questions d'organisation :

« je n'arrive plus à gérer le flot de papiers qui m'arrivent », « j'ai 50 trucs et ils sont tous prioritaires », « le type, je vais le relancer, mais sans certitude »

1.5. Sonia Zannad, chef de rubrique culture,

Elle est aussi social media manager.

Le réseau

Le community management, « c'est par là que j'ai commencé ». Sonia exerce une veille quotidienne sur 15-20 médias en « partenariats informels » pour les inciter à reprendre des articles de TC. Elle envoie, à chacun, une présélection d'un ou deux articles à partir de la newsletter et suit aussi les analytiques de trafic entrant du reporting trimestriel pour identifier ce qui a le plus de succès.

Brève biographie

Elle a aussi la responsabilité de la rubrique « culture ».

Le réseau

Elle cherche les reprises « sauvages » qui ne respecteraient pas les normes de TC.

Quand un nouveau média souhaite reprendre un article de TC, des tests sont effectués.

Les auteurs

« On suit des chercheurs qui publient des livres pour les solliciter. Nous sommes en lien avec des éditeurs » (par exemple, Agone, La Découverte, Puf, Autrement...) pour publier les « bonnes feuilles », « surtout pas de recension ».

Ce qui est vendeur, ce sont :

- l'actualité avec des articles déjà publiés, voire avec des réactualisations, qui la mettent en perspective,

- les sujets « concernés » aussi peuvent être repris, mais en fait ils peuvent être trop niches pour un média généraliste.

Nous n'avons par réellement posé la question aux médias qui reprennent nos articles comment ils les cherchent et les trouvent.

Les articles

Pour chaque article publié par TC, l'éditeur, c'est-à-dire le journaliste, propose quatre choix d'articles « vous aimerez aussi » en pied de page. C'est fait « de manière artisanale, nous sommes peu nombreux, nous communiquons ».

Brève biographie

Sonia a coordonné des conférences scientifiques pour l'IRD (l'Institut de recherche pour le développement), a rédigé et traduit des rapports de l'anglais et de l'italien en freelance. Elle a participé à une start-up et a dû être sur les réseaux sociaux. Elle a aussi suivi une formation de coaching professionnel sur le bonheur au travail et, parallèlement à TC, elle continue d'écrire (Le bonheur pour les nuls chez First) et de traduire.

1.6. Clea Chakraverty, éditrice Politique + Société

Brève biographie

Elle travaille à la rubrique « Politique et société » internationale.

A l'origine, il y a un an et demi, elle a été recrutée pour l'édition internationale « Global perspective » dont l'équipe comprenait aussi deux journalistes Américains à New York et un Australien. Cette édition a changé de forme et a été refondue au sein des différents sites. Clea travaille en anglais avec des chercheurs francophones.

De formation CFPJ, elle a travaillé en alternance pour Le Monde Initiatives, Le Monde Diplomatique et en piges aux Echos. Puis elle s'est établie en Inde et a travaillé sur des sujets magazines plus longs. De retour en France, elle a repris des études d'anthropologie en Master recherche et a assuré le secrétariat de rédaction de la revue académique Tiers Monde. Elle a ainsi noué des contacts avec les Suds sur des sujets qui peuvent intéresser en France.

Le réseau

Clea anime des tables rondes et en profite pour chercher des idées d'articles pour TC.

Les articles

Elle édite en français et en anglais avec des angles différents et insiste sur l'importance de l'adaptation qui n'est pas une traduction.

1.7. Thomas Hofnung, chef de rubrique Politique et Société

Brève biographie

Il a couvert l'après-guerre en Bosnie pour RFI, a été journaliste international à Libération et a écrit deux livres sur l'Afrique.

Pour participer à la fondation de TC France pour laquelle François Rousselet l'a sollicité, il a décliné deux autres offres d'analyste au ministère des Affaires étrangères et au Monde Afrique car il en « avait eu sa dose du reportage » devenu très dur sur la fin. Au début, TC France était une équipe de six personnes.

Thomas a plus d'appétence pour le contenu que pour le management et son rôle à TC France a été défini en fonction. Ce qu'il trouve intéressant à TC, c'est « d'élever le débat, d'apporter du fond dans un média qui a du sens ».

Il est responsable de la rubrique « Politique et Société » et, parallèlement, écrit des piges.

TC France

Au début, c'était en mode start-up et l'idée pour lui qui était de compléter ses revenus entre TC et d'autres activités s'est formalisée en un 4/5e.

De manière empirique, un tableau affiché au mur de la rédaction récapitule qui est là et qui est en télétravail. Deux rendez-vous hebdomadaires ont été fixés :

lundi à 10h00 pour débriefer l'actualité, réagir à chaud,
une nouvelle réunion dont c'est la deuxième édition aujourd'hui, mercredi à 15h30 pour l'animation, les échanges, l'anticipation.

L'état d'esprit reflète une forme de gentillesse et « il n'y a pas d'enjeu d'égo, de pouvoir ou d'argent. Nous sommes au service des auteurs. » La hiérarchie est horizontale.

Le réseau

Il s'agit aussi pour lui de « travailler sur les republications grâce à mes contacts », c'est-à-dire d'élargir le nombre de titres qui reprennent les articles de TC. Il faut stimuler les reprises dans la presse généraliste, la PQR. Pour l'instant, c'est plus une affaire d'opportunités que de stratégie et ce n'est pas du tout sectoriel.

Les articles

Un autre enjeu est de développer la rubrique « société ».

A la phase actuelle, TC France reçoit plus de papiers et n'a plus nécessairement le temps et les ressources pour les éditer, d'assurer la fonction de journaliste, d'éditeur-journaliste.

1.8. Jennifer Gallé, cheffe de rubrique Environnement et Énergie)

TC France

« On est vraiment hybride, quand j'explique ce que je fais, les gens n'en prennent qu'un bout. » Chaque membre de l'équipe est autonome, a la liberté de travailler à domicile et n'a pas d'exigence d'horaires fixes.

Elle fait un vrai travail de rédacteur en chef, impulse, angle... puis « switche vers l'artisanal » du chercheur-pigiste, « nègre du chercheur », en même temps dirigiste et « au service de ».

C'est un rôle de journaliste car une de ses composantes est de chercher des sujets importants pour TC qui est un média, mais c'est aussi une fonction de secrétaire de rédaction.

L'équipe est très resserrée. Peut-être du fait d'une précarité.

« Je me suis mise au graphisme parce que ça m'intéressait », à la direction artistique ; « on fait tout ». L'organisation tient plus de l'économie du projet que de la répartition des tâches.

Brève biographie

Au début, Jennifer est arrivée pour couvrir la COP 21 et elle dirige maintenant la rubrique « Environnement et Énergie ».

Philosophe de formation, elle a enseigné puis est devenue journaliste à Métro pendant 9 ans. La composante intéressante de cette expérience a été que « les journalistes peuvent avoir plus de rôles, changer de façons de faire, innover ». Elle a ainsi participé au lancement d'éditions à l'étranger et a pris en charge le hors-média.

Puis, elle a lancé un magazine avec un de ses ex-collègues. Paprika (le magazine du voyage et de la gastronomie) a cessé de paraître début 2013 après un an de publication. Elle est devenue freelance par la suite.

Forte de ses expériences de lancement d'éditions et de start-up, elle a participé au lancement de TC France.

Sa motivation de chef d'une rubrique dont elle n'était pas spécialiste à l'origine est notamment liée à son intérêt à « ne pas être dans l'idéologie, bénéficier d'une certaine naïveté » et « comme on n'est pas la figure d'autorité, on peut poser des questions... mais à terme, il faut assoir sa crédibilité. »

TC France

Un trait commun de l'équipe est une certaine modestie, pas d'égo.

Et par ailleurs, en ce moment, « il n'y a pas tant de jobs intéressants ».

Un problème actuel est une production quotidienne trop importante, une contrainte qui peut nuire à la qualité. C'est pourquoi il existe un accord tacite pour, parfois, « s'autoriser à passer son tour ».

Les articles

La visualisation a sa place dans la rubrique « Data », l'iconographie « pour moi, ça passe plus par la photo » que par les schémas. Plutôt que des modèles, elle demande des métaphores, « le texte, c'est le schéma ».

Quand le « texte est abstrait, je leur demande du concret », d'expliquer par un exemple, un chiffre. Les articles de TC sont autre chose que de l'« intellection », il faut que les auteurs écrivent « pour que ce soit immédiat ».

1.9. Benoit Tonson

Brève biographie

Benoit est en alternance 3 jours par semaine dans le cadre de son master 2 de journalisme et communication scientifique à Paris-Diderot. Il a effectué un stage précédent à l'émission de France Inter « La tête au carré » qui a un partenariat avec TC France.

Il collabore à la rubrique « Science et technologie » avec Aline.

Les auteurs

En plus de l'appel à articles général envoyé à tous les auteurs, il contacte directement des chercheurs plus qualifiés.

Il fait une veille scientifique à partir de différentes newsletters qui ont été identifiées et auxquelles il s'est abonné. Par exemple, les chercheurs contactés suite à mention de leurs travaux dans La lettre du CNRS répondent favorablement à la fourniture d'un article pour TC dans 2/3 des cas

Le CMS

Trouver les « bons clients » dans la base TC France n'est pas évident, souvent parce qu'ils n'y figurent pas encore ; « je me repose sur Aline et les attachés de presse des institutions de recherche ».

Appendix 6.

Jstor Labs

1. Interview of Alex Humphreys, 26th September 2019

By videoconference.

Alex Humphreys (AH)

Jean-Louis Soubret (JLS)

Introduction and presentation.

After JLS said he had worked for Hachette and AH mentioned he knew somebody working for the Hachette group in the US.

The relationship between the conglomerates and the different countries is always interesting. In Oxford there was basically colonial politics always at play between the US and the UK where they wanted everything out of the colonies and the colonies would rebel...

How did you come to this topic, your dissertation topic is very interesting.

I had a previous experience of roughly 20 years in publishing. I started academic publishing by chance. Initially I wanted to do comics publishing. Then when I set up my own company NecPlus, which was now ten years ago, it was not full-time. I was approached by a friend who was starting a design thinking innovation studio in Paris. He had graduated from Stanford and there he had seen the ME310 course you are probably aware of.

Yes

He thought that it would be a great idea to start this in France. Over lunch we decided that I would be an ideal candidate to join and that's what I did. Now, ten years later, I have had some experience in publishing and also have experience in design thinking and innovation. I sold the company that I had started two years ago and I thought it would be a great opportunity to start a PhD to try to merge the two experiences into something more reflexive. The aim of this thesis is to actually try to put some bones under the flesh I already had, to structure what I was doing and had learned by doing.

That's what I thought design thinking was. That's how I learned it. Do you have a takeaway or recommendation about how design thinking can change specifically with publishing as opposed to other kinds of developments?

Yes, that's one of the takeaways I'm trying to structure for this thesis. It's still a bit complicated the way I designed it. What I could do maybe in one month or two if you're interested is to show you a model I have designed to be used for publishers and for authors. It is not about publishing. It is for them to be able to align why they publish, why they want to publish, with the final outcome of publishing. Because in my experience most of the time they publish because they

want to get published but they don't know how to. In their discussions with the publisher if the publisher is not very sure why he publishes the author in the first place there's a misunderstanding. And this misunderstanding can end up being a very frustrating experience for both parties. And it's really disappointing in the end because people are not aligned. So this model is about trying to align authors and publishers so that they go for the same results. It's also part of design thinking and learning by doing.

I'd love to hear more of the thinking and thoughts. I think publishing and design thinking is really lean. And I end up combining design thinking and some lean startup methods. We also incubate new things and we do ideation all the way through to some extent. And it's really hard. I mean the challenge with content is it's hard to be lean with content. A lean version of a book is not a short story. And a lean version of a collection is not a page that says what the collection will be, because until you see it it's really hard to see it. So that challenge of how to think leanly and test hypotheses when the content is the only thing that can really be tested, it is incredibly hard to do it. If you've had seen anybody being able to do that successfully I want to hear about it.

I have two case studies. I'm just going to tell you about it. But what I would be really interested in is what you are doing and how you got there. One took place a while ago already. It's about McLuhan's book *Understanding media* and how it was turned into *The message is the media* by a publicist and a designer. The second book was a much bigger success than the first one. To make a long story short it's probably because it was illustrated and well written. McLuhan is a great author, a great mind but his style sucks. So what they did is they took the content and completely recomposed and redesigned it. The deal they had with McLuhan was: "we do it with your agreement but you don't poke your nose into what we're doing. And we're going to give you the end result and you're going to approve or disapprove it. And we'll come back to you. but it's without you and we work on the wonderful content you have". He was not very good at publishing actually. This is one example. There is another example of which I'm very fond. My background before publishing was in controlling, financial management, so I always got bored having to study on management books. But these Swiss guys released the *Business model generation*. Initially it was a thesis which as any thesis nobody ever read. And then they turned it into a book. So the process of turning a thesis that nobody reads into a book that sold over a million copies in 25 languages is a wonderful example.

I'll have to read the case study. Reading on how they did that a little bit more. What I'm interested in is the steps along the way that validated the direction they were headed before they invested in two years of time coming up with those really awesome stick figure illustrations and everything. First of all I should apologize. I did not have time to read the paper in depth. I gave a quick cursory review just to make sure that you weren't raking me over the coals and saying that Jstor Labs is terrible. So I have not had a chance to look at it in great depth. And I'm happy to read it and send you some comments. I was curious. I think there were some errors in it based on things that you couldn't know since you were not there. So we can talk through some of those that I noticed. And you put out that sort of

value around not creating the full business model and that sort of things. And again those are things that sort of happened behind the scenes. We're a labs team, sometimes failures are good, we want it. So we rethought the business model. We've sought a sustainable solution and didn't get one. And that's okay. I think innovation happens at many levels. Some at feature level, at product level, and business level. And this was an interesting probably feature innovation. If there was a product innovation then it was because we ended up using the back end—the technology—and the approach that we used for a product that's now on a Jstor called Text Analyzer. Have you seen that?

I've seen it but I haven't used it in great depth. So maybe I should look at it.

I can start sharing with you. So basically what it does is showing topics round a book and then helps people get to a place within a book. So that's within a book. You can upload any document and it will read the document, figure out what it's about, and then help you find other documents. You can use that to say "I'm really interested in Victorians, not as in fantasy fiction", here are other topics. So schools are using this as a way to explore different topics. When you're doing academic research the topic is really hard, you don't know the jargon when you're doing something new. And then you get articles in JSTOR that are about those sets of topics. That kind of equalizes and you can filter and all that kind of stuff. We've even now added—because of the way that works—it reads the top of the article, or whatever you upload, news article, it could be something you've written, could be a course syllabus, your core class assignment, whatever. It reads in it and uses a topic model to find out what it's about. It's the same technology that we use for TopicGraph. We create that topic model using combination of JSTOR and Wikipedia. Because of that, because of the way Wikipedia is put together, it now does translated search. So you can upload your french dissertation (well you're writing your dissertation in english I think) but it'll read it in french, figure out what it's about, and then translate those topics into english to find english-language relevant articles. The language topic models are still very much in development, they are still alpha basically. I need to find linguistic experts in each of the languages to help hone those topic models. I haven't and I'm hoping to get some grants to be able to do that. That was one of the outcomes of the TopicGraph that was very different, that you might not have known just looking at it.

My feedback when I tried to use this functionality of putting a text in and getting the results from TopicGraph is that it didn't work for. I put my email address two days ago and I got no feedback.

Did I understand well that Text analyzer was actually one of the outcomes of TopicGraph? Text Analyzer is in the environment of a library whereas TopicGraph is in the environment of a book. Am I right or is is something different? Because with TopicGraph you are only talking about the book or the document that you put in, whereas Text Analyzer—from the document—will take you through the whole library.

It is both to some extent. I'm gonna see if TopicGraph is working. It should be working, it's been, but if it's not we'll get it fixed and I'll let you know.

Okay I put a PDF document, put my email address, unless I put the wrong address which happens to me sometimes.

I'll find out. It should take only 10 minutes and so we'll find out in this call. I just uploaded the document. So it should take only 10-15 minutes. Two days would be if you'd got manual people reading it for you. Regarding the difference between Text Analyzer and TopicGraph it's sort of an inside-out or it's the direction. So if I have a book as a reader, that book does multiple things for me. One, it gives me information that's contained within the book. And TopicGraph helps find that information and understand it, and all of that. But the other thing books do, is they point you to other things through bibliography, through citations, through allusions, etc. And Text Analyzer helps with that. And one of the things that was really interesting about the "Reimagining the monograph" project was it helped understand all of those different news pieces, the ways in which people use books, and how diverse they are, and how many there are—all contained within this one thing called the book. So when I hear people say "I want to create a book reader or an app to make it easier to read books or whatever" I think "Oh shit! There have to be 100 million of them". But there are so many different ways [that you can take] and activities that you can do with a book. If you really want to take advantage of the digital medium you're gonna need a hundred different use cases that are optimized. I mean maybe they're integrated because it's not just gonna be replaced. Otherwise use the damn book like there's got to be something more.

One thing I wanted to flag was the Text Analyzer. The other thing you talked a little bit at one point is about our grouping methodology and selection of ideas. And I wanted to expand on what you see a little bit. The way this project was structured was we started out with the user experience, user research which was incredibly helpful and really interesting. I loved those two-page visualizations and all of that. We brought those and then we convened a workshop with a lot of external people. So it was not just our team. It was Amy Brand from MIT, and September from AAK, and all these innovators and smart folks from a variety of different disciplines, from a variety of different functions. So there were publishers, and librarians, and scholars and datavizualists all of this kind of stuff. And we had a full-day workshop where we shared the user research and then came up with these ideas, the 8x8 sketches. There have been a hundred or two hundred ideas up there. But they're all sketches, and they're not necessarily full-fledged things, and they were overlapping, and all of that. What we did in the meeting—and this was because there's a difference between what the Labs team does and what these workshops can do—a workshop of 22 people many of whom are not product designers. They are not going to be able to say "okay these are all in the same area this is how it works, this is what's important". That's not what they do. What we wanted to hear from them (and I think that demand, the dot voting) is place a dot next to something that excites you, something that makes you jump out of bed and say "hallelujah". That's what I care about, that's what I want to see in this world, and that's difficult. We see some clusters of interest. But very often something didn't get voted but we still believe that there's some opportunity there and they're just not seeing it yet. We'll prototype it. That was that day.

And then the next day the Labs team got together. And we came up with six core ideas that came out of this workshop. At least core ideas that we had a chance of building in the next month. And so we did a paper prototype of those, of each of those user tests on that day, to establish which one is the most interesting, the more clear. Interesting and clarity are the two key things at that stage. And then we put that again through feasibility assessment to choose which one we went on to build.

I need to publish an article on this in the ALPSP Journal. They've been asking me to write something about this. And I haven't. One of the things that came out of that process (I don't know if you saw it in some of the presentations afterward) were four more ideas that we never got to build. So I did user testing in front of audiences which was an interesting way of libraries and users. I have the data from all of those tests, and then bringing that together and make a recommendation. Is that helpful?

I didn't know everything that went behind the scenes. So that's very interesting. But I had the impression, and I still do when you talk about this particular workshop and its outcome that it was in between. I'm not saying that design thinking is a pure methodology where you have to go from A to Z following B,C,D, and so on. Because I practice it, I understand that there's a mix of lean, of scrum, of whatever you want. As long as it works it's fine.

I'm not orthodox about any process. I was doing design thinking and it took a year before somebody said "hey what you're doing is design thinking"

But still, now I have to be more reflexive and write a paper to be assessed. I would like to have your opinion on what I would describe as just in between design thinking and other methodologies. If I were to go through design thinking in a very orthodox manner I would empower the people doing the workshop to make a decision. Maybe it takes more than one day, maybe it takes another day, maybe half a a day. I thought it's a bit like in the business model thing. I thought you stopped in between. They didn't go to the very end of it. I think that what you did is you made a decision to go half way: "I trust people to give me insights, feedbacks, and everything but (sorry to put it this way) but I don't fully trust them to give me a solution I can walk out with". If you do that and if you don't trust them—and there is a lot of reason not to—to make it a decision because you know that you're not going to be able to work on.

What was very remarkable in your project is that you actually achieved it within the next one month and a half or two months, which is very short.

One month.

That's very impressive! You could have used another methodology which is called C-K. For example as I mentioned to in the paper. Maybe you are not aware of it?

No

It was designed by an engineer who is also a statistician, in France, very methodological, Cartesian. His point is that if you want to be very radical about innovation, you don't leave it to the

users. In the end, you have to do it yourself. What you have to do is to try to create with the users, to go as far as you can go into creativity. When you are finished with creativity, you take it into your hands. With all the ideas exposed, you take them one by one, each and every idea. There are two spaces and you first go from the “concept space” which is where you have all the ideas that were expressed in a workshop or during interviews. You take them to the “knowledge space”. And in this space you go and see experts, specialists. You ask them “with this concept what is the knowledge available?”. If the knowledge is not available “what can I develop to make this knowledge workable?”. So it’s really a tool. So you are a bit in between because you did a two-step process. But, at the second step, you didn’t go as far as these guys would go. So that’s what I was getting at. I wanted your feedback on that, whether you feel that I’m wrong or that I misunderstood the process.

Design thinking... at the end of the workshop we had six or seven areas that we could point to and say “it looks like there’s interest”. And are you saying that in design thinking we would have carried that all the way through in the workshop to “this is the one we’re going to build”?

Yes. Which is a difficult process. If you vote, which was what you did, it’s complicated.

What you mean is, is it like in sprint methodology where there is a clear decision maker? That sort of thing that gets you there. Or a sort of “the group decides” by organizing and prioritizing? That’s the second one, decide by organizing. You help them to decide by organizing.

I don’t know how that works with this group. My experience is that these ideas, and the way that we do it, they’re incredible and really helpful. But at some point you also need the expertise of product design. So if we’re doing them ourselves they’re good. But this was mostly about a way to hear you, know what are the problem areas. I don’t know if we would have been as successful. I brought them along on the following month, and I’d write an email every day, showing them where we’ve gone, and ask for feedback. But that’s a bigger different workshop, I think. And I think it has different participants. Is the idea that you would do that with non-product designers for the actual target users?

The thing is you can’t do it with 25 people.

That’s a lot of people, it’s so huge.

Too many.

Usually we try to do these things with a dozen. We got greedy with this approach. Once you have started inviting people... With that approach we’ve had success having that many people come in. We did a really successful one with Dumbarton Oaks for plants. They’ve all been about that size. So with the smaller group is it mostly..? But tell me about the composition of those groups. It is primarily the folks from the design schools who are doing it or are they bringing potential users? Who are they bringing?

I have a gap in my experience and I'm going to relate to what I did, which is my own experience, not in publishing, in other sectors like pharmaceuticals. Typically if you want to have a decision and if you want to have traction—if you want people to be involved and if you want the thing to be developed—you will probably need one person from the technical team which is going to develop—the technological team, you will probably need one accountant—somebody with figure, probably one sales person, one product manager. If you get this, depending on the projects, if you get these four, five, six people around the table then you can add others. It doesn't matter. It's important to have a lot of diversity. It's also important to have proponents who will do things on your project, and opponents, people who disagree. There always are pain in the neck during a project. It is better to put them in the first workshop, in my experience, because they would be involved a later stage anyway and then might kill new projects automatically.

So the difference is... what you're describing. First of all the Labs team has engineer, user experience, project manager. It has those different components. The difference is that this workshop was including people outside the organization. They don't have a stake in building the actual product. We've done things like that. It's usually like design sprint for a flat field. So when we went back to Columbia, three weeks later to finish the building, that was very much like that. It's just our team and we had user test. But it was us working together. This was an external workshop and they have no skin in the game. So it is different in that regard. Those workshops, if anything, are more input for that internal team that you're describing.

Yes. And that makes me think that what I'm describing is something that's internal to the same organization and what you are describing is something which is in between. Which would be like an ideation group, like a focus group. What you did is actually the two steps but in a different setting. I should be less radical in my comment.

Yes. I think so. Part of that is driven by the fact that Jstor is a nonprofit that tries to operate within a community of libraries and publishers that are all friendly. It's a way in which we do business. We work with them in a way that's a little different than any sort of customer relationships.

I've had some experience with government organizations or NGOs. It actually took me a while to adjust. I was aware of the differences but it took time to experience these differences and to get a grasp of what you were saying. To get a real grasp of what you're saying Thank you for all of this. May I ask you a couple of questions?

Yes, I'm adaptable.

I wanted to ask you about both your background and JstorLabs background. Would you say that Jstor Labs, and Jstor as an organization, Ithaca as an organization, is into digital humanities? Jstor Labs started out, I mean I started Jstor Labs six-seven years ago now. Our goal was to test out new ideas. I'll give you a little bit of the background on why that happened. I have been in publishing and academic publishing since 2004, for 15 years now. When I came to Ithaca...

before I was at Oxford University Press and built some award-winning platforms for the reference group. It was usually somewhere in between the business and technology and always in new product development. Some sort of innovation, building new things and development. I came out of the dot-com era, back in the nineties.

Ithaca, like all academic presses or anybody in the telecommunication field, is going under tremendous amount of change. Value propositions are changing hugely. All the stuff that's going on now with fighting with Elsevier and all of these things. Everybody is trying to change what they're doing. So I led an effort to essentially, at JSTOR, change what our value was, from "essentially we provide content and people subscribe" to a technology company, a product-driven technology company providing a platform. You can do many things on it. So we have to differentiate ourselves based on all of that. That's a huge culture change and it was a huge technical effort as well. As we were seeing the light of day for that project we've replaced all of the search to build the new system. We knew that what we were building could stand up. We realized that we were going to be successful and that our strategy wasn't going to be limited to what we couldn't do. Our strategy basically used to be "we have a hammer so what we're gonna do is hammer things".

With all the things we can do we've had more opportunity to explore new territory figure out how we have an impact. What kinds of impact we could have with users. But we didn't have a way to test those things out before saying "this is what we're gonna do". It was either all in or all out. That led to some fairly expensive Big Bang sort of projects. So we built the Labs team as a way to test out those new ideas as quickly and lean as possible. We did that and have been doing that since. As we've gone about doing that, and as we've gone about finding additional value from the things that JSTOR has to work with before testing. That being first and foremost among those. We've found out that essentially we're using a lot of digital humanities methods and their tools. Simply because we're also looking at corpus analytics and that's a language processing that we can use. But we're taking them a step further. The way I describe this is that we're essentially and applied digital humanities shop. We're not inventing new DH methods or new methods for corpus analytics. We adopt them but we're applying them into a product, a tool that is geared to a specific use case, a specific user. That has been really good. So we end up being fairly aligned with DH but that's just for Labs. Jstor more broadly supports DH and it's really good but it's bigger than that.

Thanks a lot for the background. There are controversies, discussions about the DH and how they apply. That brings me to the next thing I wanted to ask you. One of the things that remain to be done after the project was implemented—after the beta version was implemented—, was to create API, snippets for these functionalities to be applied into other platforms.

I don't think I made promises. What we're doing when we were doing these projects is we're testing out these ideas. We're trying to see. We've been planting a lot of seeds. Most of the ideas that we end up with, there's something there that could be run with. It's been a matter of "is it worth hiring a full-time person or dedicating a team for six months?" That's

going to cost many hundreds of thousands of dollars. Or do we want to use something else? So we make the decision every once in a while to incubate something and turn it into a full-fledged product, to make it available on a platform.

With TopicGraph, I didn't see an avenue for it. We explored business opportunities for it. I didn't see a place for it, like a really strong business demand that could make a sustainable service. And certainly not one that JSTOR could provide. It felt to me like if somebody were to do this it might better be a library catalog. I'm not sure that, being all over content, Jstor is the primary place for it. We saw more promise for productization in the underlying technology of Text Analyzer which we have productized and there is an API for and it is available for all kinds for users.

I'm coming to that because it's related to something at the back of my mind, with DH also, and with what I wrote about you not going the full distance, stopping just before the business product. It seems to be a trend, from what I've seen, in a lot of DH projects. A lot of them are really great. When you see the thing you go "oh my God if I could have that I would really love it". But then you realize that the scope is so limited that it's not going to be really useful. "I specialize in communication and there's not even a tag for communication, so what am I going to do with it? It's not for me." What I said is that, after the business model, I go back to my initial thing which was design thinking. In the methodology, the last step is "deploy". To try to have it implemented in services or sell it. At least try to have somebody adopt it. Did you go the full length trying to implement it, deploy it? Or is it like "we've done this, it is great, and it's better if people wanted to just take it."

In my experience of DH it tends to be very niche, and specific, and wonky. I also think that they don't ditch often, it doesn't do a very good job of thinking about users. They think about what's possible but not what is actually valuable and then designing around that. Our approach tends to be—and the best example of this is the "Understanding" series, though there are other examples of this—that we start out exploring the territory being very specific. So with the Understanding Shakespeare project we were looking specifically only at Shakespeare. We started out with just one play, just to see what was possible. But as we're doing that we're constantly thinking about "how do we generalize this? What is the potential in the long term?" But we have to start solving the specific otherwise there's no value. For Shakespeare we started with Shakespeare but the idea was "Wow wouldn't it be great at some point if we could have this for everything and people could just upload a text?" And it would be great there for JSTOR readers. We're still walking that path.

But basically what I see is the Labs projects being very discipline- or topic-specific experiments. We're always looking at these as a way to generalize them. So the Interview Archive thing that we did this summer which is documented. It takes the full-length interviews from a documentary on Martin Luther King. I'm sharing.

Hold on one second. TopicGraph might not be working.

Interview was a partnership with the Kunhardt Film Foundation that makes documentary videos for HBO. They basically came to us and said “I do these interviews, I’m interviewing these amazing people, Jesse Jackson and John Lewis, and people who witnessed and were led, this important documentaries for civil rights history. And then I used ten seconds of it in the movie and the rest of this interview is lost. So how can we make the full length interview available right now?” He gave us the transcripts, and he gave us the videos. We were trying to figure out how we could use these for educational context. We tagged these transcripts with topics. So if I’m interested in something particular I can look at that, and I can see background on my topics of interest. And there are mentions of them, as well as articles and chapters in JSTOR that are about so. Basically as I’m watching the video I can get background on anything they’re talking about, jump around, and a similar sort of exploration but with video and oral histories. And then I can expand this to bring in other voices. It could be pretty powerful. So we start with a very specific idea which is just King in the wilderness and does this one set of interviews. The idea is that, over, you could imagine something that does this for any kind of interviews.

Understanding Shakespeare is similar. We started with Shakespeare and we went to the Constitution. We did the general thing on the site. I’m doing a project now with Dumbarton Oaks on plants and linked open data. It’s super specific, it’s so narrow! Which is what academics do. But I think there’s an avenue forward that we can prove it working. I think there’s an avenue forward building a platform that could work for almost—at least almost any ideas maybe in social sciences. We’ll see what happens. It could be pretty cool. That’s how we approach that for the problem of generalization and it’s always a step at the end. Sometimes that step takes three years. It’s three years down, it gets dusty for a little while—while we’re seeking grants or partners or opportunities.

As I said my experience in design thinking started by chance. We did things and now this thing has developed into a studio which is employing 50 people, has branch in San Francisco and operates two buildings in Paris. It has grown bigger. It was not enough to do things which are so good for companies, great things that brought results to companies. Companies were not always coming back for more and new companies were not coming at all. The business developers who were hired are spreading the world and we are getting more business. I’ve noticed that this last step of going to knock on peoples’ doors to try to make them adopt what you’re doing, and what you work so hard for, and what you really believe in is something that I have rarely seen academics do.

Their motivation is different. They care about impact if anything. Once they build something, even if they believe in it, their motivations and their reward systems are different. They need to move on to the next thing. What they want to get out of the project is a paper based on the innovation. There’s no value in increasing the scale and growing it.

What you said reminds me of a conversation I had in Cambridge University Press about a huge project on Shakespeare digitization. I think it’s great but it’s a pity that you didn’t talk to each other.

Who was working on it in Cambridge?

A publisher. I can't find his name right now but could send you his details. And the other one is I spoke to the person in charge of the development of the Cambridge Core platform. She told me that what they are doing is not a project, it's a program. She meant that they're not going to finish in six months. It's going to be ongoing, to be forever, or at least for as long as they can foresee it. Maybe that's a big difference. I should make a point of that between your project on a program.

I think it's important. When I think about the Labs team, that's very much a program. We're not just like each individual project you mentioned. TopicGraph is not going the full distance, that's because of the program needs. We think there's more money, and value, and opportunity, and impact to our users and our community by moving through other projects. And we want to have some things fail a little bit because all of it is about learning and be able to convey that learning to the community and internally as well.

It brings me to the sensitive question of money. Cambridge University Press for example is also a not-for-profit yet they turn a little profit. They are sustainable. How do you live at Jstor Labs? Are you sponsored? Do you have sources of income?

JSTOR funds the Labs out of one of the one thing that we do—with subscription revenue that we get for the collection. In recent years, that's two or three years, the Labs team has grown significantly. A majority of that growth is grant-funded. So we are funded up to a certain level. We're doing bigger and bigger projects and that delta is all funded by grant.

Thank you for being so transparent.

I'm very lucky not have to seek grants for everything we do. I've seen what that does for teams and it really hurt them. I'm very lucky in the setup that we have.

That's great. I'll ask two more questions if you have time for them. The first one is you've probably have had a lot of use metrics about both the TopicGraph and Text Analyzer. What do you do with them?

With TopicGraph, there's little that we do with the analytics because they're essentially flat. There's nothing. At some point I may use those analytics to justify shutting it down. Because it costs money to keep it up. But at this point there's not too much more that we're working hard to learn on with TopicGraph. With Text Analyzer we did a decent fit as we were. Analytics come in a lot more when we're trying to scale something up and they get more widely available. So we did a lot. Are you familiar with the Ash Maurya Customer Factory model?

No

Ash Maurya is a lean startup guy. I think it's called Scaling Lean his second book. He wrote a book called Lean Canvas or something. It's basically a somewhat alternate version of the Business Model Canvas. He has a metaphor called the Customer Factory which is based on—have you ever heard of?—Pirate Metrics?

No

Pirate Metrics, it's something like that AARRR pirate metrics. A view of users and it's mostly more e-commerce direct-to-consumer metrics. Basically, "are users aware of your product?" they're activated—they use it—and then you get value from them when they return—they come back—they recommend it to somebody or they pay. The Customer Factory is a different is a way of viewing those metrics that I find really helpful for a product like Text Analyzer. So we would use those metrics to figure out how we were doing acquiring customers, how we were doing activating them, how we were doing on getting them to return, etcetera. etcetera. So we paid a decent attention to that. I personally feel we were as successful at scaling that up as I would like, for a few reasons, but we're not done yet.

I knew what you were talking about. Similar things with different names.

Pirate Metrics wouldn't make sense in French.

My last question because I know you are tight on time. And thank you very much again for the insight. I am interested about the places where you work. Do you have a project room? What are your physical settings like? Offices?

Most of the team is in Ann Arbor Michigan and I'm in New York. There's an office and they have an open floor plan with some desks. There are some rooms they can go to, to work in if they have creative stuff. Usually because of my remoteness, and there is one other team member remote as well, when we're really doing the design thinking stuff then, and we're really diving into something as opposed to preparing for, or just building, then I go to Ann Arbor. We get a room and we work collaboratively all around the same room. There we do one of these Labs weeks which we try to do on the road wherever possible. So you'll find a library who has some interest and where we can get potential users and we'll just set up shop in one of the rooms right there. We did Library of Congress last year. We do that two, three, four times a year.

You don't have a specific project room as for Cambridge Core which had a specific project crew. Alex, thanks a lot and I don't want to take more of your time. I'd really be happy to keep in touch and to send you feedbacks as it goes. If you have things that you can think of please also do.

Do you want more specific feedback on the draft that you sent me or do you want to revise it based on this conversation and then I'll give that feedback?

I don't want to waste too much a your time so I'll do a revision. You can work on that if you wish.

Thanks a lot good luck with your dissertation and and I look forward to hearing more and see that

Okay we'll keep in touch within the next 10 days. Have a good day.

Appendix 7.

Cambridge Core

1. An agile platform for programs and projects

Since the launch of Cambridge Journals Online (CJO) in 1997, the shift to digital has significantly accelerated to reach a point where it is challenging the business model of the Press of the last 500 years. In response, the launch of Cambridge Core in September 2016 is a major investment in the recent history of Cambridge University Press. Because the activity can no longer only rest on the content being king, the University's aim "to advance knowledge, learning and research" must be pursued through new kinds of skills. For instance, information technology was repurposed in order to embrace a change of paradigm (from waterfall developments to scrum) and the apparent simplicity of the front-end was prioritised over a temporary complexity of the back-end. Cambridge Core epitomises a shift from a product-centred approach to a user-centric commitment and an endeavour to add value and, at the same time, to simplify the user experience. Overall, a hybrid agile set of methods was unfolded by the internal Core project team and the external consultancy Nomensa that could be called DT@scrum. It is based on tools and methodologies such as the personas, redesigned "rhetorical" tickets (a user story and a conversation), the organisation of the Core team on the principles of intrapreneurship, etc. Another key feature was the emphasis on communication as a key innovative and transformative modality of the engagement of stakeholders (e.g. decisions made by committee, online progress reports available on the Intranet, "lunch and learn" sessions opened to all). Visual communication (e.g. a dedicated project room set like a design studio, visual management) and "physical" modalities were also deployed (e.g. stand-up committees and active workshops).

2. Overview and history of Cambridge University Press

The Cambridge Core platform is part of Academic Publishing, one of three publishing groups of Cambridge University Press (CUP); the other two are English Language Teaching and Educational Publishing. CUP—which was founded in 1534—is the oldest university press and, as such, the oldest media business in the world. Part of the University of Cambridge, it aims "to advance knowledge, learning and research". It employs 2,845 staff in 50 offices around the world (57% outside the UK) and generates a turnover of £327m. (in 2019 vs. £263m. in 2014). Peter Phillips (chief executive) declared that "the shift to digital is accelerating; more material than ever before is available free of charge to end users; and technology companies large and small are challenging the business models of the last 500 years." (Annual Report 2013). As a result, 43% of sales were of "digital and blended products" in 2019, compared to 15% eight years ago.

The Press' digital strategy was initiated with the launch of Cambridge Journals Online (CJO) in 1997. Then significant upgrades to Cambridge Books Online (CBO) and CJO platforms were released in 2013 followed by the launch of University Publishing Online (an online portal that

provides access to e-books from partner presses alongside CUP's) in 2014. Eventually, the top management of CUP announced the launch of Cambridge Core in September 2016 as “one of the most important investments in our recent history” (Peter Phillips Annual Report 2017) requiring “new kinds of skills and business models” (professor Stephen Toope, chairman, Annual Report 2018).

Cambridge Core is about users, technology and content. First, “in the world before digital content [CUP] operated at several removes from customers, working via layers of distributors. The digital revolution has changed all that, and one of the keys to our future success will be how close we are to the communities we serve”. Second, because some 80-90% per cent of CUP Academic Publishing is disseminated to researchers via the platform, the technology provides on one hand cross-referencing between materials, innovative research tools, etc. and, on the other hand, its built-in flexibility allows for continuous development of features and functions. Third, in terms of content, it is aiming to achieve economies of scale with over 34,000 academic books and one million journal articles at inception. It will then grow with CUP's Academic Publishing yearly output of nearly 400 journals (vs. 307 in 2012) and about 1,500 books (about $\frac{3}{4}$ in HSS and $\frac{1}{4}$ in STM).

Managing complexity is at the core of this project; i.e. the whole is supposed to be more than the sum of its parts. CUP had “an history of siloing these groups too much” (publisher at CUP) and merging the two pre-existing platforms (CJO and CBO) in 2016 was a shift from a product-centred approach to a user-centric commitment[1]. There was an early involvement with all types of customer—researchers, librarians, authors and the learned societies—and almost 10,000 people were consulted through the development process. In the run up to the launch librarians were given trial access to the system and the project team used their feedback to refine the platform further. Users were extensively consulted before launching Cambridge Core. In terms of information technology (IT), it was also a change of paradigm from waterfall developments to scrum.

Before Cambridge Core, the priorities were first business, second strategic, and third users. Now, it is users first. In order to implement this new approach, after biweekly retrospectives, the Core Prioritisation Group meets fortnightly. Its members are the head of Cambridge Core and representatives of the various departments of the Press as “the business” (marketing, sales, editorial) and “technology” (CJO, CBO, content). It helps to reprioritise backlogs and to raise concerns.

3. A program about users, technology and content

The Core program was started in the spring of 2014 to replace the two existing platforms (one for books, another one for journals) and because they were becoming unstable, fragile. The hybrid method that CUP adopted was agile and could be deemed “DT@scrum”. As per the scrum method, developers were organised in small groups (3-9 persons) coordinated by one of them as a scrum-master and were working in biweekly successive sprints. Between each sprint each developers' team had a sprint review, a sprint retrospective, a product backlog discussion with

the product owner and a sprint planning meeting for the next round. The product owners had a pivotal role as they were part of the project and were the representative of the users and the stakeholders (they should be able to prioritize the items in the product backlog and assess their feasibility in a sprint, or number of sprints) and were trained to format them as project tickets. Design thinking can be invoked in terms of user-centricity. Since people at CUP “did not really know who their users were”, a survey was commissioned to a design agency. Its findings were summarised as four personas. Collective learning was favoured in the form of a series of workshops facilitated by designers of the agency with external users (academics) and internal stakeholders (including product owners) in order to co-design the users’ journeys of the four personas. Enabled by these workshops, the product owners subsequently carried out their second pivotal role to first inform the stakeholders, and second to ask for their requirements and get their feedback. Necessity is the mother of invention and the more wicked a problem is the more a design thinking approach is needed. In other words, if there is no problem, or only minor issues, they should be solved as business as usual and they do not require major investment and organisational changes of the nature and scale of Core.

At the overall Academic Publishing group level, the overarching strategic issue was the “shift to digital” which is “challenging the business models of the last 500 years”. The field of academic publishing has historically been seen to move slowly. Now, sudden uncertainty in the near future means that the “ability to support experimentation with new purchasing models” is urgently needed. One major change was the shift in focus from the market to customers, and—of the three characteristics of customers—from payers (e.g. libraries for subscription and funders for open access) and promoters (e.g. learned societies) to user-centricity (e.g. academics as authors and as readers). Hence CUP is keen to adopt an iterative approach of business models instead of the more traditional view of “the business” as the three departments of marketing, sales and editorial. The business used to be the only entity directly in touch with the customers and their input and goals were prioritised over those of the other departments. So, the business was devising business plans, which the other departments had to support, and activities were thought of as front-end and back-end. The shift to digital meant that “the technology” (i.e. CJO, CBO and content management) had to be re-prioritised. At the same time, the overall CUP user-centric commitment¹ required that they too be directly in touch with users (rather than consider them through the perception of the business). All aspects of the Academic Publishing group’s activities were impacted and the internal Core project team and the external consultancy Nomensa

1 A creative result of merging books and journals on the same platform was a form of editorial hybridisation “combining the best features of books and journals” for graduate students, researchers and practitioners. The series “Cambridge Elements” was launched in 2018. It was “conceived from the start for a digital environment, and with the ability to be regularly updated”. Elements are concise (20,000 to 30,000 words), original, peer-reviewed scholarly and scientific research, “foundational building blocks” of a discipline, “original insights” into frontier topics, and “masterclasses and advanced tutorials” on emerging topics. They are commissioned and organised by CUP and edited by leading scholars. They are designed to be read online by members of subscribing institutions and can also be bought as paperbacks through print-on-demand [£15].

were pivotal in implementing these changes that materialised for the three dimensions of users, technology and content.

First the user experience, due to incremental updates and improvements, had deteriorated because the platform was becoming “cluttered with content and features”. This shared view raised two sub-questions: (i) who are the platform users? (ii) how do they use digital platforms and what are their expectations? A self-admitted concern was that CUP did “not really know who our users were” (Core team). Since internal user-data were not appropriate, it was decided to commission a study to strategic UX design agency Nomensa. In their own words, their consultants combine “expertise in psychology, user-centric design, accessibility and technology to create ground-breaking digital experiences”². Nomensa interviewed stakeholders, organised and facilitated workshops, conducted an internal survey of engaged and non-engaged users, and produced a concise report³ with their findings and recommendations. The Cambridge Core team acted as mediators between external clients (i.e. users-buyers-promoters) and internal stakeholders (i.e. “business” and “technology”). The preliminary research on users, which were recruited by CUP, suggested that there were subtle differences in the behaviours of researchers in STM and HSS, but that they were not substantial enough to warrant a different user journey (this insight was more surprising than controversial). An issue remained that the first release of the Cambridge Core UX was “book by book and article by article” and there was no way to move from one to the other seamlessly whereas the Business wanted “to deliver is a library-like entity, not a book-like entity”.

The persona building process started with two face-to-face ideation workshops with the CUP stakeholders in Cambridge and a web-conference discussion with those in New York. The output was a list of questions for interviews with 94 internal respondents and 51 external users⁴. The data collected were segmented into patterns (see Figure 210) and then presented for review and discussion at a CUP workshop. Four “wireframe personas” were built and visually designed along with customer journeys. They were then reviewed and amended via teleconference. Finally, two outputs were presented: the findings of the research to board-level members, and the personas and recommendations on how to use them to the project delivery team. “The personas have been surprisingly useful and it was a good job as a synthesis”, and if they had been too specialised, “it would have been less useful because we publish across a broad range of subjects” (academic publisher).

2 On the Nomensa website, “What we do” page (www.nomensa.com/ux-services) viewed 12th September 2019.

3 Grimes, Andrew, AOP Re-architecture Project, Nomensa for Cambridge University Press, Final report 24th June 2014.



4 Since it is a sensitive issue, the sales team selected the librarians for the tests. The tests were held online at their place of work.

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Figure 210. Structure of persona and user journey by Nomensa for CUP [captions added]

For each persona, “user journeys” were described and tasks were listed (see Figure 168). Then, there was a series of workshops facilitated by external designers of the design agency with staff of the press. The aim was to determine what the users’ “requirements” were. The Core team was trained by the consultants “to ask differently for requirements” and, for tricky or ambiguous projects, product owners could seek the help of designers of the external agency to design a ticket. The two components of a user ticket written by one of the four product owners are a user story which reads as “As [persona X]; I want to ...; So that ...” and editable acceptance criteria “Given...; when...; then...” (see Figure 211) and a conversation (see Figure 212).. The requirements were sorted out in “needed” and “not needed” and were entered in MS Excel spreadsheets (later to be entered into Jira, the project management system in use at the Press).

<p>User stories</p> <ul style="list-style-type: none"> • User need (personas) • Expected result • Not a solution • Acceptance criteria • Basis for discussion • Reviewed and agreed to by entire team  <p><small>WikiData User Stories Paul Downey Creative Commons</small></p>	<p>Conversations</p> <ul style="list-style-type: none"> • A user story cannot replace a conversation • Tap into developer expertise • Acceptance criteria will evolve (improvements, compromises, splitting) • PO/DEV collaboration is essential: quality, creativity, minimising waste (shorter feedback loops) • Colocation helps  <p><small>Conversation N. Sjogren Creative Commons</small></p>
<p>Figure 211. User stories (Lunch and learn, 2016)</p>	<p>Figure 212. Conversations (Lunch and learn, 2016)</p>

A preliminary work helped to determine what the users' requirements were. It was also obvious that, beyond the initial deployment, cluttering would soon happen again if the development process was not internalised (hence the training of the Core team) and made easier. The need to release more quickly was implied by customer-centricity and the nature of agile is really facilitating a customer-driven approach which has become central to CUP's culture.

The main problem with the second dimension of technology was that the CJO and CBO platforms were becoming unstable. It has led to "painful discussions" with customers and publishing partners. There was a "need to outgrow the technical framework" because the needs outgrew the platform infrastructure. CJO was 17 years old and the waterfall cycles (3-4 times per year) with their three-month tunnel effect were too long. It eventually could no longer cope with demand. A lot of the creativity and design was done externally by "web experts rather than [internal] system experts" (CUP IT staff) and a user-oriented approach was privileged over a product-system approach. Even though Core had not fully been operational in 2017, the releases were fortnightly. Stakeholders considered that even though they were "already better served by Cambridge Core" (academic publisher) which is more stable, faster, with a more intuitive, cleaner and simpler navigation; "it falls short on certain functionalities" (e.g. no e-commerce, no content alerting, no multilingual option, no single sign-on, no PDF offprint delivered to authors, no CrossRef linking). Self-admittedly "Cambridge Core is not yet business as usual". The launch of Cambridge Core in September 2016 was the front end, which is customisable through an integrated Content Management Service (CMS), and displays the content online. But "below the surface" the content was still fed from outside sources (e.g. typesetters) into an internal infrastructure and through CBO and CJO. It was then processed and uploaded on the cloud into Cambridge Core which was an interim SaaS-like back end platform consisting of Application Programming Interfaces (API). The apparent simplicity of the front end was actually achieved at the cost of a temporarily increased complexity of the back end. The IT department also discovered, during the platform development, that "agile does not work well with offshoring" and internal development teams in Cambridge and Manila had to be dimensioned accordingly.

With the third dimension of content, one problem had been that the authors' data in CJO and CBO were not unified because they had initially been driven by editorial purposes and they were performing different functions between books and journals. It was therefore difficult to identify a given author across the board. Conversely the marketing and sales have "broken down

the siloes between books and journals” because they are addressing the same format-agnostic people through the same platform. Analytics would be needed to monitor the effectiveness of the platform but also to provide services to authors (self-promotion and links with social media, who the content is reaching and how it is being used) and customers (self-customisable toolset). Open Researcher and Contributor Identifier (Orcid⁵) could be a solution. On a wider scope there were some “short-comings in the current data provision” and better mark-up and meta-data that “supports discoverability” had to be provided. “We can not rest on our content being king” (Core team). The ability to “package and repackage content”, “better integrate product types” and sell them via institutions and directly to end-users would be appreciated. It does not go without raising editorial issues though. One of the tricky problem is with the materiality of retrospective digitization of “an established reference system” of a print edition “which has evolved over the last 300 years” (e.g. the Cambridge Shakespeare edition), referred to by scholars by page number (e.g. the print Cambridge edition of D.H. Lawrence’s poetry), or from three existing sources (e.g. the Newton project based on one print edition of the works, and two online digital editions, one of the manuscripts and the other an XML version TEI encoded by scholars). For an academic publisher interviewed, these three examples raise the issue of either providing a “contextual” digital edition which is carrying the editorial marks of the print edition in a “neutral” manner—this preference contrasts with the desire of CUP to “add value”—or publishing an “analytical” edition augmented with notes, comments and additional content but which “complicates the user experience”.

In summary, the fixes to the UX and technology problems are “needed” while those related to content would be nice to have but “not needed”. Nomensa issued recommendations⁶ in the same manner, grouped in the three categories: “focus on”, “experiment with” and “de-prioritise”. The Core project team followed on and sorted issues by priority level: A—“at launch” for one of the two possible windows for of February or July. These priorities were put together in order to constitute a MVP and the rest was prioritised in backlogs as A, B or C; B—“critical but later”; and C—“later”.

In terms of public use, the first results of 2018 were encouraging with 1,5m users (user registrations up by 10% on last year) and 58m downloads (vs. 37m in 2017; content usage increasing by 19% in the last six months of 2017-18, compared to the same period in the prior year). Digital books’ use increased and journals’ has been steady. Usage can not truly be compared like for like on because the reporting systems were entirely different.

4. Toolbox and methodology

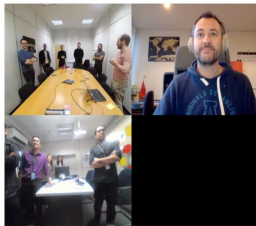

Core is a program (not a project) with a team of 100 people (120 people at the peak) based in Cambridge and Manila. The whole process of coordinating the operations (sprints, stake-

5 Orcid is a not-for-profit organization which provides an author’s persistent digital identifier.

6 Other recommendations were better integration of third-parties solutions such as submission systems which are “too complicated to develop and which vendors are already supplying” or implementation of industry standards such as Orcid.

holders' committees) and adjusting the strategy (senior managers' committees) was under the responsibility of the head of customer experience and platform. Before Core, Digital Publishing Board meetings used to be held at the critical stages of the previous waterfall deployment methodology for updates of the two platforms CJO and CBO. At the inception of Core, a key stakeholder group (the Q&A group) helped shape the MVP and was consulted for guidance and direction. Then, arbitrages on an ongoing basis are discussed for reprioritisation at the steering boards meeting between the managing director and the senior managers who control the overall budget and direction of the program.

The front-end team (see Figure 213) “kind of formed a startup in an established organization”. They were left alone and declared that “you’d be surprised how far it took us”. They were making “decision by committee” and considered “faster better than better”. There were quick daily stand-up meetings (see Figure 214) between the three product owners and the developers working on their specific backlogs to discuss ongoing issues. In addition three online project tools are used: Jira⁷ as an interface between product owners and developers for the why and what of the tickets and for “official” archive purpose; GitHub⁸ by developers to manage the technical details of how to address the issues; Slack⁹ with channels in which Cambridge Core and non-Core people can be invited.

<p>The Cambridge Core front-end team:</p> <ul style="list-style-type: none"> - 6 developers - 5 QA - 3 Product owners - 1 scrum master 	
<p>Figure 213. The Cambridge Core front-end team (Lunch and learn, 2016)</p>	<p>Figure 214. A stand-up meeting of the project team (photo by the Cambridge Core team, 2015)</p>

The replacement of CJO and CBO was a significant undertaking, one which affected virtually the whole Academic Publishing group. This created some anxieties. “The first few months were challenging. People did not know what agile was, they had to trust us.” It was “perhaps exas-

7 Jira is a proprietary issue tracking product, developed by Atlassian. It provides bug tracking, issue tracking, and project management functions.

8 GitHub is a development platform in which you can host and review code, manage projects, and build software alongside millions of other developers.

9 Slack is a real-time messaging, archiving and search in which team conversations can be organised in open channels.

perated” (Core team) because agile was an unfamiliar working practice; and the front-end team was located in a room far away from everyone else (see Figure 215).

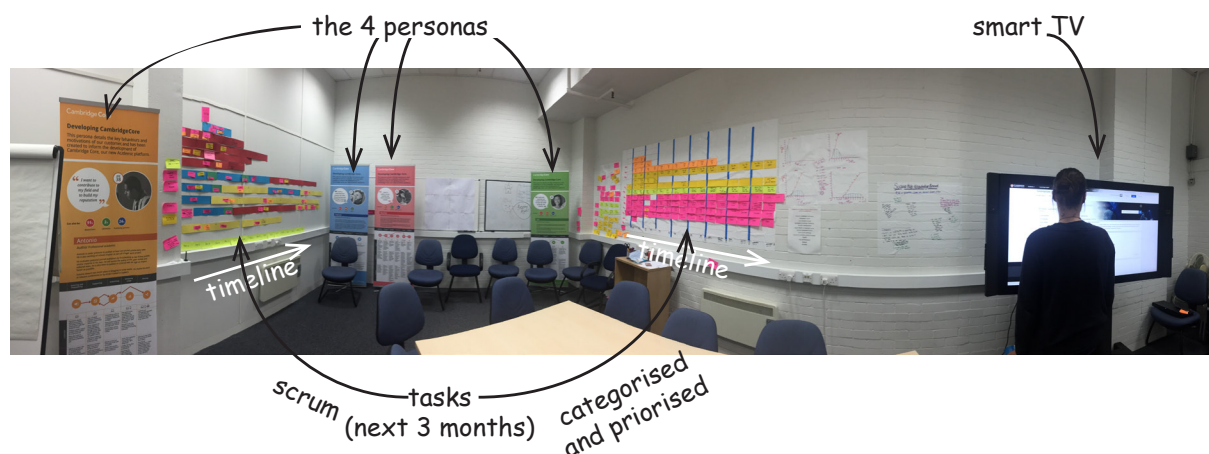


Figure 215. The Cambridge Core room in Cambridge (panoramic photo by Jean-Louis Soubret, May 2017)

Communication is a key element of an innovative and transformative program such as Core where decisions are made “by committee”. An iterative process was adopted to collect customer information (interviews, online panel, metrics) and to mediate them through designed artefacts (personas, tickets). What about the two levels of internal communication: between Core, the stakeholders and the rest of CUP; and inside Core between the front-end team and the developers?

The stakeholders are represented at the steering boards and the biweekly stakeholders’ committee. Operational issues are discussed at committees and prioritised by the Core team according to what can be called a desirable compromise between the rhetoric force of the user story, the resources in terms of budget and development manpower, and the level of urgency of each ticket. At board level, strategic decisions are arbitrated similarly to the design agency’s recommendations of “focus on”, “experiment with” and “de-prioritise”. Core is a mediator between the stakeholders’ committee and the steering board, with a decisional power in the former case and bound by decisions of the other in the latter. The communication within the 13-person front end team is facilitated because it is a small group and also because they have a dedicated project room. This room is set like a design studio, a set of visual communication artefacts. The four personas are posted on the walls as focal points. Two large size paper canvases, figuring weekly calendars, are also occupying two facing walls. On one wall dedicated to short term (three months ahead) it is populated with sticky notes representing tickets to be implemented and their estimated time of implementation. On the other wall, are the tickets under discussion arranged by a colour code of type of task and on a timeline according to their level of importance and readiness. This kind of visual management for all to see and consider is typical of start-ups in which there are too many things to do and so limited teams to do them that nobody can afford

not to be concerned by and involved in everything. It is derived from the beaux-arts studio education—where the students post their works for other students and their masters to see and discuss—and has been appropriated by design thinking. This purpose is confirmed by the caption on top of each persona poster that reads that they were “created to inform the development of Cambridge Core” (*italics added*). In the Core room there also is a smart connected TV for videoconferences and to see what is happening live on the platform. “We were able to build and show what we were doing. Within six months, we could show a [dummy] site.”

But CUP is not a start-up and the 1,500 staff in the UK and the other 1,400 worldwide can not, and will not, come to this room. So, there is a need to show on the Web what is happening to all those who wish to see, and an urge to go out and evangelise all the rest who do not feel concerned. In order to engage those already concerned, an open forum (the Cambridge Core Showcase whereby the latest developments to interested parties are demonstrated) is held every 2 weeks as an ongoing progress report “so that everyone could see”. The whole team is seating at biweekly retrospectives of what worked and what did not. And the Core team also tried very hard to engage the others—both internally and to customers and partners—by way of regular email blasts, drop in sessions, frequent showcases/demos (“lunch and learn presentation” by the Core team at the Press by Vicky Drummond, head of customer experience and platform and Astrid Van Hoeydonck, senior product owner).

Due to its mediating status, some academic publishers equated the Core team with “the technology” and their role as dealing with technological concerns and allocating resource and managing delivery. For them “there is no clear process [...] no fixed roadmap”, instead there is a “we are working on it” attitude. And since “there are far more requests than resources” they felt that they were much more empowered before Cambridge Core. Some editorial members of the committee are “not entirely proud to communicate what happened in workshops” to the editors they are representing. Conversely, they reckon that there used to be more complexity and a lack of consistency with CJO and that there are “very quick wins” with Core. The process is more visual and “the aesthetic has a major impact on perception”. It is also “much more physical” (e.g. stand-up committees and active workshops).

In terms of methodology, the term which was the most used during our interviews was “agile”. The Core team self-admittedly did not have anything concrete (i.e. written down). The general overall process was not precisely designed beforehand but “it was a solid process, not rigid, and we knew what we were doing”. Based on an incentivised online panel¹⁰, “the MVP spreadsheet is shifting weekly”. Each project is keyed in, tagged and prioritized and after each two-week sprint the tags were refreshed in real time. This process is based on an infinite-shaped feedback loop (see Figure 218) and is reflected on a Kanban-like online system (see Figure 219).

10 The Cambridge Core product owners could see what librarians did online, they had a distant image of what they were doing on their screen and they could hear their comments and talk to them.

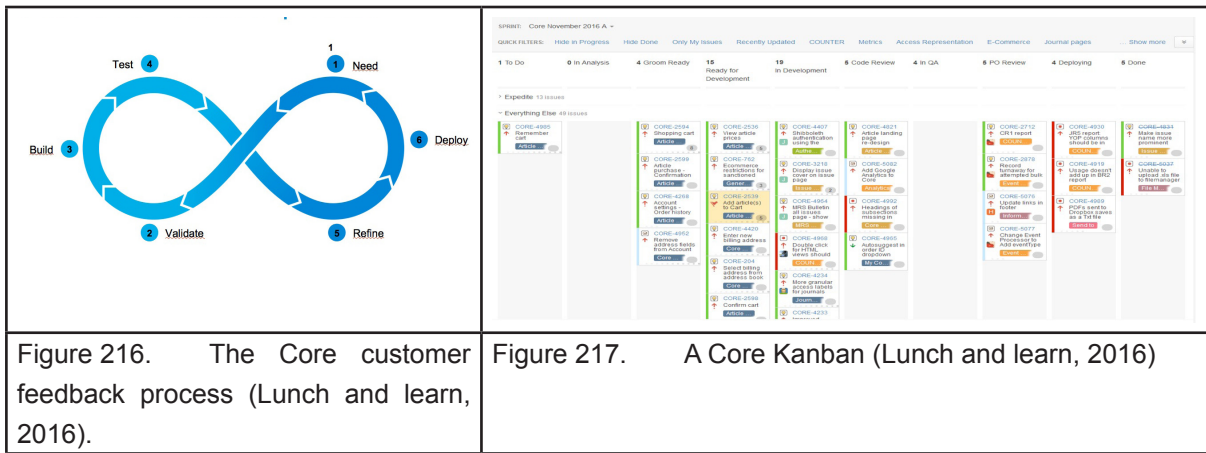


Figure 216. The Core customer feedback process (Lunch and learn, 2016).

Figure 217. A Core Kanban (Lunch and learn, 2016)

5. Relationship design

Professor of ICS Manuel Zacklad worked on a general theory of artefacts design (i.e. objects, services or UX) in which he distinguishes between “concept design”* (design de concepts) and “relationship design”* (design de relations) (see Figure 218). Concept design revolves around the four dimensions of form, function, use and symbol. Relationship design revolves around the design process itself. Design thinking or “maieutic design”* (design maïeutique) is defined as such because participants do not exactly know beforehand what the outcome of the design process will be. Under the influence of the Stanford D.school, DT also encompasses human-centred design. Co-design draws on the democratic Scandinavian tradition of participatory design and has a lot in common with DT with which it can be blended. The aim of “rhetorical design”* (design rhétorique) is to engage the clients and the stakeholders in order to engage them.

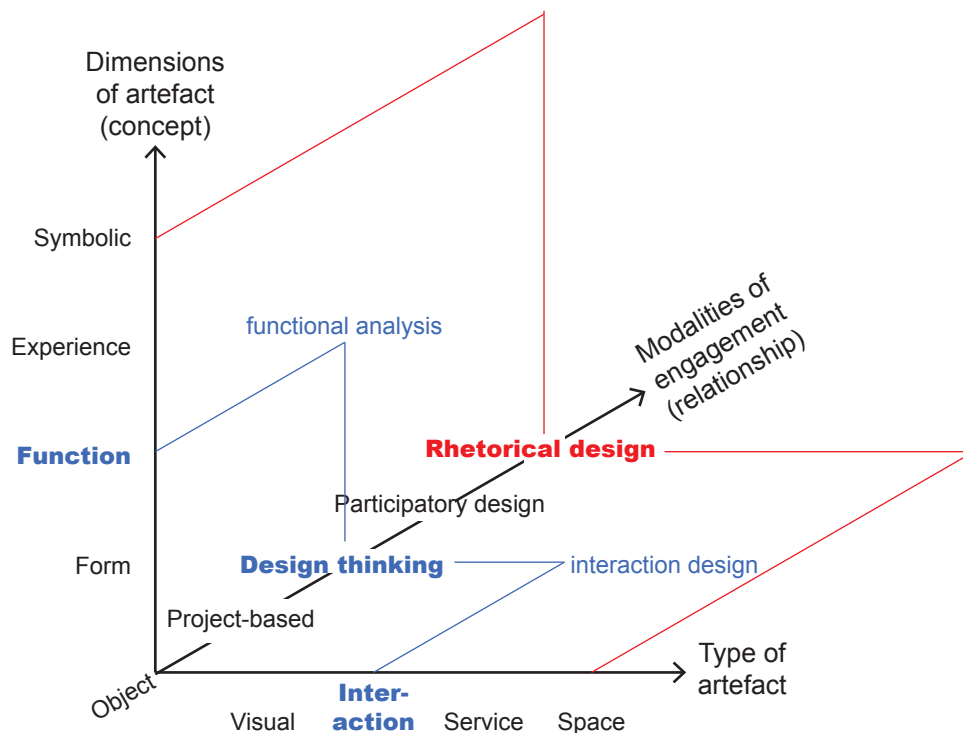


Figure 218. Analysis of the composition of systemic design, adapted from Fig. 2 in Zacklad, 2017.

The four types of relationship design described by Zacklad are relevant to Core. However, in this particular context project can first be equated with program (since Core is not a project) and the characteristics described in the table also apply to the Core program. Second, design thinking and participatory design share very similar features (even though their traditions and mindsets are different) and I have thus decided to merge them in the same category for this analysis. In summary, the three types of relationship design of the Core program are shown in Figure 218 (i.e. program design, design thinking and co-design, and rhetoric design).

First, the design of this program was based on the scrum methodology, not as a doctrine but along with other project management methods (such as Kanban) which pre-existed Core or were pragmatically deemed efficient. What is paramount is the general agile mindset of a process which is “not rigid” because people “knew what [they] were doing” and the principle is that “faster [is] better than better”.

Second, design thinking and co-design are heuristic and the earlier and the more the actors are involved, the more comfortable they feel (there was an actual difference in perception between actors involved full time and others who were participating biweekly). The process is supported by communication artefacts which were released early and regularly: “we were able to build and show what we were doing” (Core, customer experience). In order to make communication easier, artefacts (e.g. personas and project tickets¹¹) were visually and emotionally designed, “the process is not only more visual but much more physical [...] it is more emotional, visual” (Core, stakeholder). The process was neither as thorough or as democratic as participatory design, but there were some elements of co-design. For example, external people were invited in specific Slack channels and most decisions were made “by committee” instead of by an established hierarchical chain of command.

Finally, rhetorical design was deployed. External feedbacks from users helped to foster a better mindset with quotes which were widely reported such as “tell your developers they are sexy geniuses”. It changed the mindset, the Core front-end team just had to “let the work do the talking” (Core, product owner). It eased internal buy-ins as the following by one respondent: “on balance, it was the right decision to launch” (Core, stakeholder). Positive industry recognition followed with the shortlisting of Cambridge Core for three British design awards and two more specific to publishing.

6. Interviews at the Press on the 30th and 31st of May 2017

6.1. Group interview #1

Who: James Carr (Senior Product Owner, Cambridge Core), Daniel C Davies (Senior Digital Innovation Executive, Academic), Victoria Drummond (Head of Customer Experience and Platform, Cambridge Core), Astrid Van Hoeydonck (Senior Product Owner, Cambridge Core)

11]The dual syntax of the project tickets (written by product owners) as user-story (persona’s need, expected result but not a solution, acceptance criteria) was stable and widely understood, but at the same time it remained flexible enough to integrate an element of conversation (“trans-actions” with developers and/or stakeholders).

Where: Cambridge University Press

When: 30th May 2017

Vicky's role is to be “the central guardian to the platform because there are a lot of things people want” and therefore works with different departments around the Press.

Astrid emphasizes that she is “starting with user needs, informed by her work with the development team” which is partly based in Cambridge and for another part in Manila. She is able to work more closely with the business, customers and the on-site development team to build solutions that our customers really want. That is reflected in, and driven by, our more customer-driven approach which is widely acknowledge and fostered across the entire business.

The Cambridge Core team had “a training to ask differently for requirements”, to write “user stories” beginning with “it's for [persona X]”

There were two major changes in the approach: the nature of agile is really facilitating a customer-driven approach which is central to our culture now. We have to release more quickly if we are to stay customer-centric. It's simply a different approach now.

[Before 2014] CJO (Cambridge Journals Online) used to work with longer waterfall cycles (3-4 times per year) i.e. we release fortnightly.

Why was the Cambridge Core program launched?

The problems were that:

there were 2 platforms: one for books, another one for journals;

the platforms were becoming unstable, fragile.



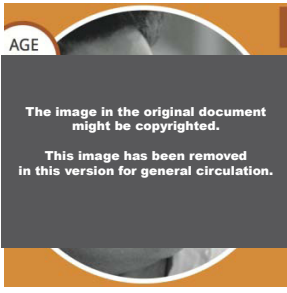

There was a “need to outgrow the technical framework” i.e. the needs outgrew the platform infrastructure. It couldn't cope with demand in the end, given it was 17 years old

Why were personas used?

“We did not really know who our users were.” An issue was to draw a distinction between HSS and STM, “we had no evidence to justify it”. The research suggested that whilst there were subtle differences in the behaviours of an STM researcher versus an HSS one, they were not substantial enough to warrant a different user journey. Which at the time was perhaps not controversial, but surprising.

So a survey was commissioned to an agency [Nomensa—a strategic UX design agency that combine expertise in psychology, interaction design and technology to transform digital experiences]. The recruitment of users was done by the Press.

Table 15. The four personas of Cambridge Core

Lucy	Rachel	Antonio	Patrick
			
Librarian Head of Content	Research Gatherer PhD student (final year)	Author PhD Professional academic	Publishing Partner Professor
age 44	age 24	age 38	age 57
“I build and maintain our content collection to serve the needs of faculty and students”	“I need to gather recent, specific and novel scholarly content”	“I want to contribute to my field and to build my reputation”	“I want to understand and measure the value that partnering with Cambridge University Press provides”

Source: Nomensa for Cambridge University Press, June 2014.

Then, there was a series of workshops facilitated by external designers of the design agency [Make it clear] with staff of the press.

The aim was to determine what the users’ “requirements” were. For each persona, “user journeys” were described and then a list of “backlogs” was made. The requirements were sorted out in “needed” and “not needed” and were entered in excel spreadsheets (later to be entered into JIRA, the project management system in use at the Press).

Table 16. The user journeys of the personas

Lucy	<p>The image in the original document might be copyrighted.</p> <p>This image has been removed in this version for general circulation.</p>
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Rachel	<div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; padding-bottom: 5px;"> Entering and Analysing and Saving and Discovering Reading Making use of </div> <div style="background-color: #333; color: white; padding: 20px; text-align: center;"> <p>The image in the original document might be copyrighted.</p> <p>This image has been removed in this version for general circulation.</p> </div>
Antonio	
Patrick	

Source: Nomensa for Cambridge University Press, June 2014.

How were the workshops held?

Four one-day workshops involved 20 people each time consisting of:

- 3 users (e.g. PhD students for Rachel-workshops)
- 1 facilitator of the design agency
- members of the technical team
- members of CJO, CBO, business analysts, product managers, sales & marketing.

The organization of the workshops was outsourced because of the tight schedule and the resources were stretched.

The four workshops were centered around:

- Rachel (the PhD student) twice
- Antonio (the professional academic) once
- Lucy (the librarian) once

We were trying to focus on Rachel primarily, and Patrick's needs didn't warrant a full day's workshop, rather we had good internal knowledge about what he might want and what he does want is shared amongst most if not all, Patricks and was quite simple to achieve with the initial development

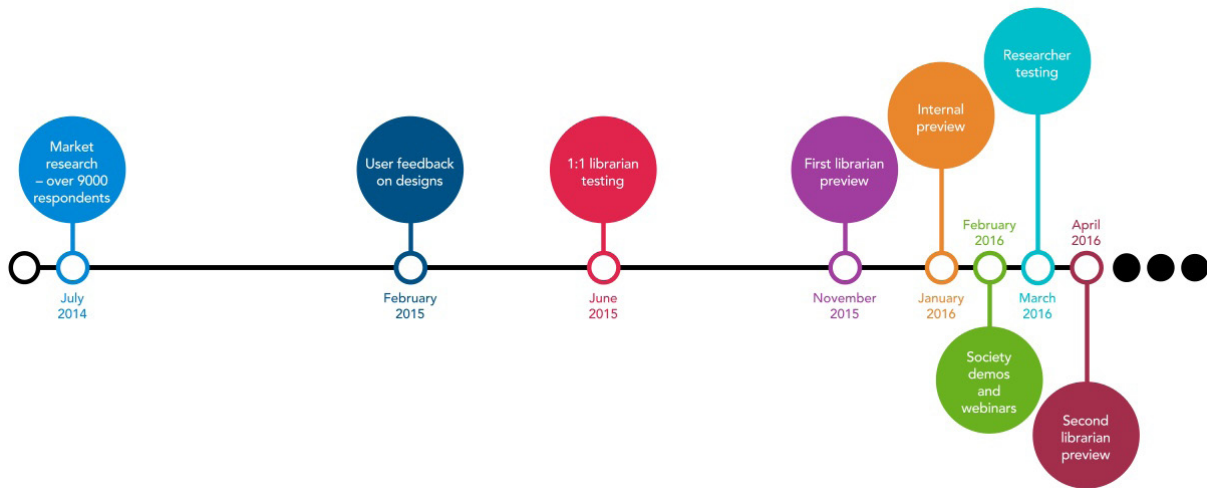


Figure 219. User feedback during development

Source: Lunch and learn presentation at the Press, Vicky Drummond and Astrid Van Hoeydonck, 2016.

What are the priorities?

Before Cambridge Core, the priorities were 1st business, 2nd strategic, and 3rd users. Now, it is users first.

- **Market research** included 50+ user interviews and survey of 9,000+ people
- The needs of our users informed the creation of the platform with **regular user testing and feedback** throughout the development

Creating Cambridge Core

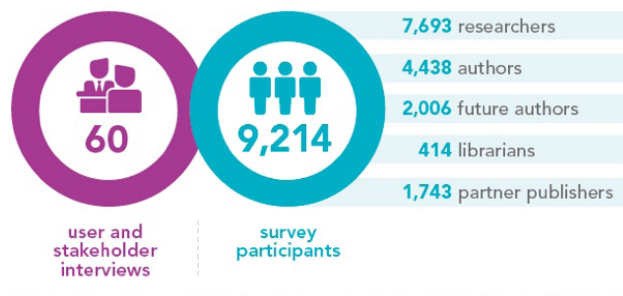


Figure 220. Cambridge Core presentation at EBA event, 2017

Issues discussed were prioritized according to user’s requirements in “critical” and “nice to have” and technical feasibility was left at this point if the technical team didn’t feel confident enough estimating the complexity of a requirement with limited information at the workshop itself and was separately discussed during or shortly after the workshops by the technical team. At this stage the business dimension was “not a discussion point”.

Issues were sorted by priority level:

A—at launch. The two possible windows for launch were February or July

B—critical but later

C—later

A-priorities were put together in order to constitute a MVP (Minimum Viable Product) and the rest was prioritized in backlogs as A, B or C.

How has the Cambridge Core team been working?

“We kind of formed a startup in an established organization. We were left alone. You’d be surprised how far it took us.”

We were making “decision by committee” and considered “faster better than better”. There were daily stand-up meetings to address issues.

Cambridge Core had a key stakeholder group, known then as the Q&A group whom helped shape the MVP and with whom Vicky consulted for guidance and direction. In the main the team were left alone to get on with the development which helped facilitate faster working

“The first few months were challenging. People did not know what agile was, they had to trust us.”

“We were able to build and show what we were doing. Within 6 months, we could show a [dummy] site.”

There were subsequently three testings of the site, 2 for Lin and 1 for Rachel.

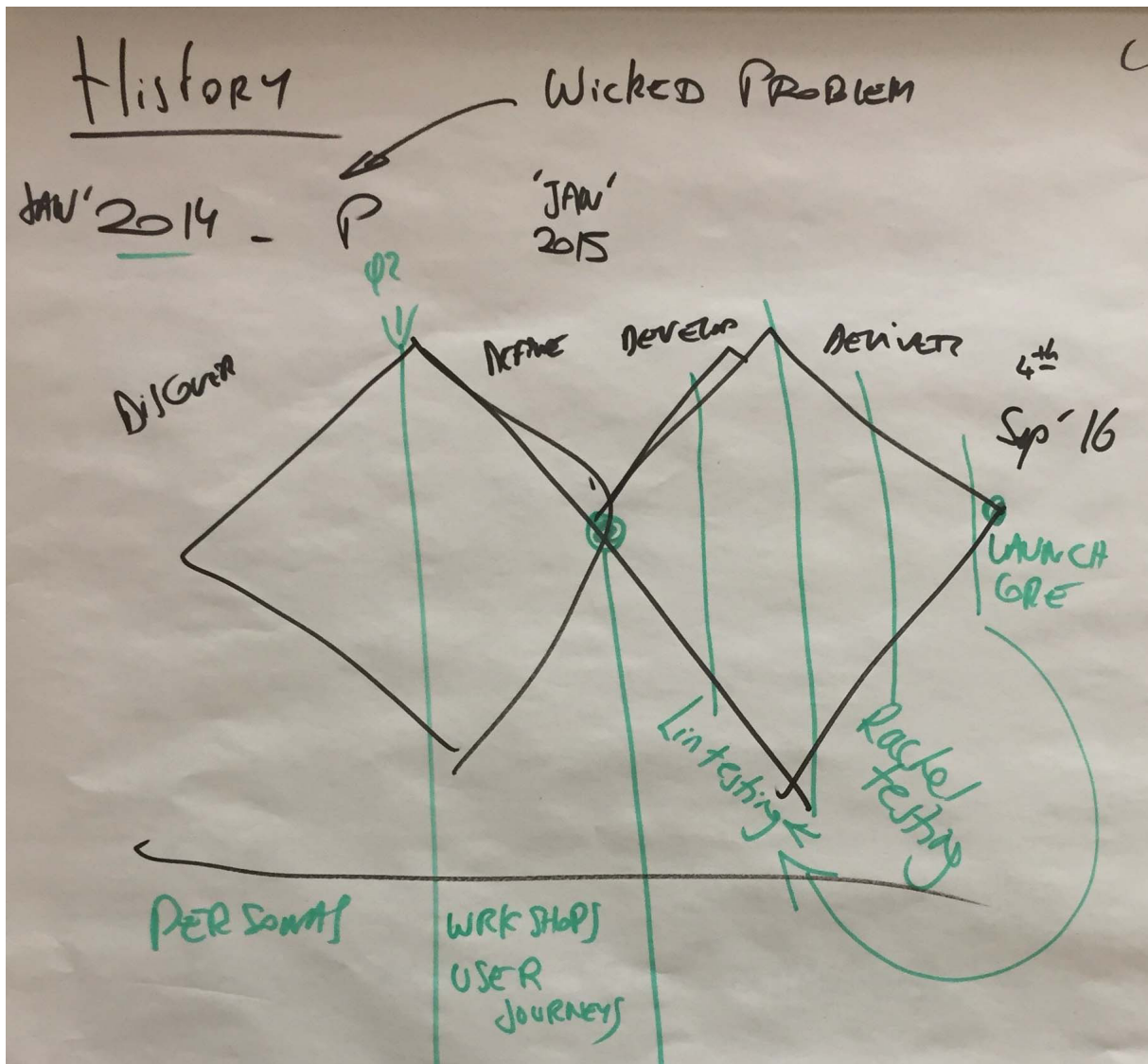
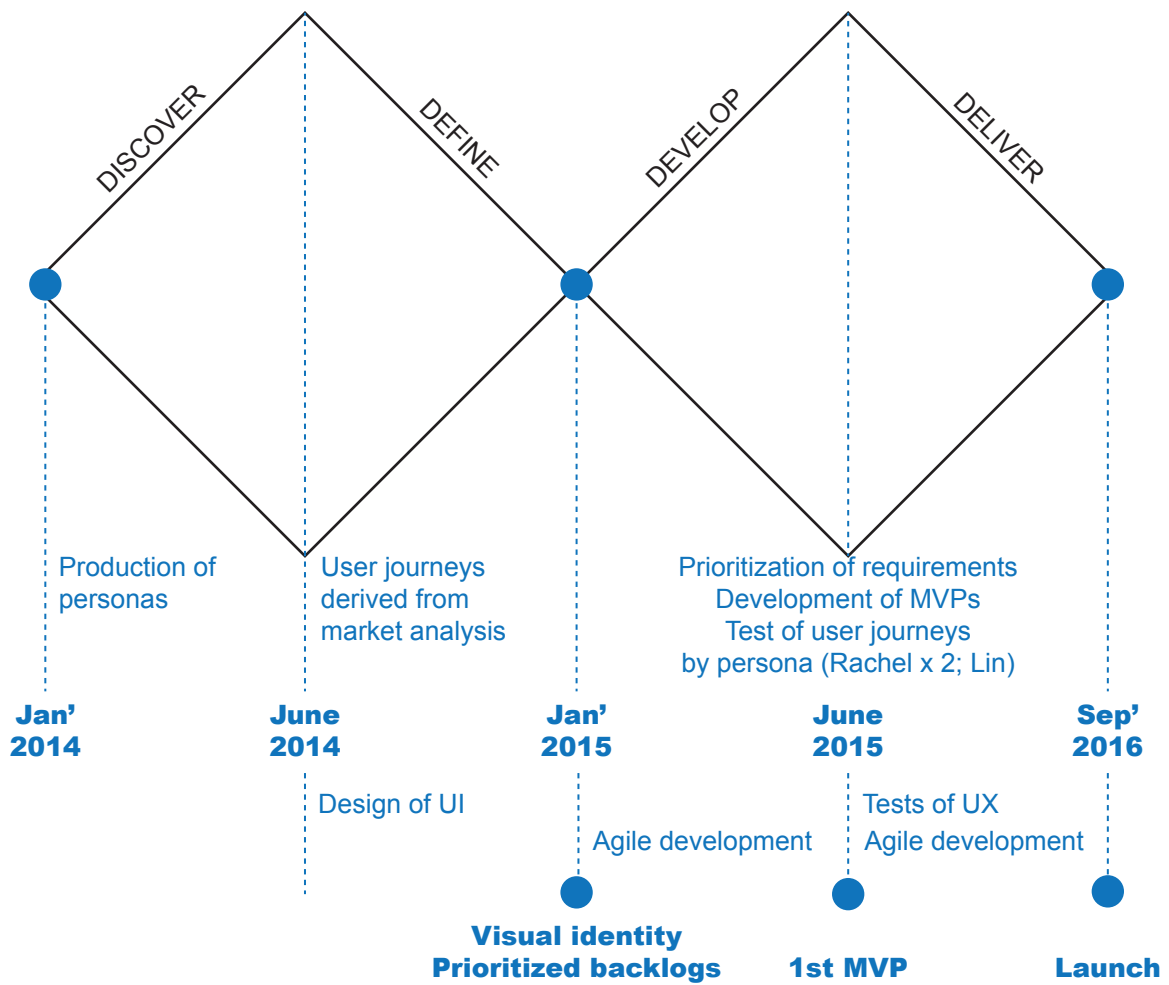


Figure 221. The Double Diamond approach

Source: discussion on the Double Diamond approach during the group interview and post-interview rendering. Cambridge Core is a program (not a project) with a team of 100 people based in Cambridge and Manila.



Source: the Double Diamond, based on the UK Design Council model

Figure 222. The Double Diamond journey of Cambridge Core

Quick daily stand-up meetings between the 4 Cambridge Core product owners and developers working on their specific backlogs are held to discuss ongoing issues.

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might be copyrighted.**

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in this version for general circulation.**

Figure 223. The Scrum overview

Source: Mark Hoogveld's graphical overview on his blog (<https://markhoogveld.wordpress.com>), 2015

An open forum (the Cambridge Core Showcase whereby we demonstrate the latest developments to interested parties) is held every 2 weeks as an ongoing progress report “so that everyone could see”. The whole team is seated at biweekly retrospectives of what worked and what did not.

The digital repository is designed like a website.

How does Cambridge Core interact with the rest of the Press?

The replacement of CJO and CBO was a significant undertaking, one which affected virtually the whole business. Naturally this created some anxieties which were perhaps exasperated by the way we approached it, which was a) agile - an unfamiliar working practise; and b) in a room far away from everyone else. But we tried very hard to engage by way of regular email blasts, drop in sessions, frequent showcases/demos both internally and to our customers and partners. After biweekly retrospectives, the Core Prioritisation Group meets fortnightly. Its members are the head of Cambridge Core and representatives of the various departments of the Press as “the business” (marketing, sales, editorial) and “technology” (CJO, CBO, content). It helps to reprioritize backlogs and raise concerns.

“Books editorial had this view that there is a 12-month roadmap, so that they don’t come up with requests. It is not true.” Meetings will be starting next week to change this perception. “Nothing is fixed, we changed the way we work three or four times already”.

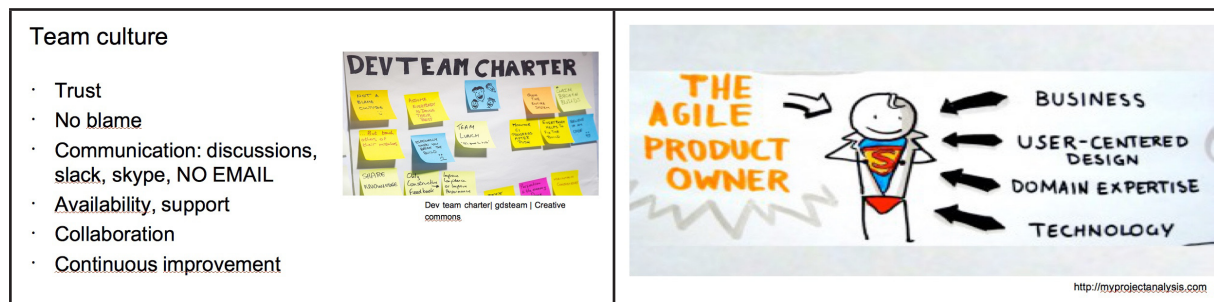


Figure 224. Product owners' mindset

Source: Lunch and learn presentation at the Press, Vicky Drummond and Astrid Van Hoeydonck, 2016.

Arbitrages are discussed for reprioritization at the steering boards meeting between the Managing Director and the Senior Managers who control the overall budget and direction of Cambridge Core..

The Digital Publishing Board meetings used to be held at the critical stages of the previous waterfall deployment methodology for updates of the two platforms CJO and CBO.

What are the results of Cambridge Core?

We never had anything concrete, i.e. written down, we knew that usage and performance were our two key objectives to measure success.

Quantitative

At Cambridge Core launch, usage shot up. Since then, digital books' use increased and journals' has been steady. The analytics package did not provide a good level of insight because of the URL structure of CJO, and so no reliable comparisons can be drawn. Usage reporting was fine. We can't truly compare like for like on usage because we are using entirely different reporting systems and our exclusions will be different. Since the online article purchase was not deployed at launch, there was no statistics for article purchase.

Qualitative

Cambridge Core was shortlisted for three British awards: the UK UX award and 2 more specific to publishing.

External feedbacks from users helped to foster a better mindset with feedbacks such as “tell your developers they are sexy geniuses”. It changed the mindset, we just had to “let the work do the talking”.

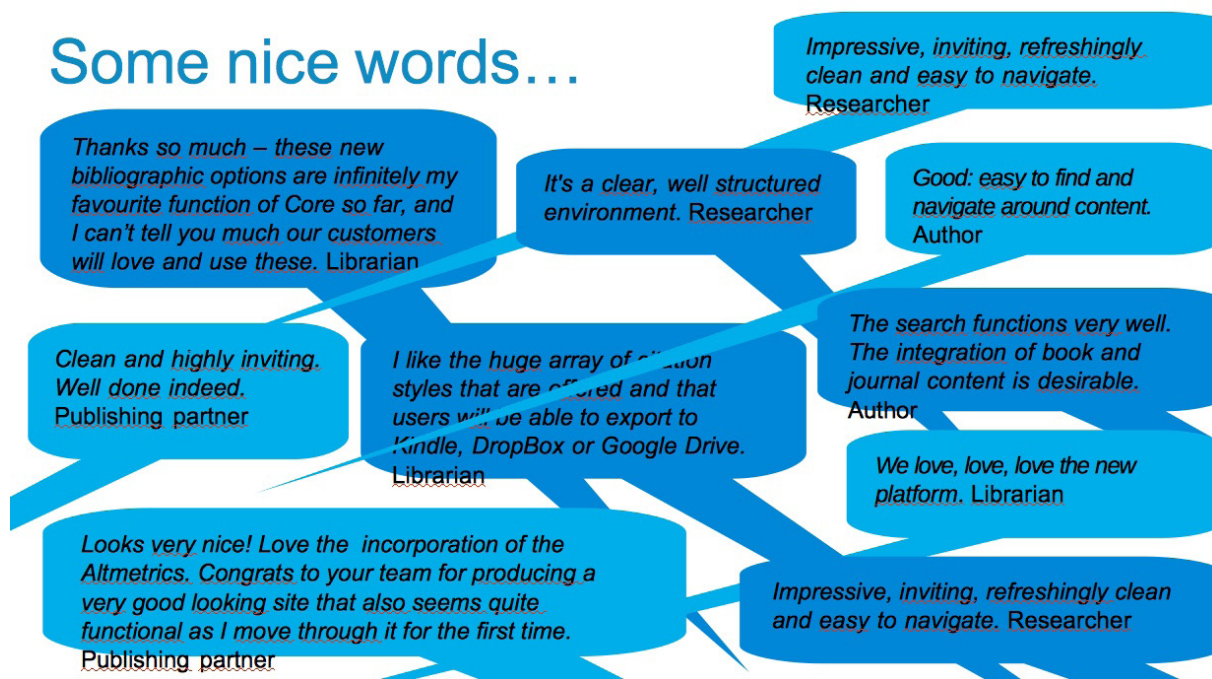


Figure 225. Positive feedback on Cambridge Core

Source: Lunch and learn presentation at the Press, Vicky Drummond and Astrid Van Hoeydonck, 2016.

“The MVP spreadsheet is shifting weekly”, it is based on an incentivized online panel. It is based on an infinite-shaped feedback loop and is reflected on a Kanban-like online system. There will be a new research with a more limited workshop with less people in the second half of 2017, and then regularly every six months.

New features

“We can not rest on our content being king”

Kudos to let authors self-promote.

Content Management System (CMS) for publishing partners and societies.

Better integration of third-parties solutions such as submission systems which are “too complicated to develop and which vendors are already supplying”. “Collaboration is a big thing”.

There is a roadmap, and innovation is part of it. We already have new developments planned which are innovative. And it is a huge drive from the business.

“Cambridge Core is not yet business as usual”.

One problem has been that the authors’ data in CJO and CBO are not unified, it is therefore difficult to identify a given author. ORCID could be a solution.

6.2. Interview #2

Who: Stephen Pocock (Product Manager)

Where: Cambridge University Press

When: 31st May 2017

Background

Steve arrived at the Press two and a half year ago. He has been a digital publisher for his working life since the 70s and transitioned to online form the 90s.

His area of expertise is the digital humanities and his previous job was with Proquest.

Projects at the Press

He is working on the online format of the Cambridge Shakespeare edition to which essays (part of the encyclopedia) are added. In his experience “online UX is a problematic, difficult and expensive thing to do”. One of the tricky problem is a retrospective digitization of a “print edition which has evolved over the last 300 years to become an established reference system”

A second example of a problem is digitization of poetry. For example the print Cambridge edition of D.H. Lawrence which is referred to by scholars by page number.

A third issue of text materiality is posed the Newton project with three existing sources: one print edition of the works, and two online digital editions, one of the manuscripts and the other an XML version TEI encoded by scholars.

The three above examples raise the issue of either providing a “contextual” digital edition which is carrying the editorial marks of the print edition in a “neutral” manner, or publishing an “analytical” edition augmented with notes, comments and additional content. The first one should be preferred for its neutrality versus the second digital format which “complicates the user experience”.

This preference contrasts with the desire of the Press to “add value”.

Augmented reality was discussed but sits “at the edge of what a publisher can do.”

“Publishers really are ‘content factories’ and their ability to produce tools to access content is fairly limited. Publishers are not content-agnostic.”

Interactions with Cambridge Core?

He is not involved in design and development.

His role is to establish business requirements for Cambridge Core.

The current Cambridge Core UX is “book by book and article by article” and there is no way to move from one to the other seamlessly when “what we want to deliver is a library-like entity, not a book-like entity”.

6.3. Interview #3

Who: Astrid Van Hoeydonck (Senior Product Owner, Cambridge Core)

Where: Cambridge University Press

When: 31st May 2017

About the two tests with librarians

Since it is a sensitive issue, the sales team selected the librarians for the tests.

The tests were held online at their place of work. The Cambridge Core product owners could see what librarians did online, they had a distant image of what they were doing on their screen and they could hear their comments and talk to them.

About the Cambridge Core process

The whole process looks like a double diamond into which an infinity loop were inserted instead of the second diamond from the left .

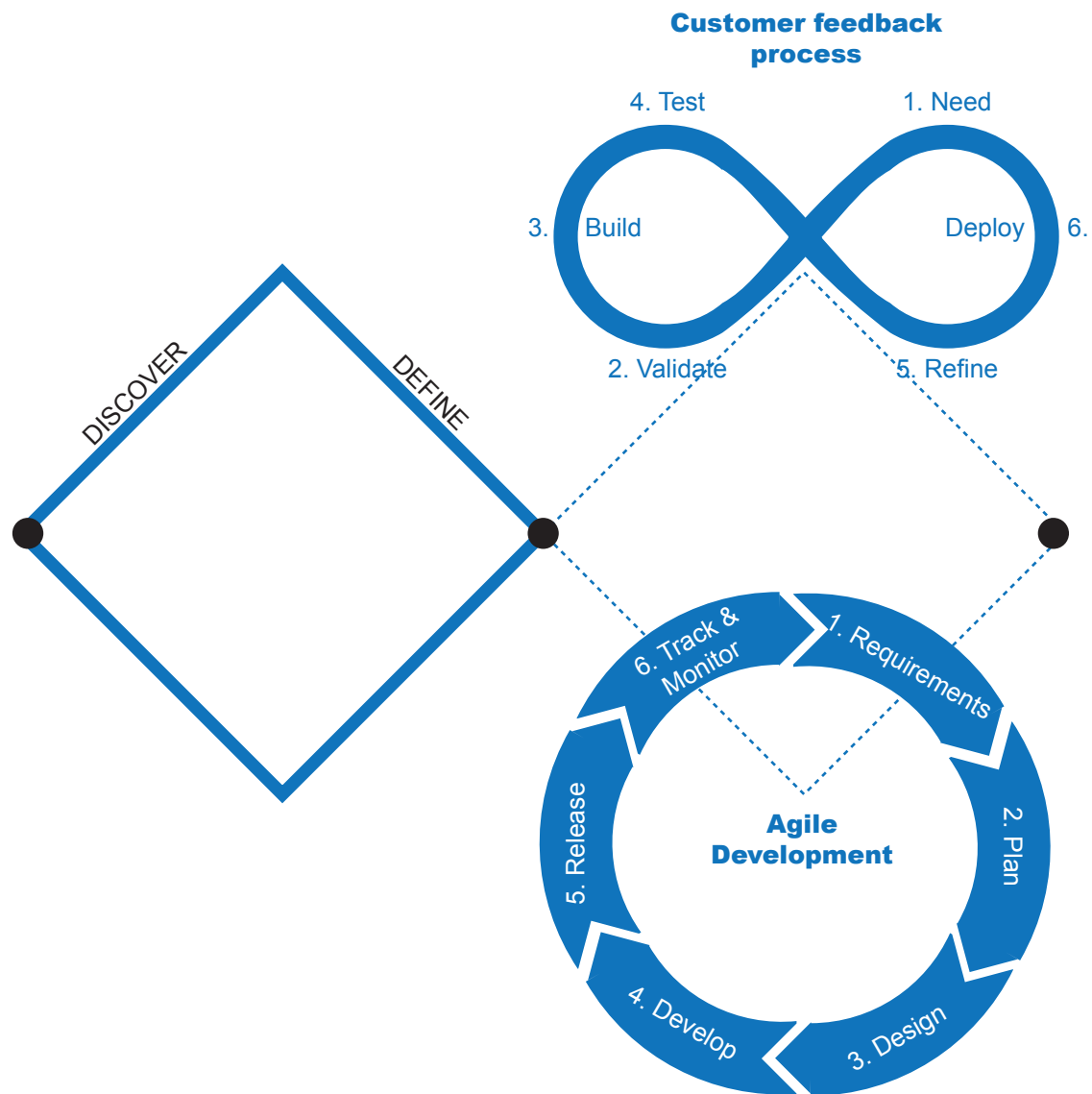


Figure 226. Single Diamond + customer loop/development circle

Source: post-interview proposal for a representation of the Cambridge Core process by Jean-Louis Soubret, 2017

The general overall process was not that precisely designed beforehand but “it was a solid process, not rigid, and we knew what we were doing”. Initially, each project was keyed in in Excel

and then copied in Jira where it was tagged and prioritized. After each two-week sprint the tags were refreshed in real time.

A project ticket contains two main items written by one of the four product owners:

a non-editable user story which reads as “As [persona X]; I want to ...; So that ...

editable acceptance criteria: Given ...; When ...; Then ...

For tricky or ambiguous projects, product owners can seek the help of designers of the external agency to design a ticket.

Three online project tools are used for Cambridge Core:

Jira as an interface between product owners and developers for the why and what of the tickets, and for “official” archive purpose

GitHub by developers to manage the technical details of how to address the issues

Slack with channels in which Cambridge Core and non-CORE people can be invited

At the peak of Cambridge Core, there were 120 people in the team.

6.4. Interview #4

Who: Daniel Pearce (Publisher, Humanities and Social Sciences)

Where: Cambridge University Press

When: 31st May 2017

Daniel manages a portfolio of 50 history journals and edits a subset of 10 of these.

About the stakeholders’ committee

He used to be a representative of the stakeholders for CJO and holds the same role for Cambridge Core. The biweekly stakeholders’ committee is chaired by the Head of Cambridge Core and represents “the business”.

The role of this committee is to interact with “technology” (i.e. Cambridge Core) which deals with “technological concerns, allocates resource and manages delivery”.

“There is no clear process for interacting and there are far more requests than resources”. “The prioritization is still technological and the business was much more empowered [before Cambridge Core] but there used to be more complexity and a lack of consistency [with CJO]”

“Business thinks about the users and it has direct interface with the different groups, a ‘market knowledge’”. Cambridge Core provided market research insights through librarian panels.

The situation is of “a conflict for limited resources and different competing needs.”

About the methodology & tools: personas, agile...

Daniel was involved in building the personas and the production of requirements. “The personas have been surprisingly useful and it was a good job as a synthesis”. If they had been too specialized, it would have been less useful because we publish across a broad range of subjects and have different demands. “We have an history of siloing these groups too much. We have to learn to share.”

In terms of empowerment, the flexibility enabled by the CMS was effective for the marketing “but [for editorial] less good at referencing stuff.”

“I am fairly new to the agile way of thinking and it is very interesting to see it.” There are “very quick wins.” There are two problems with agile:

“you develop things today that are going to be barriers tomorrow”

“there is no fixed roadmap, instead there is a ‘we are working on it’”

“The process is not only more visual but much more physical. My initial thinking was getting a list of functionalities from CJO and prioritize it for Cambridge Core: what should it look like? Instead, it is more emotional, visual.”

“I am not entirely bought into, not entirely proud to communicate what happened in workshops to the 50-60 editors I am representing. It would help to conduct meetings [with the 50-60 editors] but it is difficult to implement.” Cambridge Core appreciation

“We are already better served by Cambridge Core than we were by CJO.” It is more stable, faster, the navigation is more intuitive and it is cleaner and simpler.

“It falls short on certain functionalities”. There is no e-commerce, no content alerting, no multilingual option, no single sign-on (even though nine current contracts with publishing partners require us to provide it), no PDF offprint delivered to authors, no CrossRef linking. So far, “it sits below the surface. Most of the sting is anecdotal, below perception.” But “it changes the perception of quality at the Press. It could damage the reputation” even though “it is difficult to gauge the external perception”.

“On balance, it was the right decision to launch [Cambridge Core]” “The aesthetic has a major impact on perception”.

We have a “self-restriction about being celebratory.”

“The marketing and sales have broken down the siloes between books and journals” because they are addressing the same people through the same platform and “they are format-agnostic”. It is different in “editorial because the function we are doing is different between books and journals”. Elements is a new product which is trying to bridge the two. It is a thematic collection—at sub-discipline level—of short books and long articles.

6.5. Interview #5

Who: Peter White (Manager, Digital Partnerships/Stakeholders)

Where: Cambridge University Press

When: 31st May 2017

Functional outlook

The Cambridge Core platform is not yet fully functional. The plan is to complete it by the end of 2018.

The content is still fed from outside sources (typesetters...) into an internal infrastructure and through CBO and CJO. It is then processed and uploaded on the cloud into Cambridge Core

which is an SaaS-like back end platform consisting of APIs. We discovered during the platform development that “agile does not work well with offshoring” and had to dimension our development teams in Cambridge and Manila accordingly.

The launch of Cambridge Core was the front end, which is customizable through an integrated CMS, and displays the content online. “It is aspiring to be the BBC of material news.”

Mindset change

A lot of the creativity and design was done externally by “web experts rather than [internal] system experts” and a user-oriented approach was privileged over a product-system approach.

The book *Our Iceberg Is Melting: Changing and Succeeding Under Any Conditions* (2016) by John Kotter and Holger Rathgeber was distributed to the CJO team.

The example of JPASS by JSTOR was also cited as a desirable example.

6.6. Appendices



**Product Manager or
Chief Product Owner**

Strategic product decisions

Product strategy, product roadmap, stakeholder management, financial forecast



Product Owner

Tactical product decisions

Product backlog management, epics and user stories, collaboration with the development team

Figure 227. The Cambridge Core front-end team

Source: Lunch and learn presentation at the Press, Vicky Drummond and Astrid Van Hoeydonck, 2016.

PO challenge #1: Coping with demand

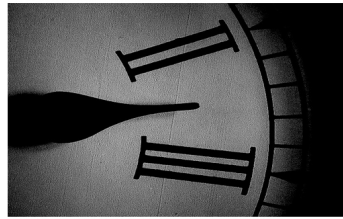
- There will always be more demand than the team can meet
- Identify highest priority work and allow the team to focus on that
- Resist the temptation to add more to the sprint than can be done
- Shelter the team



Queue | Xiaojun Deng | Creative commons

PO challenge #2: learning how to split yourself between past, present and future

- In the present with the team to deliver current sprint
- In near future to write & finalise tickets for the next sprint
- High level analysis of roadmap items
- Highest priorities should be the most refined ; don't waste effort over-refining things too far down the line.



Clock edited| keatmeat | Creative commons

PO challenge #3: one vision, multiple product owners

- Traditional model is single PO, we have three
- Specialisation/ownership of "themes" but awareness of all areas of the site to ensure consistency and alignment
- Shared principles
- Single brain and single voice (communicate and collaborate)



Esprit de corps| QEvonne | Creative commons

Figure 228. The three product owners' challenges

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Part One:

A cross-cutting approach of publishing by design thinking⁸⁷

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