Design as a strategic lever for change in an organization : A model for in-house dynamic capability-building

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Thesis
for the degree
of doctor of philosophy

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Cette thèse en Sciences de Gestion propose un modèle de construction d'une Capacité Dynamique (CD) par une entreprise dans le but de renouveler ses compétences et maintenir sa position compétitive face à un environnement dynamique. Elle traite en particulier du Design dont elle montre qu'il peut être considéré comme une capacité dynamique qui enrichit les capacités d'innovation des organisations. Elle s'attache à repérer les dimensions de cette capacité dynamique de Design, à observer sa construction dans le temps à différents niveaux organisationnels et à en proposer une modélisation.

La thèse contribue au champ du management stratégique en enrichissant la théorie des CD qui manque d'analyses empiriques de la construction d'une CD comme le souligne Danneels (2011) entre autres. Elle contribue aussi au champ du management de l'innovation en enrichissant les capacités d'innovation d'une organisation à travers l'étude détaillée et longitudinale de la construction d'une capacité Design. Elle vise à comprendre comment le Design en tant que CD peut contribuer à la transformation des organisations qui cherchent à accroitre leur compétitivité et maintenir leur croissance. Elle mobilise et contribue aux champs théoriques des ressources et des compétences, au management de l'innovation et plus particulièrement, au champ plus récent, du Design management.

La thèse s'appuie sur une recherche qualitative menée dans le cadre d'une convention CIFRE au sein de la MAIF (société mutualiste d'assurance française). C'est une étude longitudinale de la transformation de l'organisation à travers l'intégration du Design comme nouvelle capacité d'innovation.

Elle propose de modéliser la capacité Design selon 8 composantes, qui ont émergé de manière abductive de l'analyse des données issues du terrain et d'allers-retours entre la théorie, le cas et d'autres contextes empiriques. Il montre la construction et le renforcement d'une capacité à travers l'acquisition de ressources (designers, etc..), leur déploiement dans des activités telles que des projets, la capitalisation des apprentissages accumulés d'un projet à l'autre, construisant ainsi progressivement une expertise à l'échelle de l'organisation qui est ensuite diffusée à l'échelle de l'organisation et conduit au renouvellement des ressources et des compétences existantes. Tout le processus est initié par une volonté stratégique. Les projets conduisent aussi à des résultats (nouveaux produits et services) en plus de la

construction de la capacité. Le modèle proposé a ainsi permis d'étudier les changements induits dans l'organisation par la construction de cette capacité Design. En effet, il met en évidence une dynamique itérative et progressive de renforcement d'une capacité Design qui se compose de plusieurs capacités de deux ordres : les opérations (« designer » ou concevoir, diffuser le Design et gérer le Design) et la transformation (construire l'expertise Design et transformer l'organisation par le Design).
Le modèle a ensuite été appliquée à quatre autres organisations poursuivant le même objectif d'intégration du Design en tant que nouvelle capacité d'innovation. Cette utilisation a permis de valider le modèle et a conduit à la proposition d'une échelle de maturité de la capacité Design des organisations.
La thèse, organisée en cinq chapitres, comprend 350 pages, 25 tableaux et 107 figures.

1. Le contexte

La survie des entreprises dépend de leur capacité à renouveler leurs compétences en reconfigurant les ressources existantes et en acquérant de nouvelles (Eisenhardt et Martin, 2000). Plusieurs exemples relatent la disparition d'entreprises n'ayant pas réussi à se renouveler, comme Smith Corona (Danneels, 2011), Kodak (Pandza et Thorpe, 2009) ou Rover (Oliver et al., 2008).

Les compagnies d'assurances font face à des menaces importantes et nombreuses : réglementaires (par exemple, Solvabilité II), économiques (faibles taux d'intérêt et augmentation des catastrophes naturelles dues au changement climatiques), concurrentielles avec l'arrivée de nouveaux entrants effectifs et potentiels du numérique, technologiques (véhicules autonomes), climatiques, etc. La MAIF, société mutualiste d'assurance, s'est lancée dès 2008 et de manière plus significative depuis 2015 dans un plan de transformation visant le renouvellement de ses compétences à la fois technologiques et commerciales pour faire face à ces menaces et maintenir sa position compétitive. En effet, l'entreprise fait partie des leaders du secteur de l'assurance en France ; elle connaît une croissance continue depuis sa création en 1934, qui s'appuie notamment sur le taux d'attrition le plus bas du marché et une relation client primée depuis plus d'une décennie. Le plan stratégique s'appuie sur la diversification de son offre et le renouvellement et l'optimisation de son mode de fonctionnement (les processus et ses infrastructures). Le directeur de la stratégie crée successivement deux équipes: l'une en charge de l'innovation pour développer les capacités nécessaires et l'autre dédiée au Digital pour conduire la transformation digitale. L'objectif est de proposer une bonne expérience, source de valeur, à toutes les parties prenantes, clients comme employés. C'est dans ce cadre, que le directeur de la Stratégie, le directeur de l'Innovation et le directeur du Digital décident d'intégrer le Design : c'est à dire de nouvelles méthodes et connaissances pour améliorer la participation des utilisateurs, l'idéation et développer le prototypage rapide des nouveaux services développés ; mais également, un nouveau mode de gestion de projets qui valorise la collaboration et l'itération, un nouvel état d'esprit.

2. Le cadre théorique et la question de recherche

2.1. Le défi du renouvellement des capacités organisationnelles pour la survie des entreprises

Selon la théorie des ressources et des compétences, les entreprises sont considérées comme des collections de ressources matérielles et immatérielles qui lorsqu'elles sont délibérément déployées dans une logique de production forment des capacités organisationnelles (Danneels, 2011 ; Winter, 2000 ; Amit et Schoemaker, 1993), c'est-à-dire, une combinaison d'expériences, de connaissances et de compétences (Hobday et al., 2012). Ces configurations de ressources orientées vers un objectif constituent les prémisses de la compétitivité d'une entreprise (Barney, 1991). Certaines configurations de ressources sont une source de différenciation et ouvrent l'accès à de nouveaux marchés potentiels (Prahalad et Hamel, 1990). La capacité à développer de telles configurations de ressources, idiosyncrasiques et spécialisées (Grant, 1991) correspond à ce que Teece et al. (1997) dans un article fondateur ont nommé « capacités dynamiques » par opposition aux capacités opérationnelles.

Les capacités dynamiques correspondent à la capacité de l'entreprise à renouveler ses compétences dans un environnement de plus en plus changeant et complexe (Teece et al., 1997 ; Eisenhardt et Martin, 2000 ; Danneels, 2002 ; Cepeda et Vera, 2007). Danneels (2011) souligne la difficulté pour les organisations de définir leurs capacités existantes : "les organisations n'ont souvent pas une compréhension bien articulée de leurs propres capacités". Afin d'ouvrir la voie à une meilleure identification des capacités des entreprises, il distingue les compétences de premier ordre, c'est-à-dire le client et la technologie, des capacités de second ordre, c'est-à-dire des capacités qui modifient celles de premier ordre (Teece et al., 1997 ; King et Tucci, 2002 ; Danneels, 2002). Certains chercheurs suggèrent l'existence de capacités de troisième ordre qui consisteraient en la capacité à modifier celles de second ordre (Collis, 1994 ; Winter, 2003).

Malgré l'abondante littérature énumérant des exemples de capacités dynamiques tels que : la R&D, l'innovation, le développement de nouveaux produits, les alliances, les fusions et acquisition, ou l'apprentissage organisationnel (Inan et Bititci, 2015), les recherches empiriques manquent. Certains chercheurs suggèrent que les contours des capacités dynamiques sont encore flous et comparent le concept à une boîte noire ; des contributions récentes préconisent des recherches empiriques complémentaires pour explorer comment sont construites les capacités dynamiques et la façon dont elles sont mobilisées comme l'ont fait Danneels (2011) dans le cas de Smith-Corona (Danneels, 2011), Bingham et al. (2015) dans le cas de Dow Chemicals et Harreld et al. (2007) dans le cas d'IBM. Cet ancrage empirique apparaît d'autant plus nécessaire que les capacités dynamiques ne sont pas universelles mais "dépendantes de l'héritage et du contexte de l'entreprise" dans lesquelles elles sont développées (Teece et al. 1997 ; Birkinshaw et al., 2016). Alors que la contingence des capacités est débattue, Hamel et Prahalad (1990) ont soutenu que toute capacité est en effet complexe et "dépendante

du contexte" en raison de la "nature ambiguë" et du "caractère tacite et social des connaissances productives".

2.2. Le Design en tant que capacité

La littérature en management de l'innovation sur le Design et le Design management s'accordent sur le fait qu'il n'existe pas de définition consensuelle du Design. C'est à la fois le résultat d'une action, l'action de concevoir, une démarche, un ensemble de méthodes et d'outils, ou une pratique professionnelle. La multiplication des recherches sur le sujet a entraîné l'émergence de nombreux concepts liés au Design : le Design thinking (Brown, 2009), le Design management (Borja de Mozota, 2001), le Design de Service (Fayard et al., 2017), Design-driven innovation (Verganti, 2011), Designful (Neumeier, 2008). En raison de sa nature tacite et de l'absence de définition incontestée, plusieurs acceptations coexistent et nuisent à la compréhension rendant son intégration dans les organisations délicate (Johansson-Sköldberg et al. 2013), alors même que les chercheurs s'accordent sur la valeur multidimensionnelle que le Design apporte aux organisations (Brown, 2009 ; Ben Mahmoud-Jouini et al., 2019 ; Martin, 2011 ; McCreary, 2010 ; Dunne, 2018 ; Carlgren, 2013), notamment par le biais du développement de nouveaux produits (Verganti, 2011).

Plusieurs études récentes soulignent les enjeux et les difficultés de l'intégration du Design par des entreprises souhaitant renforcer leurs capacités d'innovation ou accompagner leur transformation numérique (Dell'Era et al., 2020 ; Wrigley et al., 2020; Bjorklund et al., 2020; Junginger, 2015; Meyer, 2011; Ben Mahmoud-Jouini et al., 2019; Carlgren, Elmquist and Rauth, 2016). L'intégration du Design peut se faire par l'externalisation (par exemple par l'alliance avec une agence de Design externe) ou l'internalisation (avec la création d'une compétence interne) ou une combinaison des deux à la fois (Hemonnet-Gougot et al., 2019). Wrigley et al. (2020) mettent en évidence les défis que l'internalisation soulève et la nécessité pour les designers de composer avec un héritage organisationnel plus ou moins compatible avec la pratique du Design (Junginger, 2015 ; Carlgren et al., 2016 ; Björklund et al., 2020). Des contributions antérieures ont montré que l'intégration du Design a un impact sur l'organisation, induit des changements et soulève des défis (Cooper et al. 2011 ; Carlgren et al. 2016). Certains chercheurs suggèrent que le Design est une capacité dynamique (Dong et al. 2016 ; Rosensweig, 2011 ; Jevnaker, 2000) sans toutefois en étudier les dimensions ni montrer comment elle se construit au sein d'une organisation, comment elle se combine avec d'autres capacités d'innovation et comment elle modifie les compétences et les ressources existantes.

2.3. L'étude d'une organisation intégrant le Design comme un levier stratégique de changement

La revue de littérature a montré qu'un éclairage complémentaire était nécessaire pour comprendre ce que signifiait l'intégration du Design dans une organisation et comment procéder. De plus, les

chercheurs soulignent les défis et les changements induits par le Design. Nous avons donc voulu étudier comment il peut induire une transformation organisationnelle. D'autre part, les contributions sur les capacités dynamiques mettent en évidence leur nature contingente, c'est-à-dire leur non-reproductibilité et leur adaptation au contexte. Ainsi, la formation des employés, l'embauche de designers, ou la combinaison des deux, conduisent à l'acquisition de ressources qui ne sont pas suffisantes à la construction d'une capacité interne. Plusieurs chercheurs insistent sur l'apprentissage requis pour la construction de capacités dynamiques (Bingham et al., 2015).

Nous avons souhaité contribuer à la compréhension de la construction d'une capacité Design. A ce titre, la thèse a traité les trois questions suivantes:

- Que signifie une capacité Design ?
- Comment la capacité Design se développe dans une organisation qui lui est peu familière ?
- Comment la capacité Design transforme-t-elle l'organisation ?

3. La méthodologie

Pour cela, nous avons développé une démarche qualitative exploratoire basée sur une étude de cas longitudinale (Yin, 2003 ; Perks et Robert, 2013), dans une approche compréhensive justifiée pour l'étude d'un phénomène complexe et relativement peu étudié jusqu'ici, à savoir l'introduction du Design dans une organisation qui lui est peu familière. J'ai mené une recherche-action (David, 2000 ; Dumez, 2016) à la MAIF, dans le cadre d'une convention CIFRE. La CIFRE permet une intégration à l'entreprise qui facilite la collecte des données et l'observation longitudinale à tous les niveaux hiérarchiques. Ayant reçu une double formation en gestion et en Design, j'ai intégré l'entreprise en tant que doctorante dans un rôle de "Design innovation catalyst" (Price et al., 2018). En immersion sur le terrain pendant quarante mois, j'ai participé à cinquante-deux projets (à la fois d'innovation, d'amélioration continu ou liés au développement des capacités en matière de Design) et en ai documenté plus de cent quarante. L'immersion a rendu possible une collecte de données à la fois rétrospective et en temps réel. La thèse a commencé par six mois d'immersion sur le terrain pour découvrir l'organisation, ses spécificités, et suivre en temps réel les débuts d'une équipe Design. La première année de la thèse (de septembre 2017 à août 2018) a été consacrée à la compréhension de l'historique de développement du Design dans l'organisation. Des entretiens avec les premiers designers embauchés et les managers qui les ont recrutés ont été réalisés. La deuxième année (de septembre 2018 à novembre 2019) a été consacrée à la construction du modèle. Elle a été marquée par des formations et la participation à deux colloques doctorants, qui ont permis la présentation des travaux et l'obtention de retours utiles à la progression de la recherche. La troisième année (de décembre 2019 à août 2020) a été consacrée au développement du modèle à partir de l'analyse détaillé du matériau collecté et la lecture de travaux en management

stratégique et sur le Design ; elle a également permis la collecte de matériau complémentaire, lorsque cela était nécessaire, et enfin à la rédaction d'une première version de la thèse pour la pré-soutenance qui a eu lieu en septembre 2020.

Le matériau collecté est de fait constitué de sources primaires et secondaires. Il comprend les retranscriptions d'entretiens et de discussions informelles, les carnets de notes et photographies prises sur le terrain, l'accès aux documents et artéfacts produits par les équipes de Design, par les équipes projets, ou par d'autres et stockés dans les archives. La variété des sources empiriques a permis de trianguler les données et donc de limiter la subjectivité. Ces données ont été mises en série sous forme de monographies (six) et de mémos (dix) portant sur les projets, les équipes et les dispositifs de Design créés ; elles ont également alimenté la constitution d'une base de données sur les projets qui a ensuite été analysée. L'ensemble des documents produits dans le cadre de la sériation des données représente approximativement cinq cents pages.

L'analyse des données a combiné deux approches, d'une part « l'analyse séquentielle » telle que définie par Perks et Robert (2013) et d'autre part la « combinaison systématique » telle que définie par Gadde et Dubois (2002). Cette dernière correspond à la construction progressive d'un cadre d'analyse par des allers-et-retours entre la théorie le cas et le contexte empirique. L'analyse séquentielle (Perks and Roberts, 2013) comprend six étapes : la définition de niveaux d'analyse ; l'identification et la classification des observations ; la reconstruction de la chronologie des événements et leur catégorisation; la comparaison des séquences d'événements pour l'identification de récurrences ou différences (par exemple, une séquence typique, un ordre d'étapes ou une hypothèse concernant l'influence de variables spécifiques) ; et enfin l'interprétation des catégories et des séquences identifiées.

J'ai ainsi appliqué à ma recherche en management, une démarche de designer en construisant mon modèle par itérations entre la théorie et le cas, puis en le mettant en forme et à l'épreuve en l'utilisant à différent niveaux dans l'entreprise (les projets, les équipes et l'organisation), avant de le tester auprès de quatre responsables de Design dans d'autres entreprise. Cette dernière étape a constitué un élément important de validation externe de mon travail. J'ai aussi développé (dans le chapitre dédié à la méthodologie de la thèse) une réflexion sur l'articulation de mon rôle de chercheur et celui de designer qui nécessite une adaptation permanente pour passer du monde de l'entreprise à celui de la recherche.

4. Le cas

Le cas de l'intégration du Design à la MAIF en appui au développement des capacités d'innovation et à la transformation digitale était particulièrement intéressant à étudier pour trois raisons. Premièrement, l'organisation, qui compte plus de 7000 employés et plus de 3 millions de clients, est atypique du fait de sa nature mutualiste qui place les clients (appelés "sociétaires") au cœur de sa gouvernance et les implique notamment dans les processus de développement de nouveaux produits ou

d'amélioration continue. L'attention accordée à l'expérience client est donc dans l'ADN de l'entreprise. Deuxièmement, alors que la majorité des études existantes sur le Design portent sur des contextes industriels, il s'agit ici de services, qui plus est financiers, pour lesquels le Design a rarement été étudié. Enfin, l'ambition de la direction générale est d'intégrer le Design au niveau stratégique de l'entreprise, c'est-à-dire au quatrième et dernier niveau de la « Danish Design ladder » (Ramlau et Melander, 2004), une échelle de maturité très largement adoptée par les entreprises).

5. Les résultats

Le résultat principal de cette thèse est la proposition d'un modèle de construction de la capacité Design de l'entreprise (II) qui s'est déroulée selon quatre phases (I). L'utilisation dynamique du modèle pour l'étude des trajectoires d'intégration du Design a permis de mettre en évidence deux mouvements (III), à partir desquelles une segmentation de la capacité de Design a été proposée (IV). A partir des blocages observés sur les trajectoires et des difficultés rencontrées, nous avons formulé six recommandations pour l'intégration du Design (V). Enfin à partir de l'application du modèle dans quatre autres entreprises, et plus particulièrement la comparaison des capacités de ces entreprises selon les composantes principales du modèle, nous avons proposé une échelle de maturité de la capacité Design d'une organisation (VI).

5.1. (I) *Chronologie : Les 4 phases construction de la capacité Design*

L'étude rétrospective de l'intégration du Design (avant l'entrée sur le terrain en 2017) puis l'observation longitudinale du développement de la capacité Design a permis de mettre en évidence quatre phases : découverte, émergence, consolidation, et enfin institutionnalisation.

La phase de découverte a duré sept ans, le mot « Design » apparaît pour la première fois dans les archives en 2012, il inaugure le recours au Design thinking dans un projet. Deux ans plus tard une agence de Design est officiellement mandatée sur un projet stratégique. Le directeur de l'innovation nommé en 2008 est à l'initiative de ces trois premières occurrences. La phase de découverte s'achève en 2015 sur la décision par ce dernier d'intégrer un designer au sein de l'équipe innovation nouvellement créée.

C'est ainsi que débute en 2015 la phase d'émergence, qui correspond à la création d'équipes au sein desquelles sont créées des postes de designers : d'abord l'équipe innovation pour travailler sur le développement de nouveaux services et de nouveaux points de contact, puis en 2016 la Digital Factory, en charge de la conception de produits digitaux pour les clients, et enfin, en 2017, l'équipe expérience chargée de l'amélioration de l'expérience des employés et des clients.

En 2018, les trois équipes sont réunies au sein d'un même département, le département Digital, ce qui facilite leur collaboration et permet des projets transverses. Ce tournant marque le début de la phase de

consolidation, qui se caractérise également par la création d'une communauté de pratique, la diffusion d'outils conçus par les équipes de Design pour faciliter la collaboration avec d'autres départements (notamment le département Marketing). Au début de l'année 2020, une quatrième équipe voit le jour pour travailler sur les outils digitaux à destination des employés.

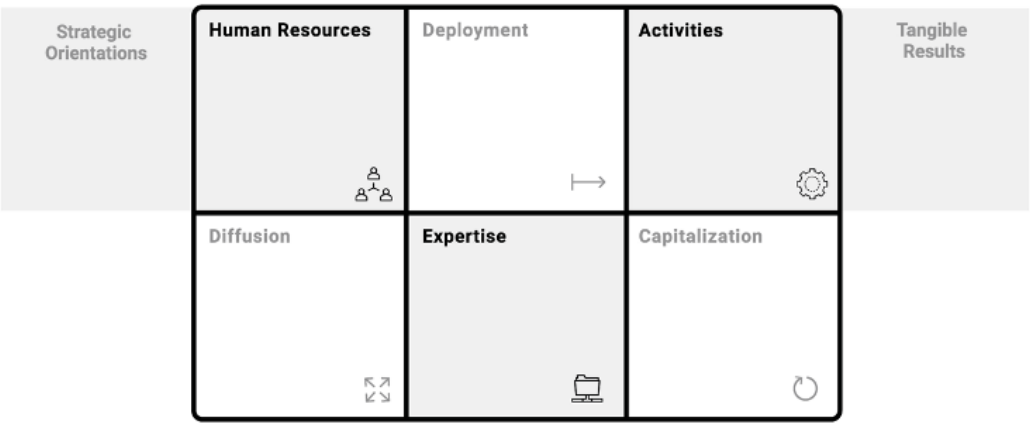
En 2020, après 12 ans, la MAIF compte donc quatre équipes de design comprenant 46 designers et quelques contributeurs externes occasionnellement mobilisés par 4 départements. L'entreprise entre dans une phase d'institutionnalisation qui correspond à la définition d'une feuille de route commune pour le développement du Design et l'homogénéisation des pratiques hétérogènes qui se sont développées et qui coexistent au sein des quatre équipes. Les connaissances en matière de Design se sont développées grâce aux outils et aux documents produits au fil des années, mais également par la création de la communauté de pratique et l'intégration du design dans le référentiel des métiers de l'entreprise.

5.2. (II) Modélisation de l'intégration et du développement du Design

La reconstitution de la chronologie établie au niveau organisationnel a conduit à la proposition d'un modèle qui se compose en 8 blocs (voir Figure 1) : trois éléments (les ressources Humaines, les Activités, l'Expertise), reliées par trois mécanismes (le Déploiement, la Capitalisation, la Diffusion) et complétées par les Orientations Stratégiques et les Résultats Tangibles.

Les Orientations Stratégiques de l'organisation jouent un rôle central dans l'allocation des ressources dédiées au Design et notamment la création de nouvelles équipes et l'embauche de designers, c'est-à-dire à un ensemble de Ressources dédiées. Le Déploiement de ces ressources, au service d'Activités (c'est-à-dire de projets) produit des Résultats Tangibles. Il s'agit de la création de valeur par les activités de Design, par exemple, le développement de nouveaux produits, de nouveaux services, ou l'amélioration continue des processus existants. Ces résultats tangibles ont pour but de produire un impact positif sur l'expérience du client, des collaborateurs et sur la société. Les membres de l'organisation construisent ensemble, par la Capitalisation sur leur expérience dans le cadre des projets, une Expertise collective et partagée, qui se matérialise par exemple par la création de répertoires d'outils recensant et mettant à disposition de toute l'entreprise un ensemble de documents et de méthodes développés. La Diffusion de ces connaissances accumulées auprès des différentes équipes favorisent la compréhension, l'adoption et le développement du Design.

Figure 1- le modèle de développement de la capacité de Design



Le modèle a été utilisé pour étudier les trajectoires d'intégration du Design à trois niveaux, celui de l'organisation, des équipes (l'équipe innovation, la Digital Factory, l'équipe expérience et l'équipe I.T. évoquées dans la chronologie) et de deux projets emblématiques.

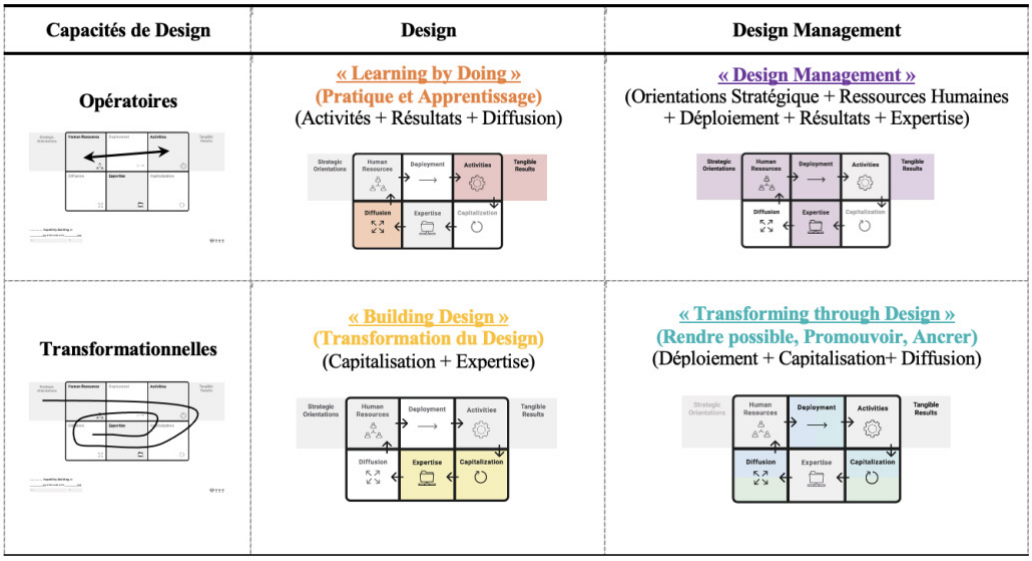
5.3. (III) Trajectoires d'intégration et du développement du design

L'étude des six trajectoires d'intégration du Design a mis en évidence l'existence de deux dynamiques : une dynamique horizontale, d'allers et retours entre les orientations stratégiques, les ressources, leur déploiement, les activités (le haut du modèle) ; et une dynamique en spirale, qui relie les blocs dans le sens des aiguilles d'une montre, et correspond à une construction progressive et itérative d'un bloc à l'autre rappelant un "cercle vertueux" conduisant au développement de la capacité de Design (Figure 2).

5.4. (IV) La capacité de Design intégré : un ensemble de capacités

Sur cette base, nous suggérons que la capacité de Design d'une organisation se décompose en cinq capacités dynamiques de deux natures différentes (Figure 2). Les capacités opératoires : la capacité d'apprentissage du Design pour les novices par la pratique « Learning by Designing » et la capacité à gérer les ressources de Design « *Design Management* ». Les capacités transformationnelles, d'ordre supérieur, qui contribuent au renouvellement permanent des premières: la capacité à construire progressivement une expertise collective et propriétaire en matière de design qui transforme la pratique individuelle « *Building Design* », ainsi que la capacité à transformer l'organisation par la mise en place de conditions propices aux activités de Design, qui à leur tour vont permettre de développer de nouveaux services et d'améliorer les processus « *Transforming through Design* ».

Figure 2- Matrice de définition des capacités de Design intégré



5.5. (V) Défis et recommandations pour l'intégration du Design

Sur la base des blocages observés sur les six trajectoires analysées ainsi que d'une analyse des difficultés rencontrés par les designers au sein des projets ou au niveau des équipes, nous avons formulé 6 recommandations pour l'intégration du Design. Celles-ci concernent : le rôle central du soutien de la Direction Générale ; la diffusion d'une signification stabilisée du mot Design afin d'éviter les confusions ; l'adaptation des designers au contexte de l'organisation ; l'anticipation des changements à envisager (la définition d'une marge de manœuvre) ; la définition d'un cap plutôt que d'un itinéraire (c'est-à-dire permettre l'émergence d'une trajectoire de développement plutôt que la réplication d'une trajectoire à priori) ; et enfin le développement d'une aptitude à « développer de nouvelles grimaces » en référence à l'expression populaire « on n'apprend pas aux vieux singes à faire la grimace » c'est à dire permettre de désapprendre les pratiques existantes et de renoncer aux habitudes, au profit de nouvelles.

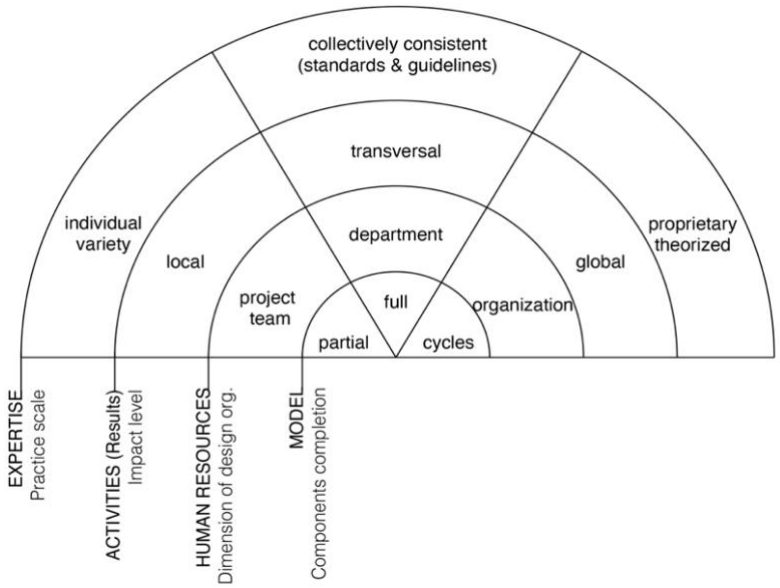
5.6. (VI) Une nouvelle échelle de maturité des capacités de Design intégré

Le modèle a été testé dans quatre autres entreprises issues de secteurs variés, mais qui revendiquent toutes l'intégration du Design à un niveau stratégique par son internalisation. Ce test de validité externe du modèle a confirmé son applicabilité dans des contextes variés pour l'étude des capacités de Design. Il a en sus révélé un intérêt des praticiens pour ce modèle en tant qu'outil pour décrire la capacité Design dans les organisations, mais aussi pour construire la stratégie de développement de la capacités Design.

En comparant les capacités Design des cinq entreprises, nous avons distingué trois stades de maturité par composantes du modèle et avons proposé une nouvelle échelle de maturité, « Design Maturity

Rainbow » (Figure 3). Cet outil permet aux entreprises d'évaluer la maturité de leur capacité Design de manière plus précise qu'à l'aide de l'échelle largement utilisé parmi les entreprises, i.e. « Danish Design Ladder ». En effet, les entreprises analysées revendiquant le même niveau de maturité selon cette échelle alors qu'elles montrent des niveaux très différents selon la nouvelle échelle proposée.

Figure 3- le « Design Maturity Rainbow »



6. Les contributions, les limites, et pistes pour de futures recherches

6.1. Réponses aux trois questions de recherche :

En proposant un modèle dont les composantes définissent les ressources et processus par lesquels la capacité Design s'incarne dans une organisation, nous avons spécifié et caractérisé ce qu'est une capacité Design malgré la multitude de significations associées au Design répondant ainsi à la première question de recherche. Nous suggérons que le modèle peut être utilisé de manière statique pour montrer la composition d'une capacité Design au sein d'une organisation, de manière chronologique pour montrer cette composition à des moments différents et enfin de manière dynamique pour illustrer la trajectoire de construction d'une telle capacité. Cette dernière utilisation doublée des capacités opérationnelles identifiées plus haut, nous a permis de répondre à la seconde question de recherche. Enfin, l'identification des capacités transformatives (seconde ligne de la Figure 2) montre comment la capacité Design transforme l'organisation (troisième question de recherche).

6.2. Synthèse des contributions théoriques, empirique et managériales

Ce travail a donc permis d'examiner et comprendre comment on construit une capacité dynamique qui rompt avec les pratiques existantes de l'organisation dans laquelle elle est développée. Il souligne la

mise en place d'une dynamique de cercle vertueux et interroge la manière dont celle-ci est initiée, soutenue ou entravée. Cela complète les travaux sur l'intégration du Design dans les organisations, notamment ceux de Wrigley et al. (2020) et Bjorklund et al. (2020), ainsi que les travaux sur les défis liés à cette intégration, en particulier ceux de Carlgren et al. (2016). Nous prolongeons et précisons les travaux de Jevnaker (2000) qui suggérait que le Design est une capacité dynamique.

Le modèle et la définition des capacités Design contribuent également à la littérature sur les capacités dynamiques en offrant une meilleure compréhension de la manière dont une capacité dynamique est construite au sein d'une entreprise et en suggérant l'existence de deux ordres de capacités dynamiques.

Nous suggérons qu'en complément au modèle proposé, la nouvelle échelle de maturité proposée et la segmentation de la capacité Design en six capacités peuvent être utiles pour les praticiens.

6.3. Limites de cette recherche

Trois limites à cette recherche ont été soulignées.

Premièrement, une limite d'ordre méthodologique, relative à la difficulté à établir une « familiarité distante » (Matheu, 1986) avec le terrain ; c'est à dire la difficulté à articuler les rôles de praticien et de jeune chercheur propres à la démarche de recherche-action (Eden et Huxham, 1993). L'immersion sur le terrain a été un atout dans cette recherche pour la collecte des données, mais entraîne aussi une plus grande subjectivité d'autant que je suis designer de formation. Différents dispositifs ont été mis en place pour en limiter les effets et assurer la validité interne des résultats.

Deuxièmement, l'entreprise étudiée utilise le mot « designer » en référence à un rôle et non à une qualification ; ainsi les designers ayant été observés dans cette enquête couvrent des designers novices (employés ayant suivis des formations courtes dans le cadre d'une reconversion professionnelle), des designers seniors (formés au Design et avec des années d'expérience), mais également une majorité de jeunes designers (tout juste sortis de formation initiale). L'incidence de cette hétérogénéité des expertises des designers étudiés (Cross, 2004) sur les résultats n'a pas été quantifiée.

Enfin, la littérature montre une grande diversité d'acceptations du mot Design et relativement à la qualification du Design comme une pratique professionnelle nous suggérons la segmentation en trois catégories : le Design industriel (pratique historique associée à la forme et aux produits industriels), le Design digital (pratique ayant émergée avec la révolution digitale, associée aux produits digitaux) et le Design stratégique (pratique associée au Design thinking et associée au Design de service et systémique). Il peut sembler utile de préciser à quel type de Design il est fait référence lorsque le mot est mentionné, sachant qu'une capacité de Design peut comprendre les trois types.

6.4. Ouverture : Quatre nouveaux axes de recherche

Nous avons identifié quatre axes de développement pour la poursuite de cette recherche : l'un relatif au modèle, deux propres au cas (à sa spécificité d'une part et à la poursuite de l'étude d'autre part), un dernier concernant la formation des designers intégrés.

Le modèle proposé (principal résultat de cette thèse) a été utilisé dans cette recherche pour étudier l'intégration du Design comme nouvelle capacité d'innovation. Suite au test du modèle dans le contexte d'autres organisations dans cette même optique, nous suggérons sa mise à l'épreuve dans le cadre de futures recherches pour enrichir la compréhension de la construction et du développement d'autres capacités dynamiques impliquant des compétences totalement nouvelles pour les entreprises comme la *Data Science*.

Tout en soulignant la spécificité du caractère mutualiste de l'organisation étudiée, nous avons démontré qu'il ne s'agissait pas d'un facteur facilitant l'intégration du Design. En revanche, nous avons identifié quatre facteurs dans le cas de la MAIF, qui ont pu contribuer favorablement au développement de cette capacité : l'émergence de nouveaux types de problématiques et de besoins (induites par des changements environnementaux ou la transformation digitale par exemple), la mise en œuvre d'une stratégie de différentiation (la recherche d'une singularité), l'adoption du statut d'entreprise à mission (qui impose à l'entreprise de considérer dans la mesure de sa performance les externalités positives au profit du bien commun en sus des profits économiques privés) et qui va de pair avec la volonté de faire évoluer une organisation mécaniste (c'est-à-dire centrée sur les processus) vers une organisation centrée sur l'humain. Cette proposition nécessite d'être approfondie et testée.

Nous avons suggéré que la MAIF se trouve désormais dans une phase d'institutionnalisation du Design qui suit la phase de consolidation. Cette phase correspond au développement en interne d'une communauté de pratique et à la stabilisation des ressources acquises (la pérennisation des effectifs progressivement constitués et des budgets alloués). Cela laisse présager d'une évolution de la capacité Design qui reposait jusqu'alors sur une dynamique d'acquisition de ressources externes vers un développement interne de la pratique (Design-as-practice), que nous envisageons d'analyser.

Enfin, ayant mis en évidence la nécessité pour les designers intégrés d'endosser deux rôles (pratiquer le Design tout en contribuant à sa diffusion), nous suggérons comme axe de recherche, l'investigation des formations au Design et l'étude de la nécessité d'une formation spécifique au Design intégré.

→ Acknowledgments

I feel like the Ph.D. experience is at once the most collective and solitary adventure there is. Collective, because it is the culmination of education beginning at an early age and countless actors contributed: teachers, mentors, sponsors. Collective also, because this adventure would not exist without the demanding and benevolent support of the thesis supervisor, the research laboratory welcoming the Ph.D. students in a long-standing research family; it would not exist either without the participation of the actors in the field, the benevolence of the tutor in the company, or the trust of the person who creates this research opportunity and encourages taking chances. Collective last, because in this solitary adventure, our dearest ones' support and understanding are simply essential. Hence, it seems impracticable to nominally thank, without forgetting anyone or saying too much, all the thesis contributors, the ones that in a way or another paved the way, with a remark, a course, or long-term support.

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I feel like Melissa Alauze deserves her acknowledgment paragraph as a twin-thesis sister. We met on our first day in the Research Center central office and traveled all the ups and downs of this journey together. This would not have been the same without you; without all the texting, GIFs, despair calls, meals, wine, and good laughs. Thank you, Melissa, for your tremendous support, and good luck with the last mile that stands before you in this adventure. Besides sharing the same research interests, we both belong to two research families, the second one being Exalt Design Lab.

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I dedicate this dissertation to my grandmother, Colette.

Concluding acknowledgments

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Julie

(Nov. 2020)

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Introduction

In a context dominated by change, new opportunities and threats, driven by digitalization (Yoo et al., 2012) and by the rise of the "Experience Economy" (Pine & Gilmore, 1999) as well as by successive crisis and global challenges[1] that are remodeling the customers' behaviors, firms are forced to adapt to grow and survive. As market dynamism increases, organizations have to develop innovation capabilities (Danneels, 2002). Design integration in organizations is part of this answer. Such integration manifests in plural ways: the adoption of a new practice such as Design thinking, or more generally, the allocation of Design resources dedicated to innovation processes such as projects or teams (e.g., adopting specific tools, hiring of experts, or outsourcing).

The use of Design in the business context is not new. It dates back to the 1950s, with the creation of Design consultancies and emblematic partnerships between designers and companies such as the Eames, Eero Saarinen, Paul Rand, and Isamu Noguchi at IBM, or Dieter Rams at Braun. However, the recent regain of interest in Design occurs within a different context that is currently shaped by organizations' digital transformation. In such a context, Design has been generally adopted through Design thinking - theorized and labeled as such by Brown (2008). Progressively, Design has no longer been restricted to Branding or Product Development. It has been adopted for services, processes, and even strategies. Its economic and social value values have been recognized beyond the sole aesthetic (McKinsey report by Sheppard et al., 2018). These values are essential to reach financial performance and competitiveness (DMI value Scorecard report, Westcott et al., 2013).

However, in addition to being a valuable resource, many studies evidence Design is hard to replicate, making it a competitiveness lever according to the Resource-Based View theory.

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[1] The crisis influence on businesses vary depending on their nature: financial, political, social or sanitary for the most recent one; however, some studies argue that changes in the economic environment induced by those discrete events call for creative response and represent an essential driver to innovation (Taalbi, 2017). Regarding the global challenges, we show the UN's current framework, the Sustainable Development Goals (Resolution adopted by the General Assembly on 25 September 2015), which invites individuals and organizations to contribute to some of the 17 Sustainable Development Goals and 169 targets for Sustainable Development.

In this approach, the word is not to be understood as the verb, as a synonym of creation or elaboration. It instead refers to what Kimbell (2012) designates as "Design-as-practice" and "designs-in-practice." "Design-as-practice" encompasses "what designers do," their mindset, the activities or routines, tools, how they use them, and their ethos. "Designs-in-practice" stands for what is produced through "Design-as-practice," the outputs and the outcomes while underlining that the delivery puts an end to something that could be refined infinitely as any creative output. Researchers agreed on the complexity of providing a standard definition to Design (Sahakian, 2017). Papanek (1984) highlights this by designating it as a "complex function." Therefore, the adoption of Design in the context of organizations adds a layer of difficulty.

There is a growing literature on Design in organizations focused on Design, Design Thinking, Design management in various contexts, such as companies from the industrial sector, technological companies, and more recently, service companies or the public sector. Indeed, the first stream of research focused on demonstrating the value of Design for organizations and their management. This led to a new dedicated field of study: Design management, which covers both the management of Design and the contribution of Design to management. Design's understanding grew as researchers compared it with other managing perspectives (Boland and Collopy, 2004; Liedtka, 2000). As Design popularity and use increased with the recent adoption of Design thinking, it became of particular interest in Innovation Management Research. Innovation management scholars focused on the value of Design and the interactions with the other functions involved in innovation processes, especially Marketing (see special issues of the Journal of Product Innovation Management of 2005 and 2011 on Product Design Research and Practice). The spread of Design thinking made Design accessible to non-designers and helped designers explicating their practice to non-designers. It has been considered valuable to firms' innovation capabilities (Ben Mahmoud-Jouini et al., 2019; Carlgren, 2013) but uneasy to implement (Carglren, Elmsquist & Rauth, 2016).
Design has been adopted either by commissioning practitioners from outside the company, called externalization, or having in-house Design resources called internalization. Some researchers (Jevnaker, 2000) studied the complementarity of these two configurations that are often used in combination in a hybrid one.

In this research, we focus on organizations that decide to integrate Design by developing an in-house Design capability through an internalization strategy that may be combined with external sourcing.

According to the Resource-Based View, firms are considered collections of resources that form capabilities. Capabilities are defined as the capacity to purposefully deploy resources towards activities to produce a significant output (Amit and Schoemaker, 1993; Winter, 2000; Grant, 1991); they are a combination of experience, knowledge, and skills (Hobday et al., 2012). The renewal of the firm's

capabilities is seen as essential to the firm's survival. Teece et al. (1997) distinguish the Ordinary Capabilities related to Operations from the Dynamic Capabilities that contribute to renewing a company's competencies. They are difficult to imitate and take time to develop. Dynamic Capabilities include, for instance, Alliancing, Acquisitions, and New Product Development.

Building on recent contributions on Design, Design Thinking, Design management in management studies -primarily focusing on innovation management and strategic management-, we argue that Design can be considered for some organizations as a Dynamic Capability. We intend to focus on in-house Design capability-building in organizations that are new to Design, i.e., organizations in which the decision for Design integration is recent and that are not familiar with Design use.

We intend to contribute to the growing literature on Design in Management through this focus through a better understanding of Design integration within organizations and its potential impact.
We intend as well to contribute more generally to the literature on Innovation Management and, more specifically, on Innovation capabilities-building. We argue that studying the building of a capability that is entirely new to the firm, such as Design, goes beyond the capabilities analyzed by Eisenhardt & Martin (2000) or Danneels (2002, 2008, 2011), enriching these approaches.

Understanding what in-house Design capabilities cover enables us to study the relation of those capabilities to the organization. Recent studies on Design adoption in organizations have shed light on conditions, pitfalls, and levers to consider (Carlgren et al. 2016a; Wrigley et al., 2020; Bjorklund et al., 2020). Researchers agree on the difficulty of such an undertaking that one can expect to be even more salient in new-to-Design firms.

Our research question is therefore three-fold:

- What does a Design capability encompass?
- How is Design capability built and developed in an organization not used to it?
- How does this in-house Design capability transform the organization?

We investigate these research questions by analyzing a leading French insurance company known for its customer relationship excellence, MAIF (Mutuelle d'Assurance des Instituteurs de France). The decision to integrate Design is part of a broader transformation driven by a ten-year strategic plan targeting the following objectives: diversify the offer and tackle new issues to face the environmental changes. Design integration started with the mission of innovation capabilities renewal given by the Head of Strategy to the Head of Innovation. It was fostered by the digital transformation strategy led by the Chief Digital Officer (CDO).

This research originated in the CDO demand, who was convinced that the value of Design for Customers and Employees Experience is critical for the Digital strategy. As part of the Digital transformation strategy, he initially articulated this question: "how can we transform the company into

an “Experience Company” to raise its ability to face the changes in its environment and shift from a service to an “Experience economy”?

The “Experience Company” concept refers to the required competitiveness driven by “digital natives” service firms (i.e., firms born from the opportunities raised by the digital technologies) that bring new standards of user experience in services. The thesis project was part of a new mission created (the “Experience Company mission”) to Design delightful experiences for the customers and the employees. The mission was part of the Digital transformation team and reported through the CDO to the top management.

The case illustrates the variety of configurations Design can take in an organization: adopting Design thinking, allocating specific resources (office spaces, dedicated budgets), hiring designers, developing Design tools, working with external freelance designers and Design agencies, etc. Design has been applied as a process from idea generation to the implementation of topics ranging from communication to offering to strategy (i.e., climbing the Danish Design ladder from the first level to the fourth[2]). Design integration started very early with a bottom-up initiative at the individual level. It was then sponsored by the top management, who turned it into a strategic matter before moving to the organizational level.

As a designer trained both in Design and in Management, I was given the opportunity in the frame of this doctorate research to immerse myself in the field in an action-research setting. I participated in Design integration through projects. My operational involvement in the field decreased as the study progressed to allow for more reflexivity on what I had observed and experienced. We proceeded in three phases. The investigation started with full-time immersion in the field for several months. It moved to a part-time immersion, with periods in and out of the field, and eventually, I stepped out of the field to conduct the analysis and write the dissertation. This dissertation explores the building of Design capabilities and their impact on the organization in a longitudinal case study. We adopted a qualitative research approach (Dumez, 2016). We worked on three single analysis levels, focusing first on the organizational level, then zooming at the team level and the project level. Finally, we moved to a multi-level analysis, allowing us to develop original theoretical and managerial results.

We offer a model to describe Design capabilities building in organizations new to Design based on this work. We present and discuss seven propositions that contribute to knowledge on Dynamic

[2] The Danish Design Ladder (Ramlau, 2004) identifies four levels of the Design integration into a company's activities: (1) the absence of Design, (2) Design applied to aesthetics, (3) Design applied to processes, (4) Design applied to strategy.

Capabilities-building and Design in organizations. We argue this model can serve as a grid of analysis and data collection to researchers investigating Dynamic Capabilities building and especially Design capabilities. Design managers can also use it to help them create and develop Design capabilities, capitalizing on contributions from several previously studied companies' experiences. On the other, the findings offer insights regarding Design development as a Dynamic Capability and its deployment within the firm. This is interesting to gauge Design specificity compared to other capabilities, such as New Product Development, also developed to enhance the firm competitiveness and its ability to outperform competitors in unstable environments. This research contributes to the understanding of capabilities building in an innovation context. It also offers an empirical exploration of Design integration at a strategic level as a transformative lever.

The dissertation is articulated in five chapters.

The first chapter displays the setting of this case-based research. The story gives an outlook on the transformation, and the specificities of the firm studied. At the same time, it introduces the arrival of Design in the organization, situating the main events and critical turning points.

The second chapter digs into the existing literature, presenting key insights on Design and Design integration and strategic change in organizations by introducing the concept of Dynamic Capabilities. Then, we outline the theoretical framing of the research that situates the fields we aim to contribute to and the research question we focus on.

Third, we present our methodological approach and research Design: the data collection and the data analysis. We show the main steps in the development of this thesis.

In the fourth chapter, we display the data from the case, showing the Design development from a chronological standpoint, before focusing on each of the three levels of analysis adopted: the organization, the teams, and the projects.

In chapter 5, we present our findings and discuss them in light of existing contributions. We propose a model and use it in our case; then, we share key learnings and avenues for future research.

The conclusion synthesizes the main contributions and new research focus.

N.B:

In the following, the pronoun "We" refers to the research work and the scientific productions that emerged from the interactions between the doctoral student, the thesis supervisor, and players in the field. The use of the pronoun "I" corresponds to the fieldwork and the organization's practitioner posture.

Figures extracted from the company's official documentation are displayed in their original version and are therefore in French.

Chapter One

As announced in the introduction, this dissertation is based on a single longitudinal case study. This case is about the story of transforming a company where Design plays a crucial role, whereas it is non-familiar to it. This organization is a Mutual insurance company. We argue that it is interesting for three reasons: Design integration in the insurance sector is relatively new, and Mutual insurance companies are human-centered and purpose-driven, two core principles of Design.

This chapter starts with the company's presentation, i.e., MAIF (the insurance sector in which it operates, the specificities of mutualist organizations such as human centricity, and the company's history). It then narrates the successive transformation plans, focusing on the latest one central to this research. In this transformation, we focus on Design integration that progressively led to the building of Design capabilities. We relied on archival data and interviews to retrieve the main events and facts.

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I. The case specificities: a pioneering innovative company in a competitive sector

MAIF is a Mutual insurance company operating in the French insurance sector. It is a pioneer of Mutual insurance companies in France, i.e., it has contributed to the development of other Mutual companies subject to a renewed interest in light of sustainable development and social concerns that promote the rise of local communities.

A. MAIF: A Mutual insurance company

This part situates the organization we study within its environment and offers a focus on Mutual organizations specificities.

1. MAIF, a key player in the French Insurance sector

The French insurance market is one of Europe's most dynamic and the fourth biggest globally if ranked by total revenue (Trainar and Thourot, 2017). It is defined as a dynamic and secure market with sustained revenue growth. A report in 2018 from the French Prudential Supervision and Resolution Authority (ACPR) identified 713 recognized and authorized organizations belonging to the insurance sector. There are four types of companies: (i) the commercial companies and (ii) the Mutual companies, both governed by the national Insurance Code, then (iii) the mutual, governed by the national Mutual Code or the Rural Code and (iv) the pension funds governed by the national Social Security Code (Lambert, 1998).

According to the French Insurance Federation (FFA), the insurance business plays a significant role in the economy, "protecting households and businesses" while financing the economy. The insurance sector would be the largest institutional investor in the European Union. European insurers invested more than €10,300 billion in 2018, equivalent to 58% of the European Union's GDP. In 2018, 900,000 people were directly employed by nearly 3,200 insurance companies operating in Europe (according to a French Insurance Federation report, 18/11/2019).

The insurance market is divided into two segments: the property and liability insurance business (i.e., contents insurance including home insurance, car insurance, transportation insurance, liability insurance, credit insurance, professional insurance, assistance) and the insurance of persons (i.e., health insurance, accident insurance, life insurance, pensions). The first segment targeting individuals, professionals, and legal entities weighed in France in 2018, €56 billion; the second segment dealing with financial asset management for individuals —with products such as life insurance contracts and investments contracts, compensations and services related to sickness and injury— represented for the same period €163.4 billion.

MAIF is one of France's leading Mutual insurance companies with an annual turnover of 3.6 billion Euros (out of 219,4B euros of Insurance in France) in 2018. In 2017, MAIF was ranked 19 among the 20 most significant market shareholders who gathered 90% of the total national market shares (Esquieu & Manfrin, 2018). It was among the first Mutual insurance company created at the beginning of the 20th century.

MAIF offers a wide range of insurance products, but also financial services with savings products. It is aimed at individuals, professionals, companies, and associations. It has more than 3M policyholders and 7M beneficiaries. This number has been growing for the past few years. 32k new policyholders signed up in 2018. It is ranked among the French insurance companies as the 6th most prominent car insurance provider (3.6M policies, on average 9% of the market), accounting for more than half of its total revenue stream. The 5th insurance company regarding home insurance contracts (3.3M, in average 8% of the market). These rankings contrast with its 19th position in 2017 (see Figure 1 below). It deals with 17.82B of assets management, among which 83% are socially responsible investments.

MAIF earned various awards for innovation, service quality, and customer satisfaction. It has been receiving the national award for the "best customer relationship," created by Bearing Point and Kantar, two global consultancies, for the past 16 years in a row.

Figure 1 –The ranking of the 20 biggest market shareowners in France's insurance sector in 2017.

Rang 2017	Rang 2016	Groupes	CA France en M€ 2017	CA France en M€ 2016	Variation 2017/2016	Part de marché en 2017 Par groupe	Part de marché en 2017 En cumul	Part de marché en 2016 Par groupe	Part de marché en 2016 En cumul
1	1	Crédit agricole Assurances	26 025	26 089	- 0,25 %	10,71 %	10,71 %	10,90 %	10,90 %
2	2	Axa	25 932	25 984	- 0,20 %	10,68 %	21,39 %	10,86 %	21,76 %
3	3	CNP	22 820	24 251	- 5,90 %	9,39 %	30,79 %	10,13 %	31,89 %
4	5	Covéa	14 665	14 372	2,04 %	6,04 %	36,82 %	6,01 %	37,90 %
5	6	Allianz	13 379	13 098	2,15 %	5,51 %	42,33 %	5,47 %	43,37 %
6	7	BNP Paribas Cardif	12 636	11 356	11,27 %	5,20 %	47,53 %	4,75 %	48,12 %
7	8	Generali	12 125	11 002	10,21 %	4,99 %	52,52 %	4,60 %	52,72 %
8	4	Natixis Assurances	11 273	19 557	- 42,36 %	4,64 %	57,17 %	8,17 %	60,89 %
9	9	Groupama	11 130	10 860	2,49 %	4,58 %	61,75 %	4,54 %	65,43 %
10	11	Société générale Insurance	10 370	9 323	11,23 %	4,27 %	66,02 %	3,90 %	69,32 %
11	10	ACM	9 601	10 305	- 6,83 %	3,95 %	69,97 %	4,31 %	73,63 %
12	13	AG2R La Mondiale	8 884	7 909	12,33 %	3,66 %	73,63 %	3,31 %	76,94 %
13	NA	Vyv	6 726	6 752	- 0,39 %	2,77 %	76,40 %	2,82 %	79,76 %
14	12	Aviva	6 489	8 080	- 19,69 %	2,67 %	79,07 %	3,38 %	83,13 %
15	14	Macif	6 161	6 293	- 2,10 %	2,54 %	81,60 %	2,63 %	85,76 %
16	15	Suravenir	4 982	4 646	7,24 %	2,05 %	83,66 %	1,94 %	87,70 %
17	16	SwissLife	4 627	4 040	14,53 %	1,90 %	85,56 %	1,69 %	89,39 %
18	17	Malakoff Médéric	4 210	3 840	9,64 %	1,73 %	87,29 %	1,60 %	91,00 %
19	18	Maif	3 517	3 447	2,04 %	1,45 %	88,74 %	1,44 %	92,44 %
20	20	Pro BTP	2 858	2 827	1,08 %	1,18 %	89,92 %	1,18 %	93,62 %
		Total CA France Top 20	218 410	224 031	- 2,51 %				
		Total CA France [1]	242 900	239 300	1,50 %				

1. Montants issus du rapport annuel de l'ACPR *Les chiffres du marché français de la banque et de l'assurance 2017*. NA : non applicable.

SOURCES : CAHIERS DE L'ASSURANCE N°1, LES SOCIÉTÉS CITÉES ET LES ANALYSES DE KPMG

2. The specificities of Mutual companies

Mutual companies are cooperatives. Three models of cooperative enterprises exist in France: the associations —mostly found in organizations related to sports, cultural and leisure activities—, the cooperatives —operating in very various domains such as banking, savings, products or consumption, and the Mutual structures that are commonplace in the insurance sector, especially for health insurance in France. Mutual structures have repeatedly attracted renewed interest after the economic and social major crisis, first in the 1930s following the 1929 crisis and more recently in the aftermath of the 2008 crisis. According to Cartier et al. (2012), the cooperative model questions the organizations' purpose compared to our societies' economic and social life. They cite a French law (from the 10th of September of 1947) to define cooperative governance as based on four founding principles: the democratic or participative management of members according to which one member is equivalent to one vote; the dual status of members who are beneficiaries, sort of customers and at the same time owners of the company; the limited lucrative nature of the structure and the solidarity among members. This is in line with the international view on Mutual organizations, as defined by Archambault (2009) in the International Encyclopedia of Civil Society[3]. She establishes solidarity among members, democratic governance, and limited profit-sharing as core to Mutual organizations principles, and adds a few more such as the free access to membership, which means that people do not pay to become a member or to quit; the absence of shares signifies that members have equal rights and duty independently from their funds' contribution; and finally, the independence of the organization, privately owned which implies it cannot be nationalized nor be eligible to takeovers.

The following table (Table 1) sums up the main differences between Mutual organizations and capitalist ones, based on Cartier et al. (2012):

[3] Edith Archambault. Mutual Organizations, Mutual Societies. Helmut K. Anheier, Stefan Toepler. International Encyclopedia of Civil Society, Springer, pp.1000, 2009.

Table 1 - A comparison between cooperative and capitalist organizations)

	Cooperative Organizations	Capitalistic Organizations
Ownership	Cooperative "Members"	Shareholders/Stockholders
Representation modes	Under the democratic principle: "one man-one vote."	Based on the economic interest: "one share/stock - one vote."
Interests	Search for social utility (Labye et al. 2002) and meeting an identified need. The gross operating surplus is either redistributed or reinvested to increase the organization's robustness.	The pursuit of profit and the payment of dividends.
The core of the model	Human / Members	Financial assets
Structure and geographical distribution	The mutualist structure is decentralized. The regional and national levels are at the service of the local level (the company relies on proximity and a good knowledge of its territory and customers). The national and regional levels are defined as "tools of representation and administration, which generally had little political power and weight in the organization's functioning at the outset: they are at the service of local structures." However, this tends to be reversed over time.	The capitalist structure is often centralized: the headquarter decides, and the network represents. "The local structure is only a representation agency, and the intermediate level is structured around a geographical dimension to optimize the organization of local teams."
Owners and remuneration	A voluntary commitment of the members who are elected at the local General Meeting to administer the fund	Dividends are paid to shareholders whether or not they participate actively in corporate governance.
Customer relationship	An approach based on advice to the members: the employees are considered 'customer advisers' and do not receive any sales commission.	A sales approach to customers driven by business incentives.
Decision-making authority	Separate decision-making powers. On the one hand, the executives dealing with the company administration and business; on the other side, the volunteer administrators in charge of political decisions.	Several possible forms: CEO, supervisory Board, management board, or separated roles of Chairman and Managing Director.
Executive Management	The regional structure appoints the Managing Director. The Chairman is elected indirectly by the member-policyholders via the administrators elected at the General Meeting. Remuneration ranges are lower and less attractive.	The Chairman of the Board of directors and often the chief executive officer have salaries with a substantial variable component.
Board of Administration	The administrators are reimbursed for their expenses but are not paid.	The administrators in a capitalist bank receive directors' fees when attending a Board meeting.
General constraints	(Identical) Complexity due to the critical size of the organization Submission to the requirements of the environment (including the State and the financial markets)	

Therefore, a Mutual organization is supposed to have a close relationship with its customers. Customers have a central role in Mutual organizations. Indeed, Cartier et al. (ibid, p 28) quote John Dewey about corporate democracy:

> "In the pragmatic spirit of our study, we can only agree with the idea developed by John Dewey who notes that «it is the person wearing the shoe who knows best if it hurts and where it hurts, even if the shoemaker is the expert who is on finding the remedy. A class of experts is inevitably so far removed from the common interest that it necessarily becomes a class with vested interests and private knowledge - which, on matters that concern society, amounts to non-knowledge" (John Dewey, 2003).

In the following part, we explore how this human centricity is illustrated in MAIF history and its characteristics.

B. A "human-centered" organization from its inception

MAIF has been a human-centered organization due to an inheritance from the history and the Mutual organization model, as outlined in this quote from the Chief Digital Officer (2017):

> "MAIF is fundamentally, historically, natively, a customer-centric organization. It's called a Mutual benefit company. It is built by, for, and at the service of its members. The customer-centricity, [...] has been in the statutes since 1934."

Indeed, unlike public insurance companies, a Mutual insurance company is owned by its customers called policyholders members. One can argue that MAIF matches the characteristics of the organizations from the Social and Solidarity Economy that have a particular relationship with their customer base as stated below:

> "Their specificities lie in the search for a social utility: the satisfaction of the needs of the members of the group to which they belong (through the presence of the same collective---- identity, the same social origin, ideological proximity) (Labye et al., 2002)."

1. A response to the needs of a local community of elementary school teachers

The initial need that motivated the company's launch in 1934 is searching for an efficient, transparent car insurance policy at a fairer price. Indeed, Edmond Proust, one of the principal founders and the company's first CEO, declared:

> "The insurance companies' rates are exorbitant, but the reimbursements poor and late."

The Mutual insurance company MAAIF - **M**utuelle d'Assurance **A**utomobile des **I**nstituteurs de **F**rance - is born from an initial general meeting that gathers 156 teachers convinced of the interest of building a community to share the risks related to their car use. This founding community reunites teachers from elementary schools from 30 different departments of the Centre West of France; the

majority is co-located near the city of Niort. These teachers have similar living conditions and wages and live in an area where they have heard of existing Mutual organizations operating in the agricultural sector or charity in line with their political views. Furthermore, they are known for being cautious and foresighted. This is how this community is described in the statuses of the company and the first public communications. Therefore, the first community members -301 "policyholders"- shape the customer base that is local and built on a professional network.

It differs from the insurance companies that existed at the time because there are no intermediaries. In its first year of existence, the company has no dedicated offices nor employees; it only exists as a network of like-minded individuals, bounded by the paperwork they signed, i.e., the contract and capital accumulation resulting from the subscriptions they paid. The company is a community aimed at helping any member that would face a car accident based on a collection of capital distributed in solidarity in case of a loss. It results from a "collective creative project" (Chaumet, 1998) driven by humanist values of solidarity and faith.

2. An alternative to capitalism: Mutual benefit and political activism.

To highlight the differences between MAIF and existing insurance companies, a necessary detour through the French history of insurance seems useful. According to a report on the development of the insurance sector from Swiss Re, one of the biggest global providers of reinsurance and insurance created in 1863, the first insurance companies in France dates back to the 15th century. It developed in the maritime sector, in port towns such as Marseille and La Rochelle. Wealthy individuals offered insurance policies to cover the damages and losses due to piracy for ships and shipments. The insurance business is mainly provided by well-off individuals in close relationship to the monarchy in its beginnings. New insurance providers emerged in the late 18th century. For instance, "La Royale" and "Le Soleil-Aigle" are funded in 1786 by a banker and a baron in agreement with the ruling king, Louis XVI. Those two companies are public limited companies that offer fixed-premium fire insurance. During the French Revolution, these companies have been banned from operating for being "detrimental to the Public Credit and the liberty of the French population." They reborn into a new insurance company launched by a group of bankers and industrialists, right after the final abdication of Napoléon Bonaparte that had kept the ban active until then. The company is still active nowadays, operating under the name "Gan." Another type of company comes to light in 1774, the solidarity funds, such as the "Marne Fire blaze victims' Fund" (la "Caisse des incendiés de la Marne"). It has been created by a clergyman and focused on a single risk: fire destructions. It relies on peer-to-peer solidarity and is derived from a local need. Those charity or solidarity funds are ancestors of Mutual insurance companies, and the "Caisse des incendiés de la Marne" became a Mutual insurance company in 1976.

The "modern" insurance sector was established in the 19th century. More than 200 companies have been launched in few decades, but only 50 remained by the end of the century. Industrial and banking companies supported the development of those firms. Many went bankrupt or lost substantial market shares due to the competition. High prices combined with unreliable compensations are the most critical pain points for customers. Prices include the remuneration of "general agents" in charge of recruiting new customers and distributing the policies. The companies agreed on standards prices that prevented price competition. This does not play in favor of the customers' interests.

MAIF has not been built by wealthy individuals, neither by charities, nor religious entities, even though it relies on the same foundations, but by its beneficiaries, the policyholders. Another key difference between existing insurance companies in 1934 and MAIF is the absence of external financial shareholders and the policyholders' involvement in the governance, i.e., the mutualist model. Once a year, the company holds a public General Assembly that any customer can attend. As previously mentioned, the founders' focus is on fairer and lower prices (as opposed to a generic product that includes some covers unnecessary to teachers) and the suppression of intermediaries (no general agents distributing policies). MAIF also promises a more excellent reliability thanks to the solidarity principle in case of need (this is crucial in the context of a high rate of bankruptcy). In other words, MAIF relies on its customer community and is built by a group of customers for their peers. Historically, Mutual companies are built around professional communities. MAIF was originally the "Mutuelle d'Assurance des Instituteurs de France" (literally, "Mutual insurance company for French teachers"). MACIF was the "Mutuelle d'Assurance des Commerçants et Industriels de France" (literally, "Mutual insurance company for French retailers and industrial workers), MAAF insured craftsmen and MATMUT insured workers. At first, the existing insurance companies did not see MAIF based on the customer involvement as a sufficiently robust model; hence they did not consider this new entrant a threat. They ultimately unsuccessfully looked for ways to cut off its development once the firm has been established and started to have a tangible impact on their market shares.

Beyond the satisfaction of the insurance needs lies a political view. The founders built the company as an alternative to existing "profit-driven" insurance providers. They looked for Mutual instead of financial benefits and rent-seeking behaviors. They clearly expressed their view in the first documents issued:

> "MAIF is a 100% Mutual insurance company, completely independent of the capitalist system, which is especially harsh in the insurance sector."
>
> "you have acted as a mutualist by joining MAAIF (...) you have freed yourself from capitalist organizations based solely on profits (i.e., the exploitation of the legitimate concern of any far-sighted individual seeking guarantees against Fatality), to enter a corporative organization strictly based on the principle of solidarity."
>
> (Extract from the "being a mutualist manifesto" published by MAIF Founders and distributed to the policyholders, 1937)

In those documents, may it be correspondences with members of the community or calls for subscription published in newspapers, the company reminds the prospects and its policyholders (customers) that joining the community, i.e., subscribing to a policy, is a commitment that gives them both rights and duties. Four duties are outlined to be "good customers" labeled as "true mutualists." Two tasks require the active participation of customers (members) in the company's life (community). This includes (1) the main activities such as the governance or the contribution to the development of the services but also (2) the development of the customer base (the growth of the community by convincing colleagues to join):

> (1) "You will be a true Mutualist if you take an interest, as closely as possible, in the life of the «Mutual company» by joining your departmental (local) group. For the «Mutual company» to live and adequately develop, it is necessary to contribute in the spirit of solidarity, share the wisdom, prudence, and intelligence of each of us. These contributions, if they are unanimous, will easily make up for the technicality of the business."
>
> (2) "You will be a Mutualist if you know how to convince your hesitant or timid colleagues that their interest and duty require them to join the MAAIF. To be strong, we must be a lot ..."

The other two look like a code of conduct: (3) one reminds the principles of solidarity and asks the drivers to be prudent and drive responsibly, and the other (4) involves a to-do list to complete before moving in case of an accident.

> (3) "You will be a true Mutualist if, behind the wheel of your car, you know how to avoid any recklessness, if you know how to brake in time, how to reduce your speed in dangerous passages, how to resist the madness of overtaking or the desire to dazzle your passengers with your virtuosity as a driver, and finally if you always have in mind the clear notion of your constant responsibility towards the community that guarantees you and that you guarantee yourself."
>
> (4) "To be truly, totally Mutualist. You will attach the MAAIF badge to your radiator; for non-mutualists, the triangular badge will remind them of their duty and prove to them, by the frequency of their meetings, our power Mutual. You will always have your «Roadbook Guide» at hand, where you will instantly find the addresses of suppliers and hotel owners who are friends, who are close to us by a common ideal, and to whom you can show solidarity.
>
> In case of an accident, you will not panic because you will have in mind the comforting ideal that your interests will be defended not by a capitalist company, more concerned with profits and dividends than with your defense, but by fraternal and devoted comrades in misfortune.
>
> However, you will be scrupulous in recounting methodically, objectively, and the circumstances of the disaster to provide the services of the MAAIF with all the necessary elements of appreciation."

The service is built, taking into account the customers' specific behaviors and asking them to follow guidelines. On top of the financial coverage in case of a loss, it offers human assistance and support from the local community. It also considers a broader perspective than insurance, encouraging customers to go to a network of partner businesses in line with the community's values (it could be hotels or car parts dealers) and whose quality of services has been assessed.

> "You will be able to set out on roads full of pitfalls because you will have with you, at your side, constantly, unfailingly, the help of all your comrades in solidarity to protect you to the fullest extent of human possibilities against the unfortunate blows of fate."

3. Iterative customer-centric development of the insurance covers

Historically, each insurance company in France started by focusing on a single risk, first maritime, then fire. It evolved in the 20th century, including life insurance, health coverage, and generic bundles of risk covers distributed worldwide. MAIF, like any previous insurance company, started by focusing on a single risk. The first cover at the origin of the company is focused on third-party accident insurance. This comes from the observation that it is the main cover that most drivers look for when insuring their car. Having a single cover at the beginning is simple to operate (in terms of risk calculation and price definition, and service). It enabled the company to grow and to expand its financial capital fast and thus its robustness. So, in the beginning, policyholders accepted a range of covers more limited than other insurance providers. New covers have been developed in a short time, following the policyholders' priorities. The new covers included, for instance, insurance against theft and fire and legal defense fees. They were developed following a product roadmap according to the policyholders' priority needs. This is a customer-centric approach.

An example of this customer-centric approach is the bike policy developed during World War II. The context generates a sudden drop in car sales and car use, resulting in a decrease in the need for car insurance. To compensate for the fall of subscriptions central to the company revenue, the company must adapt its offer to survive. In 1940, MAIF launched a cover dedicated to bicycles. This cover is extended beyond the policyholders to the rest of their families. The first call for membership issued failed: very few policyholders subscribed to the bike cover. Two reasons are at the roots of this first failure. First, an additional cost for the Paris region inhabitants —explained by a higher risk— generated a feeling of injustice that blocked many people from adhering. Second, the cover did not include a "theft" guarantee, one of the highest risks at the time. Taking advantage of these two lessons, a new bicycle insurance policy has been developed. It generated enough subscriptions to keep the company afloat and save it from bankruptcy

A distributed organization enabled the proximity to the customers at a local level. Local customer representatives were in charge of selling the policies and collecting feedback. A "mutualist" are asked to improve the company, by giving suggestions and opinion on the strategic orientations:

> "(…) it is necessary to adhere to the departmental sections that have been created. They will enable "Mutualists" to be kept up to date on the administration of the Mutual and, if necessary, to make any suggestions for the betterment of the organization." (Extract from the roadbook guide of 1936)

4. Patient and tolerant customers rewarded by the adequacy with their needs and values

Starting small, the company engaged its customer community calling for tolerance and sacrifices from the policyholders. Customers have been asked to be patient and trust the company's ability to bring to life more extensive covers and a better experience in the near future. This aspect persisted in time.

> "To those of them who are impatient to see MAAIF apply the full range of guarantees, we ask you to reflect on the enormous effort already made and the ground already covered. Paris was not built in a day. Rushing ahead with a program could have jeopardized the success of the undertaking. Indeed, it is not enough to register contracts. We must be able to ensure their execution to safeguard individual and collective interests." *(excerpt from the company archival document: customer roadbook guide of 1936)*

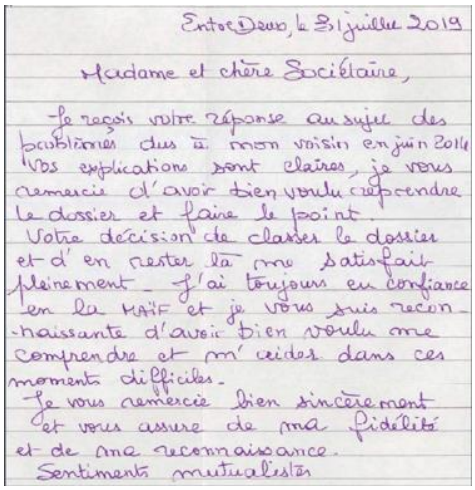
To justify this progressive development, the company's founders emphasize the attention paid to the service delivery in the customer relationship as equally important, if not more important than the distribution of contracts.

A roadbook guide was edited in 1936. This book, written by some customers for others, is edited annually with updates and acts as a book of reference for car travel, sort of a mobility assistant. It is described as "a relentless and selfless" work conducted by policyholders. When the customers have to get in touch with MAAIF for any purpose whatsoever, they can find the proper person to talk to and the best way to reach that person in this book. It includes some guidelines to follow in case of a car accident, the principal risk insured by the policy at the time; this is the book to have in the car mentioned in the "Mutualist's manifesto." Since policyholders had this document in their vehicle, the authors had the idea to work on its content enrichment. It was enriched with information unrelated to insurance that could be used for any driver when traveling. The following extract explains the roadbook use:

> "The guide has to be placed in your car. You must be able to consult it at any time if the circumstances require it. It will help you to get out of embarrassment. Finally, combining the useful with the pleasant, you will still find valuable information from a tourist perspective."

It is similar to the guidebook launched by the tire manufacturer Michelin, "le guide rouge" (the red guidebook), also known as "le guide Michelin," still famous for restaurant ranking and touristic sites across France. MAIF Roadbook has lasted for decades until the 2000s. However, other documents dedicated to the customers, such as a short insurance lexicon, have been co-created throughout the years to improve the customer relationship quality.

The founding principles and the other specificities of the firm inherited from the founders remained. For instance, the customers' tolerance towards the company is still evidenced today in their feedbacks. When policyholders express pain points in their interaction with front-line employees, they outweigh their negative feedback by their trust in the company's ability to get better in the near future. The following feedbacks evidence the policyholders' persistent trust and benevolence:



Entre Deux, le 31 juillet 2019

Madame et chère Sociétaire,

Je reçois votre réponse au sujet des doublonnes dus à mon voisin en juin 2016. Vos explications sont claires, je vous remercie d'avoir bien voulu reprendre le dossier et faire le point.
Votre décision de classer le dossier et d'en rester là me satisfait pleinement - j'ai toujours eu confiance en la MAIF et je vous suis reconnaissante d'avoir bien voulu me comprendre et m'aider dans ces moments difficiles.
Je vous remercie bien sincèrement et vous assure de ma fidélité et de ma reconnaissance.
Sentiments mutualistes

Figure 2 – A gratitude note received from one customer in 2019

"It seems wrong to me that one cannot obtain a certificate of insurance online. Can you fix this? Still, I have been very well greeted by the agency in Verdun. Thank you for considering this remark." (sent from one policyholder in April 2019)

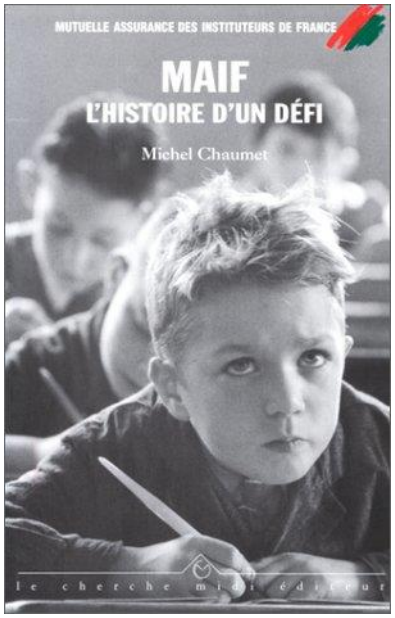
"Coming without an appointment, I was exposing myself to a possible wait, and I did wait! However, we understood each other well with the hostess, and, as a result, it was completely serene and bearable. Thank you to her." (sent from one policyholder in August of 2019)

While most of the suggestions are collected through quality surveys and tools, the customers' service receives many spontaneous gratitude notes (as in Figure 2). The company inheritance is noticeable in the language used both in the customer relationship and internally. The firm developed non-commercial activities dedicated, for instance, to education, cultural or sports events promotion.

This section highlighted the company's human-centeredness and the specificity of its customer focus and relationship inherited from its mutualist and activist characteristics. In the following, we focus on a historical perspective to investigate the organization's innovativeness and evolution.

C. The company history: An innovation journey

Figure 3 – Chaumet (1998) - MAIF, L'histoire d'un défi (Book cover).



We studied MAIF history through archival documents such as newspapers, reports, and organization charts, and reading a book written by Michel Chaumet, published in 1998 (cf. Figure 3) that helped us piece the events together starting from MAIF creation in 1934 to the early 2000s. The author of this book highlighted four periods: "the pioneers (1934-1956)" that we related in the previous section, "the rooting (1945-1980)", "the new challenges (1980-1998)", and finally "the dawn of the 21st century. » Based on this data set, we provide below a preview of MAIF History to help to understand the transformation of the organization.

1. Roots, past challenges, and significant changes

We mentioned previously the financial difficulties encountered during World War II. In this part, we pursue highlighting the challenges faced later by the company and how they shaped its history, and the way it developed into MAIF Group.

a. The rooting (1945-1980): rising tensions between the customer-representativeness and the technical expertise

In the post-war context, the company was established and had to focus on its development.

> "After 1950, started the great expansion of the 30-year post-war boom. In six years, from 1950 to 1956, the number of policy-holders members almost tripled (from 51,421 to 145,504), the number of vehicles insured increased six-fold (from 5,903 to 34,262), and the contributions collected were multiplied by more than seven." (Chaumet, 1998)

This proves to be a very favorable context. As a result, various projects sketched out during the war were brought to life. One of these is the creation, in 1947 of CAMIF, a purchasing group dedicated to the members to offer them home equipment at a fair price. Building on its success and previous Experience, MAIF contributed to creating other Mutual insurance companies (e.g., MAAF in 1950, MACIF, and MATMUT in 1960) that still operate nowadays and have become direct competitors. They share similar values and founding principles: defending an alternative model for consumption based on solidarity recently labeled as the "sharing economy." In this diversification phase, the company changed its initial acronym MAAIF, abandoning the second A, which corresponded to "Automobile," in favor of MAIF (i.e., the "Mutuelle d'Assurance des Instituteurs de France" —that translates into the *Mutual Insurance company of the first-grade school-teachers of France*). In 1951, tensions arose for the first time between the "customer representatives" and the "technical or administrative teams," notably over the employee benefits negotiations that the representatives find discordant with the mutual mindset. It leads to a strike.

> "In the 1950s, the growth of MAAIF forced Edmond Proust to work out a division of labor that would allow management to deal with all the problems caused by its expansion. It was at this time that thematic committees were established. In this respect, four committees are instituted to support the Chairman, Edmond Proust, and his closest collaborator, Jean Lauroua, the Managing Director. While the duo deal with day-to-day problems, the committees are in charge of tackling issues with a specific thematic. The staff committee is responsible for all the hiring and promotions [...] The litigation committee oversees claims settlements [...] The production committee supervises all the contract transactions. Finally, [...] the (the fourth one is the) finance committee [...]" (p 222/223 ibid)

Various innovative offers were developed during this period, such as an all-in-one contract covering multiple risks for multiple properties, or a clause of reduction-malus, also known as "no-claim bonus," way ahead of competitors.

In the year 1972, the change of the Chairman, a co-founder, a teacher, and a customer with no technical background, appears decisive for the organization's transformation. The newly appointed one puts forward his technical knowledge rather than a solid political commitment or a strong orientation on customers' needs. At that point, MAIF had 700,000 policy-holders members and 1,300 employees. The

organization is forced to adapt its structure. One of the critical challenges of this was the fast change of scale and how to adapt to a more significant customer base and develop a more extensive offer. After innovating and diversifying its offer, the firm focuses on work processes and employees' working conditions. The top management developed a strong interest in a large-scale deployment of I.T. tools. This directly impacts the working methods and the quality of the service provided to member-policyholders. Paperwork and the related operating mode were gradually replaced by the "emerging technologies of information technology," which tended to simplify the management and day-to-day operations. It also offered new possibilities, e.g., members were assigned a unique identification number, which replaces the number assigned to each new contract. This may seem anecdotal, but it greatly simplified the interactions both internally and externally. Chaumet adds:

> "Through this operation, linked to the computerization of MAIF set up, as early as 1958, the model of what is today [in 1998] the «must» of the «marketing» database: the filing system is now centered on the customer identification, rather than the contracts, like all insurers. After 1958, files include information about related members, i.e., families. This was a real revolution in the approach to membership." (p229 ibid)

To process the membership files, 21 people are identified from different company departments and brought together to form the first team of programmers. As early as 1969, massive computing and telecommunication investments resulted in fully computerized management work. This teleprocessing system made the front page of the regional newspaper "La Nouvelle République," which stated that it was *"an achievement at the forefront on a European scale."* It is a revolution in daily practices that facilitates large-scale exchanges of information between departments while considerably reducing processing times for operations and the risk of errors.

b. The new challenges (1980-1998)

One of the main changes in the 1980s is the move of the employees to a new facility located in the same town of its birth and where it has been operating for years and where other Mutual companies it has helped to develop are. The objective of these new buildings is to absorb an expected expansion in the years to come. Since the 1980's the address of MAIF's headquarters, where more than 3,000 people work now every day, whereas the total number of employees at the inauguration was 1,200.

In this same period, MAIF started creating subsidiaries, becoming a diversified group. First, a diversification of the target customer. The initial segmentation was focused on a geographical and a professional network-based group. The objective is about broadening the membership to include all the actors of the national education system. Then, a diversification of the offering – in addition to property and casualty insurance policies, a subsidiary was created to provide life insurance and to distribute finance products (Parnasse-MAIF). The diversification strategy explores the upstream and downstream of the value chain. Building on its close link to the Education System, a charity and a fund is created. The charity carries out prevention actions in schools and pedagogical events for a general audience to warn people about road accidents and domestic accident factors. The fund invests in initiatives to help

develop risk prevention systems. The Ministry of Education recognizes those complementary structures as being of public utility.

Finally, another diversification dealt with activities downstream of the value chain. In 1990, a new company, Serena-MAIF, dedicated to home assistance, has been created. They were targeting senior citizens and those who suffered from invalidating accidents.

According to the author of the book describing MAIF history, this diversification is once again based on the observation of the environment and the search for a balance between the exploitation of successful recipes and the exploration of new territories as part of a continuous search for improvement and innovation.

This period ended with the "Collective Project" definition that took multidisciplinary transversal teamwork -involving volunteer employees and the executive committee- 3 years (1990-1992). They co-created the main orientations for the company's development in the years to follow. Described as a cultural revolution, it is the development and strategic plans ancestor.

c. The dawn of the 21st century

Since the 2010s, the changes are driven by the development and the strategic plans. The diversification has continued, such as the creation in 2011, of a structure dedicated to insurance policies for legal entities (MAIF Associations & Collectivités). In 2013 the group created a corporate venture fund dedicated to the Social and Solidarity Economy. Another one named MAIF Avenir has been set two years later, in 2015, dedicated to financing innovation, digital technology, and collaborative economy. These funds contributed to the Open-Innovation strategy of the firm. In direct relation to this strategy, MAIF took over an accelerator located in Paris (NUMA), hosting start-ups and freelancers and offering a catalog of services for professionals (training, events, etc.) and coworking spaces. That same year, MAIF bought Altima, a subsidiary built to increase the time-to-market of new insurance products; several Mutual companies created it but were no longer interested in keeping it. In 2016, the MAIF Social Club was inaugurated. This concept store gathers MAIF advisers, customer representatives, office spaces, a cultural program, and reception areas in Paris city-center. In 2016, the "Shareentraide.com" platform was created, a collaborative platform for Mutual aid in the event of natural disasters. This last example is typical of the new services developed in the diversification strategy that we will detail below: new services related to the insurance contributing to the social and sharing economy SSE. All of those novelties occurred as part of the organization transformation.

MAIF prides itself on being very innovative. The company relates this innovativeness to the continuous search of meeting the customers' needs that is argued to be part of its DNA, quoting the founding period as the starting point and historical proof of such orientation.

2. Analysis of the innovation journey

To analyze the service innovation journey deployed by MAIF, we will use Lenfle (2008) grid to characterize services innovation and composed of six variables: the "target clientele;" the "support product" that relates to the equipment enabling the service delivery; the "contract," i.e., the legal dimension of the service that is crucial in the insurance business; the "front-office process," i.e., the interactions with the customers; the "back-office process," i.e., the support activities ensuring the service delivery; and last, the "economic model" that is the core expertise of a financial service company.

The following table (Table 2) aims to provide a synthetic view of MAIF innovativeness by displaying its service characteristics evolution.

Table 2 – The main changes in MAIF Service from the company's early days towards recent times.

Period (Name)	1934 – the 1980s (MAAIF)	The 1980s – 2008 (MAIF)	2008 -2020 (MAIF Group)
Concept	Insurance of cars	Insurance of persons (as of 1984) of personal possessions (Home insurance as of 1946) of motor vehicles --- Assistance (*as of 1966)* Educational services (through the creation of a charity in 1980)	Insurance --- Assistance Additional services related to the insurance activities (moving, car-related services, sports club administration help as of 2017) Additional services related to the Social and Solidarity Economy (sharing a boat and peer-to-peer network of help in case of emergency as of 2016) Third-party recommendation (promoting start-ups services)
Target clientele	Teachers in an elementary school located in the South-West of France.	The initial customer segment had enlarged to include teachers from high school and college. Some other professions from cultural and public institutions country-wide led to creating a subsidiary firm (Filia-MAIF in 1987) that enabled the company to provide insurance to people outside of the teachers' initial customer segment. However, the policyholders who had subscribed to the subsidiary services did not have the right to participate in democratic governance. While MAAIF dropped the A that stood for "*Auto*," i.e., "Car," in its initial name, it kept the "I" that stands for "*Instituteurs*," i.e., Teachers in English.	As of 2020, the subsidiary Filia-Maif is disappearing, and the policyholders are therefore becoming members of MAIF. Henceforth, they are granted the same rights as MAIF members. In other words, they obtain the ability to vote and take part in governance.
Economic model	A single price and mode of subscription. Funds in excess can be retroceded at the end of a year. On the contrary, policyholders can be asked to compensate for an "acute critical situation" due to a higher accident rate or a massive natural disaster.	The pricing depends on policyholders being members of MAIF or customers of Filia-MAIF. Their right to join MAIF depends on their job and professional sector. MAIF members are granted reduced prices and rights. Apart from those differences, the rest of the Mutual principle stands true. The prices depend on the cover bundles, on the beneficiaries' behaviors (in line with the augmentation-reduction clause), and on what's being insured (the value of what's guaranteed). The company now offers very different covers for various subjects of heterogeneous values.	The prices still depend on the cover bundles, the beneficiaries' behaviors, and what's being insured but are no longer different from some of a subsidiary's policyholders.
Support Product	A simple paper classification system implemented at a local level is at the core of the service.	To face an increasing number of customers and the quantity of data to process, the company was one of the first in Europe in 1969 (according to Chaumet, 2009) to implement remote processing of customers' information using computers. This illustrates the development of processes and an I.T. ancestor serving as a support product.	The I.T. is under reworking for increased performance. Tech teams continuously work on developing the digital service platform providing new tools that facilitate the daily operations. The digital transformation enabled the adoption of new tools that enhance teams' transversal collaboration and efficiency.
Contract	A single cover and terms of services for everyone at first,	In addition to the cover dedicated to car damages, several others were progressively built, such as compensating for personal injuries and windshields or tire covers. Many new covers have	The policyholders receive a call for dues and a recap of what they are insured for once a year. This is computationally edited. In 2017, the legal department started working on Legal Design

	a few more implemented iteratively. The policyholders receive once a year a call for dues.	been created, so many that the company started designing bundles of cover (the proposal of a "multi-risk" contract) in the sixties, and even at some point, an "all-in-one contract" which no longer exists but was unique at that time. Implementing a system of reduction-augmentation clause ("bonus-malus" in French) that is nowadays typical of insurance contracts is one example of firm innovativeness. The creation of this clause is an excellent example of reconciling the interest of the member-policyholders (- by allowing those who have no claims to spend less) and the interest of the company (that face a reduction in the number of claims to deal with, eliminating a large number of claims for minimal damages). The policyholders receive once a year a call for dues.	to Design better contracts. The paperwork had barely changed in decades.
Front-office process	A peer-to-peer distribution of new contracts, enacting organic growth. A roadbook to guide the customer through the process of getting in touch with the company and performing the various operations	New processes and new channels of interactions have been developed in support of the customer relationship. The customers can reach an employee or a customer representative in one of the country's local agencies with a phone call or writing a letter. As of 1987, they also access information and perform simple tasks through the Minitel (the French equivalent of Ceefax), using the reference "36 14 MAIF."	The first website was created in 1997, but it has since been widely evolved. Several apps and websites, and social media platforms are used daily by the policyholders and prospects to access information, get in touch with employees, or perform simple operations (such as downloading a document). The historical channels of interaction are maintained (phone, mail, person visit in agencies). The challenge is to build coherence between the various potential touchpoints and prevent information loss or customer efforts across the multiple channels. This is one of the focuses on customer experience improvement.
Back-office process	A dozen employees and local volunteer members (and founders) give time to ensure the service management, the delivery, and the further development of the service (including the writing of the annual roadbook guide). In other words, a small group of people ensures the proper functioning of the organization.	The company has several thousands of employees and established much of the process to ensure proper management of services. The support activities are mainly operated from the headquarters that is at the service of the local communities. The anchorage in territories across the country is central to the organization in place.	From 2008 to 2020, the company moved from a local decentralized model to a centralized one that relies on the operational teams' specialization. This changed the organization of service support.

II. The case: Design as part of the strategic transformation of the organization

In the first 86 years of MAIF, significant internal changes have been undertaken to respond to the growth of policyholders and contracts distributed and cope with changes in the environment at the societal, sector, or institutional levels. Based on the organization's history and an interview with the Head of Strategy, we identified three organization types and two transformations.

A. Three types and two transformations

Several variables can help sequence the organization's history. Building on the narrative of the Head of Strategy and our study, we narrowed it down to six: (1) the organization socio-dynamics, (2) the critical top management changes, (3) the infrastructures evolutions, and eventually (4) the growth of the number of employees in relation to (5) the number of customer representatives and (6) the growth of the customer base.

1. Changes in the organization's socio-dynamics impacting the employees' proximity to the customer community

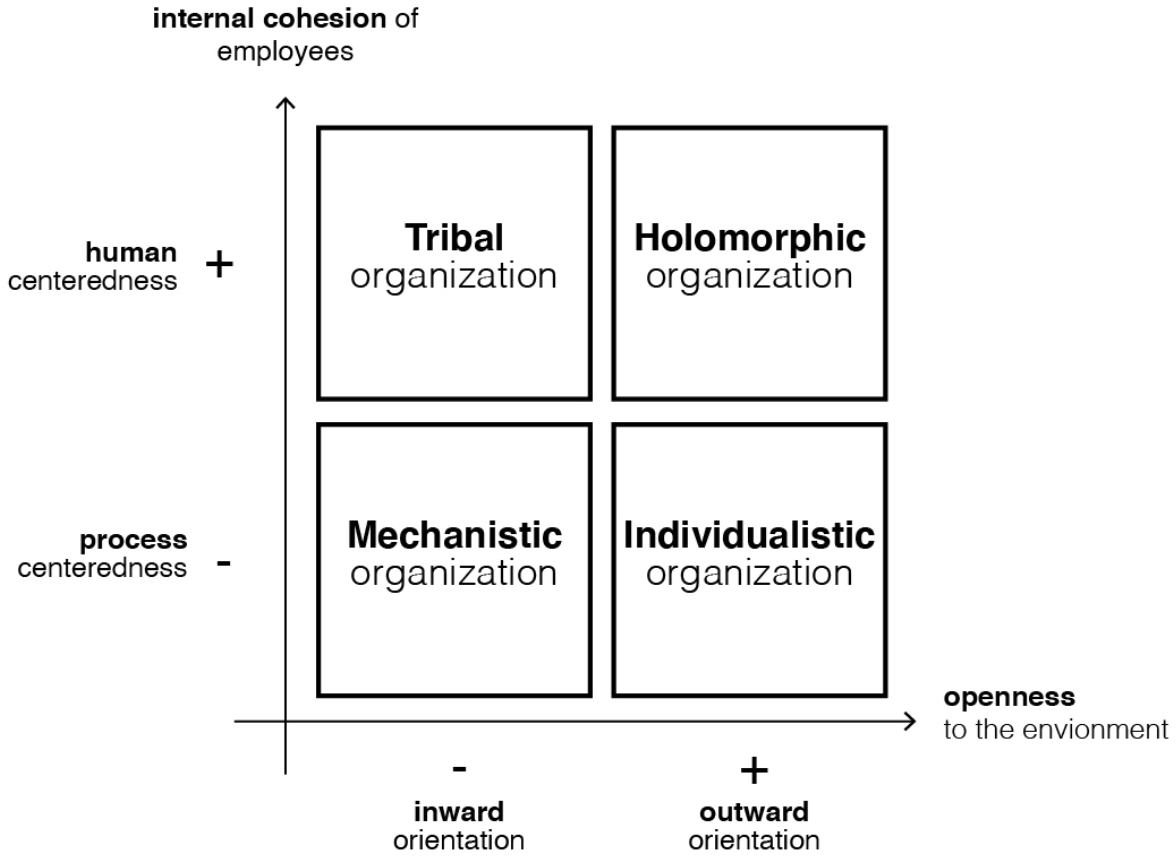
> "Initially, when we look at the socio-dynamics of organizations, MAIF corresponds to a tribal organizational structure, with very few processes, and a small-scale organization. [...] at the end of the 80s and the beginning of the 90s, we started to install support functions and [...] massively increased the headquarter staff, we mechanically moved the staff away from the customers, at least a little, so we used other methods of course, but we broke [...] in a growth crisis [...] this kind of permanent daily contact between those who make the products and those (the front-line employees) who make them alive." (Head of the Strategy, interview on the History of Design and the organization, 2017)

According to the Head of Strategy, we can identify three types of organization: a tribal organization, a small-scale organization with "very few processes" and excellent customer proximity, then a mechanistic organization with internal processes and increase of the employees' headcounts resulting in a distance with the customer community and a holomorphic organization reconnecting employees to the customer community.

This view draws on Fauvet's work (2004) on the socio-dynamics of organizations distinguishing four types: (1) the tribal organization, with a structure similar to a family or a tribe, a simple structure centered around a leading figure that drives an engaged community; (2) the mechanistic organization is a bureaucratic structure ruled by the strict observance of processes and an extreme sense of hierarchy and rights given by status ; (3) the individualistic organization, an organizational structure that values individual contributions, performances, and a competitive mindset; eventually (4) the holomorphic organization, a self-organized structure that emerges from the search for autonomy, learning, and cooperation, for instance through the building of communities of practices and internal networks.

The following figure (Figure 4) situates the four types into a matrix that considers the firm priority (centricity) and openness to its environment.

Figure 4 - the four sociodynamics types matrix by Fauvet (2004)



2. The first transformation

The tribal organization follows the creation of the company in 1934. The 156 founders were the first customers. The growth of the company and its functioning relied on very few "employees" based in Niort and a vast network of customers volunteers, the customer representatives, across the country ensuring the operations at a local level and contributing to the strategy and the decision-making at a regional level that reports to the national headquarters. The customer representatives locally ensured the promotion and distribution of insurance products to their peers, registered new policyholders, and managed insurance claims. They also took part in developing new products. The customer community's sustained growth was mirrored by the hiring of employees to ensure the Operations.

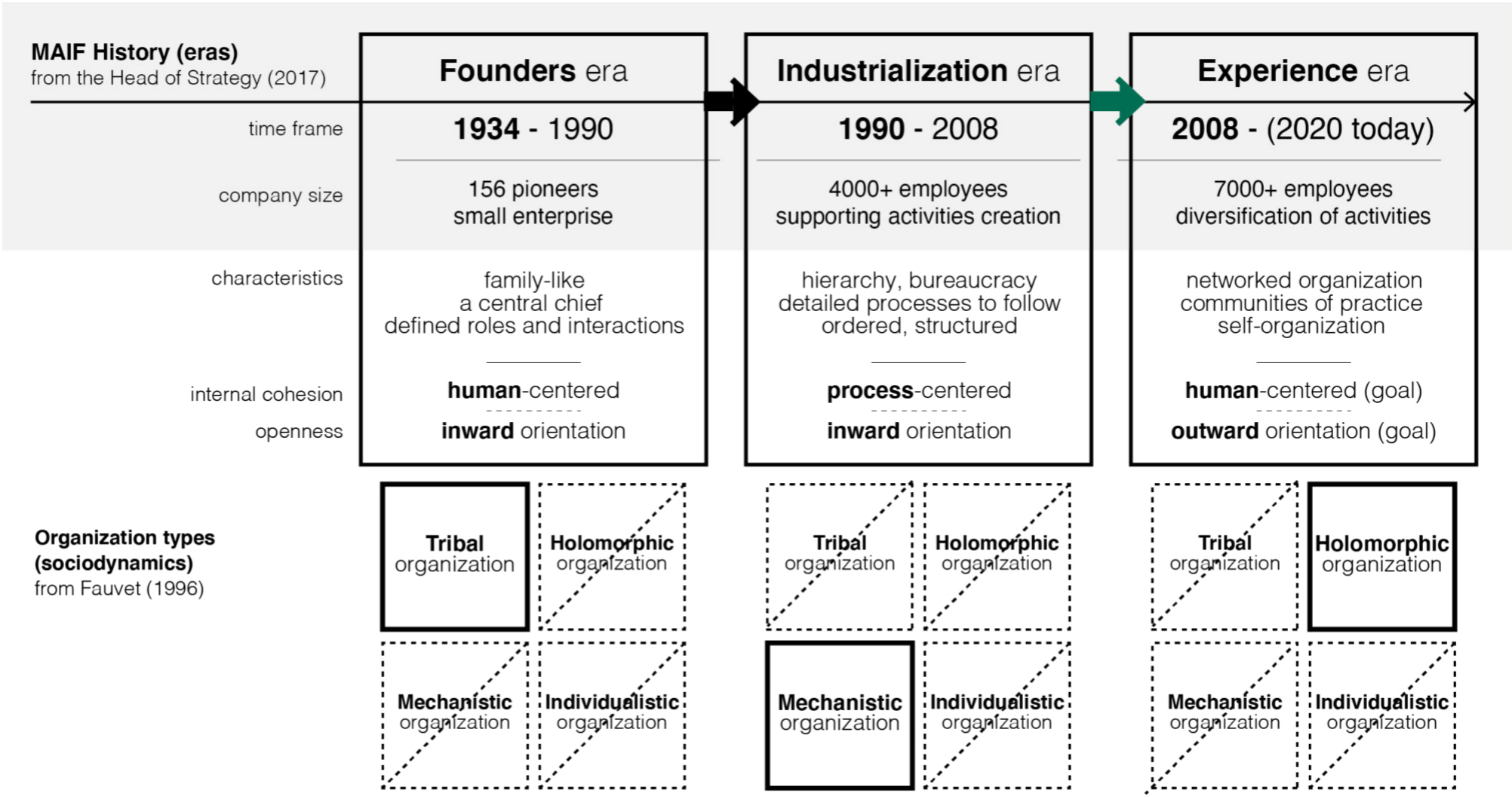
The firm progressively moved from a small enterprise to a medium-sized one. Initially built as a tribal structure, it turned into a mechanistic one when it moved from the founders' era into the industrialization era. It resulted in a hierarchical structure and the emergence of silos. A gap appeared between the primary activities (e.g., distributing insurance covers, dealing with claims) and the newly created support activities (e.g., developing the I.T. infrastructure or installing a department in charge of the general

administration of employees, involving human resources activities). At some point, these hired employees outnumbered the customer representatives, and several events, such as the first employee strike, divided the two communities that start growing apart.

Furthermore, four events contributed to the evolution. First, the company's reorganization split the employees into the Operations and Support activities, while the customer representatives network maintained its activities. Second, a change of Chairman in 1972: a technical expert succeeded as one of the founders and the first customer representative with no technical background. Third, the employees moved into new Headquarters composed of several buildings that spatially divided the organization into silos. Fourth, to tackle the customer base's growth, an I.T. infrastructure with associated processes has been installed. Those events in the late 1980s led to the organization's transformation from being a tribal organization to a mechanistic one. This first transformation ends what we label as the founders' era and opens the way to the industrialization era.

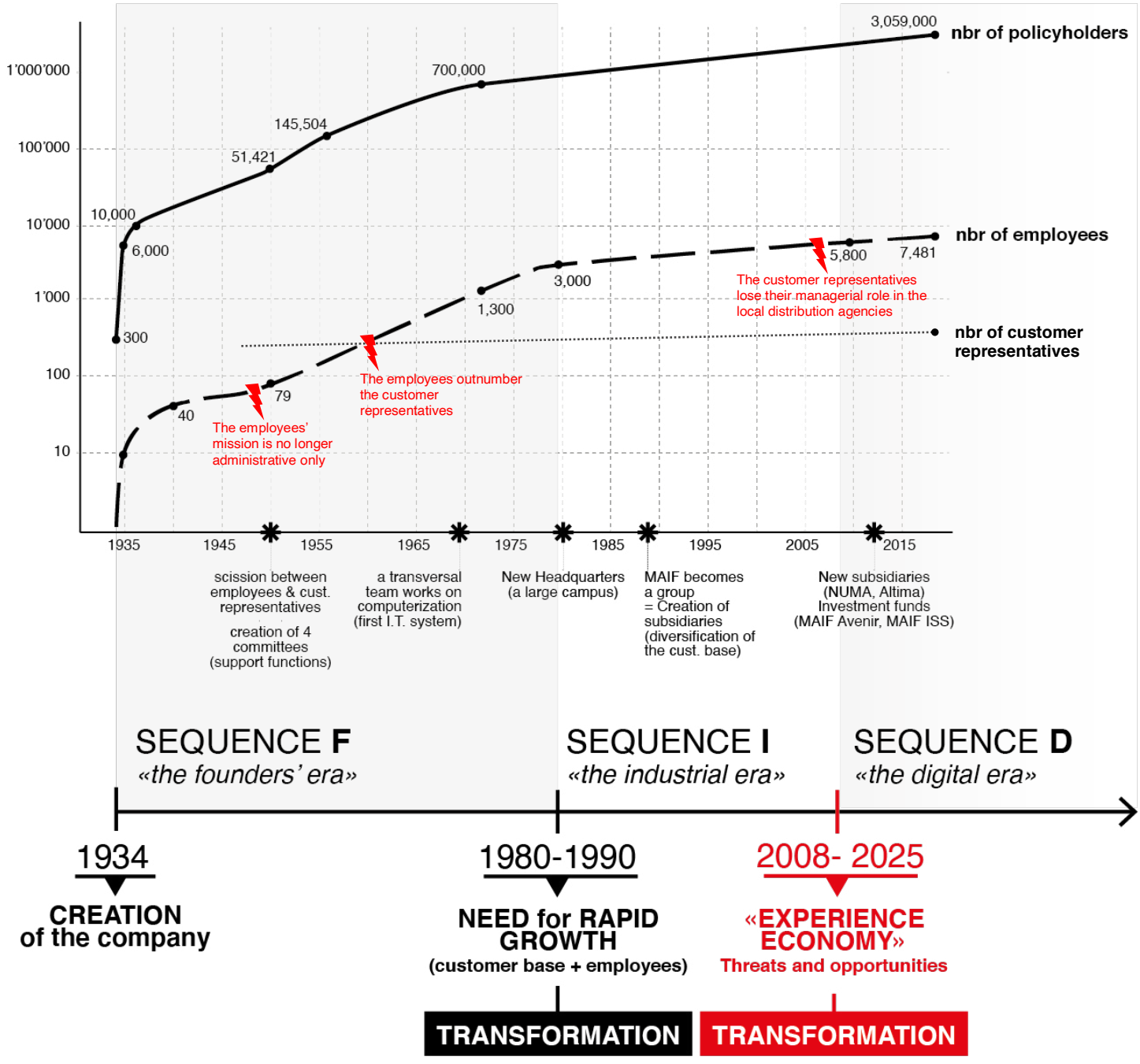
While human-centeredness seems to be at the core of its debut and may have remained in the DNA of the products and the company, our interviewee suggests that it has been progressively inhibited. This results in the emergence of a distance between the customers and the employees in charge of product and service development. The digital transformation and the adoption and integration of Design are seen as levers to reduce that distance and reinforce its human-centeredness. The second transformation from a mechanistic towards a holomorphic organization enables transversal cooperation across silos and teams' empowerment. In the early 2010s started the experience era and the holomorphic organization through the beginning of what we identify as the second transformation and investigate in this research as briefly summarized below. Figure 5 below links the three eras, the four types of organizations, and highlights the two transformations that the firm has gone through until today.

Figure 5 - MAIF History: three eras, two main transformations



The following figure (Figure 6) sums up in a timeline the main turning points and sequences in MAIF History.

Figure 6 - Evolution of the number of policyholders in comparison with the number of employees and related events



B. The focus of our study: the second transformation (2008-2020)

The firm's first transformation was driven by an internal need to deal with the customer base growth. It led to creating support activities, especially the I.T. infrastructure that enhanced the Customer Management Relationship. This had an impact on the organization, the culture, and the customer position in the organization.

This second transformation is driven by the need to cope with external threats and opportunities; it relates to the digital transformation and the innovation capabilities of the firm, which similarly has an impact on the organization, the culture, and the customer position in the organization.

1. The strategic plans

The second transformation aim is to sustain the company's capacity to deal with an ever-growing customer base while rebuilding and retrieving preexisting innovation capabilities, to ensure the upkeep and growth of the customer base, anchored in the founding culture and structure specificities that persisted in time.

It started in 2008 with a reorganization and the appointment of the new (and current) managing director. In the same year, a development plan is launched, covering 2008-2014. It is aimed at carrying an upgrade in areas critical to the core business (such as the Information System or the skills-base) while improving the efficiency and maintaining the very high customer satisfaction rate (around 95% on average, according to annual internal reviews):

> "The 2008-2014* development plan aims at making MAIF offers more modular and more prosperous, to maintain the high level of quality that characterizes the relations between the Mutual and its policyholders through the reorganization of its network, to ensure its accessibility and competitiveness in the long term by controlling costs. In 2013, the actions were carried out to reflect the progress of this plan.
>
> * The seven objectives of the development plan are: an enriched, more competitive, and more attractive offer; controlled costs and quality; a more efficient distribution and management; motivated and recognized players; a responsive information system; strengthened alliances; and the reinforcement of the central place of policyholders."
>
> (statements from the annual report of the year 2012)

The development plan is motivated by economic rationales. One of the main noticeable changes initiated in 2008, besides the Information System's renovation, is the reorganization of the operations (5,000 people), including the distribution channel (agencies) and the call centers that deal with the claims management. The organization switched from a distributed and local administration to a centralized one at the national level. Furthermore, each entity (agency or call center) became specialized in one type of operation.

Other changes have been initiated at the governance level. For years, the company led by a CEO and a co-director that supervised four divisions: two related to the main activity, the Insurance division (Operations and claim management) and the Development division (products and services development, commercial operations such as distribution and Marketing), and two related to support activities, the General Administration division covering Financial and Assets Management (including Human Resources), and the I.T. division. Three new divisions have been created: one dedicated to Human Resources in 2013, one to Life Insurance, and another dedicated to strategy ("Secretariat Général" in French) in 2015. This is of interest because the H.R. division helps with the cultural transformation. The Life Insurance division marks an evolution from the historical business, and last, the division in charge of the strategy and governance, communication, and public affairs.

In 2015, a strategic plan covering the ten following years had been issued: the "2025 vision." Those new departments will be crucial to meet the "2025 vision" expectations.

The ten years of the plan are divided into three phases. This study focuses on the first two which triggered the integration and early development of Design: i.e., the 2015-2018 phase named "let's live the daring of trust" (in French: *"Vivons l'audace de la confiance")* and the 2019 - 2022 phase called "committed to the future" (in French: *"Engagés pour demain"*).

2. A changing organization to face changing times

An analysis of the environment revealed significant changes in the insurance sector that threaten the firm's future. The "2025 vision" issued in 2015 intends to *"guide the company towards the reinvention of the insurance business,"* such as the search and implementation of new business models and products and the acquisition of new customer segments and communities, but also the evolution of internal practices and an update of the "why" of the company, in light of the experience economy. The CEO stated in a press release in June 2016 that the digital transformation and the Digital strategy are vital parts of this vision:

"The ongoing digital transformation and consumer empowerment will not wait for the players in the insurance market. Confronted with this big bang, MAIF has chosen to reinvent itself and to embark on its digital revolution around the user experience, the conquest of new territories, and the self-data."

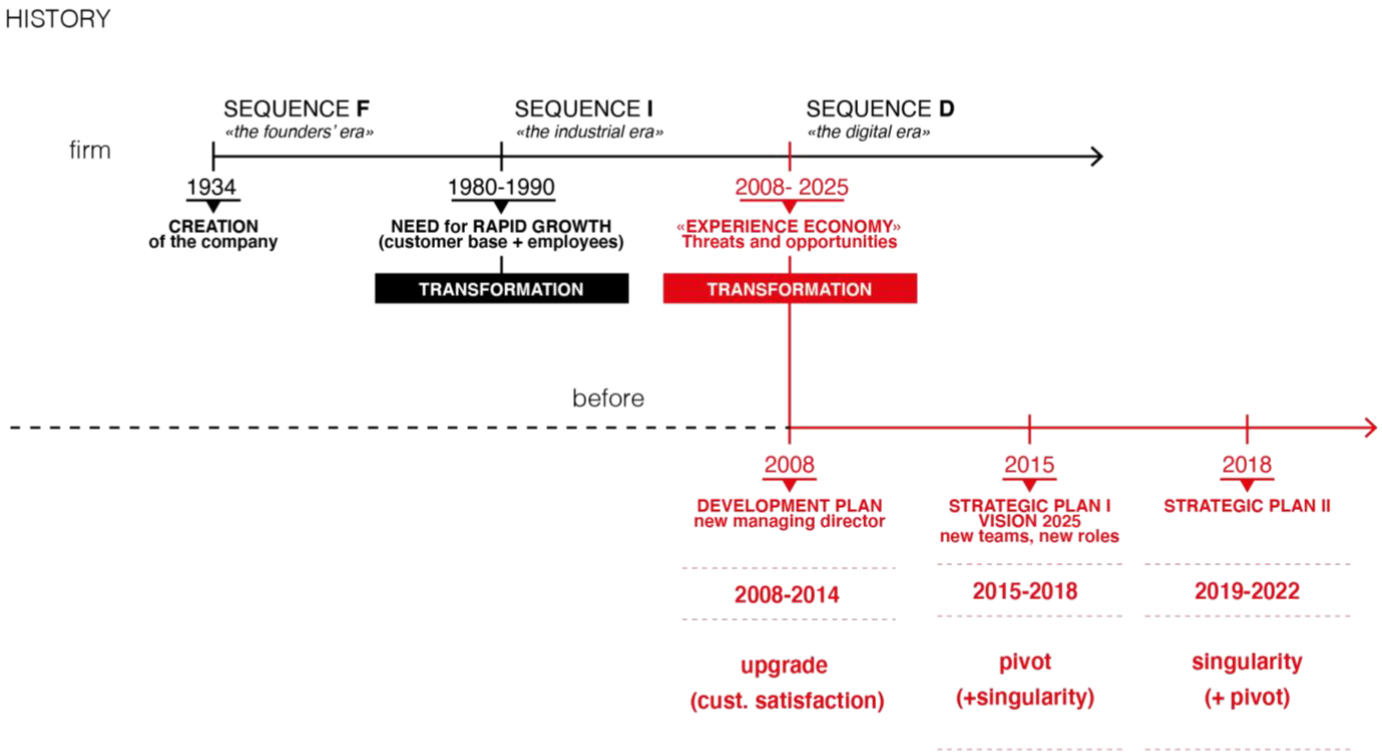
Pascal Demurger,
Directeur général du groupe MAIF
@pascaldemurger

" La transformation digitale en cours et la prise de pouvoir du consommateur n'attendront pas les acteurs du marché de l'assurance. Face à ce big bang, la MAIF a fait le choix de se réinventer et d'engager sa révolution digitale autour de l'expérience utilisateur, de la conquête de nouveaux territoires et du self data "

The year 2015 marks the beginning of the first phase of the strategic plan. Two hundred million euros are dedicated to its realization that focuses on two aspects: (a) set the company in motion to develop its capacity to adapt and face evolutions in the environment ("pivot") and, (b) pinpoint the company singularity in a competitive landscape that mainly

focuses on the battle of prices ("singularity"). The following figure (Figure 7) focuses on the second transformation.

Figure 7 - The two most recent transformation of MAIF



a. Changes in the environment and perceived threats

Below, we report the significant changes in the environment in the past decade, especially within the French insurance market (Trainar & Thourot, 2017).

(1) Technological changes

The first changes relate to the car itself, such as increasing the safety equipment or the emergence of self-driving; it threatens the car insurance that counts for more than 50% of the business revenue. Other technological changes are related to the insurance business, such as new the emergence of Data analytics tools. This is a new competency to develop to enable greater accuracy of pricing and terms and conditions with a better appreciation of risks. The digital interfaces and collection of the data generated by customers are central to the company business.

(2) Sociocultural changes

Consumers' behaviors represent one of the main impactful changes, especially the instantaneous access to services through online interfaces. These behaviors are triggered by newcomers from other

industries that propose new standards, such as the omnichannel Experience. Another example of consumer behavior change is the SSE and new modes of consumption of objects and equipment that challenge the established ownership model. For example, the rise of micro-mobility services, such as the rental of bikes or scooters from shared floats, correspond to new risks to be covered.

(3) Market changes

The main change is the arrival of newcomers in the insurance sector. Three types of actors are identified in three successive phases. First, the finance industry actors, mainly banks, started providing insurance covers to their customers to complement other financial services. Second, new ventures that emerged globally are expected to multiply, such as Lemonade in the United States and Luko in Europe. They generally provide a seamless whole online experience easy to access and deal with. Lemonade's promise is "instant everything" (i.e., less than ninety seconds to get insured and three minutes to get paid in case of a claim), on top of giving back excess money in case of high revenue and low spending. They are in direct competition with the Mutual insurance companies that rely on fair pricing, giving back spare cash, and customer relationship excellence. They declared in the year 2017, having conducted over 700 updates of the initial product launched (twice a day), acquired 14,315 customers in their first eight months, among which 78% are between the ages of 25-45. Only 9% are new customers, whereas the rest are customers switching from existing insurance providers and distributing over 1.2 million policies in three years.

And third, big global digital companies, experts in Big Data (e.g., Google, Apple, Facebook, Amazon, Microsoft) can become potential newcomers. They collect enough data from their primary activities about consumer behaviors to assess risks and build insurance covers. This offers them the opportunity to give the insurance business a try.

Those new players threaten the market shares of the historical players. Furthermore, these players put forward the disintermediation, which is a high risk for an insurance company whose business model is based on championing the customer relationship.

(4) Regulations changes

The insurance sector is highly regulated and is subject to frequent regulatory changes. New regulations are issued to protect the consumers from unreliable insurance providers (such as the Solvency II directive effective since January of 2016). It imposes higher transparency and access requirements (setting a required minimum capital to own to be in business). Harmonization of the insurance regulations within the European arena brings many changes as well.

(5) Economic changes.

The economy, such as growth rate, interest rate, and equity market, directly affects assets management, a cornerstone of the insurance business. Insurance companies rely on asset management

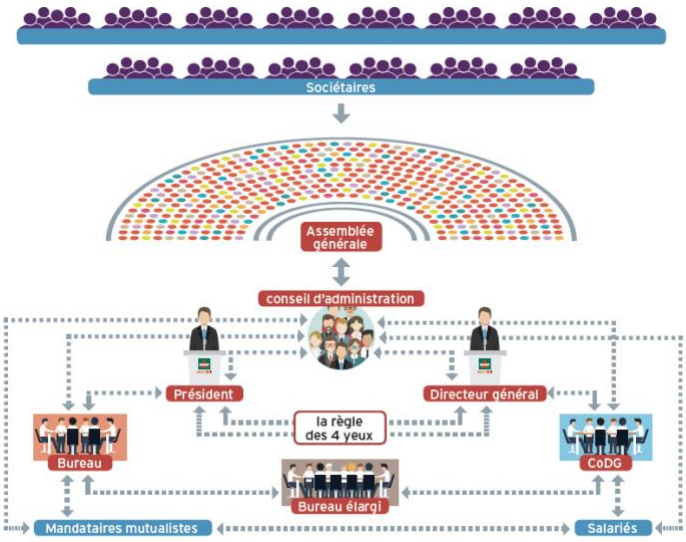
to grow their capital from the subscriptions. The return on those investments serves to compensate policyholders that suffer losses. Economic changes may call for changes in the management and have an impact on the strategy.

b. Changes to execute a competitive strategy based on singularity and differentiation.

Among the responses to those changes in the environment, MAIF executives acted upon reinforcing the positioning strategy, focusing on retaining existing subscribers, gaining new ones, and diversification of the current offer (both regarding insurance policies and additional services, either merchant or non-merchant) rather than by the price, which is mainly adopted by the closest competitors. Therefore, the company needs to innovate to identify sources of differentiation. To execute this strategy, many changes are undertaken. The management pursues the creation of "cohesion within the workforce" to encourage innovation. The company's digital transformation and a training program for managers to develop a «management based on trust» are among the new means implemented for exploration activities. A new division dedicated to B-to-B is created to address this new market. In this way, several changes occur in the organization.

The compliance to the Solvency II regulation (mentioned earlier) drives one of the first governance changes. The directive requires the respect of the "rule of four eyes," meaning the company has to nominate two influential leaders to be accountable before the Board. The CEO role is split into two distinct parts: A Managing Director and a Chairman who both report to the Board of directors and work with separate committees, respectively, the Head of departments within the executive committee, and a few nominated administrators (the administration board). The following figure (Figure 8) explains the way MAIF implemented this rule of four eyes.

Figure 8 - MAIF governance model (chart from the 2015 annual report)



The first phase of the strategic plan (2015 – 2018) focuses on developing a *"daring mindset"* and *"trust"* throughout the company. To do so, changes focused on: (1) what the company does, (2) the customer relationship and the channels of interaction, (3) the culture and the employees, and (4) the way the company is organized to achieve that. The Strategy division that includes the Digital and Innovation initiatives and in which we are specifically interested in this research contributed to each of the four focuses.

Among the novelties regarding what the company does, a new Home and Property Insurance has been launched and a "4+2" single contract covering a car and a motorcycle. New partnerships have been developed with start-ups and online services such as assistance in buying a new car or moving. Internal guidelines have been developed to enact commitments related to COP 21 and the firm's corporate and social responsibility. The company committed to giving one euro for each of the new contracts distributed to support a foundation against substandard housing.

A team has been created to work on customer relationships and new interaction channels. It carries experimentations aimed at improving the existing service delivery; the implementation and moderation of an online website dedicated to loyal customers involved closely in new product development; and last but not least, the opening of a concept store in Paris, the "MAIF Social Club."

The changes related to the focus on cultural change and employee development are substantial. They include mobility programs such as the "Happy Mobility" program, enabling employees to leave their current job for a few months and work for another department or even a start-up. Fifty people participated in this program and helped emerging start-ups to grow while learning new skills. Another internal mobility program benefited more than five hundred employees, among which half of the beneficiaries swapped jobs. The company offered learning expeditions and managerial training programs to almost three hundred people regarding cultural changes. The H.R. division worked for

months with a group of employees to build a new collective labor agreement to enhance the culture's changes and practices such as remote working and flexibility.

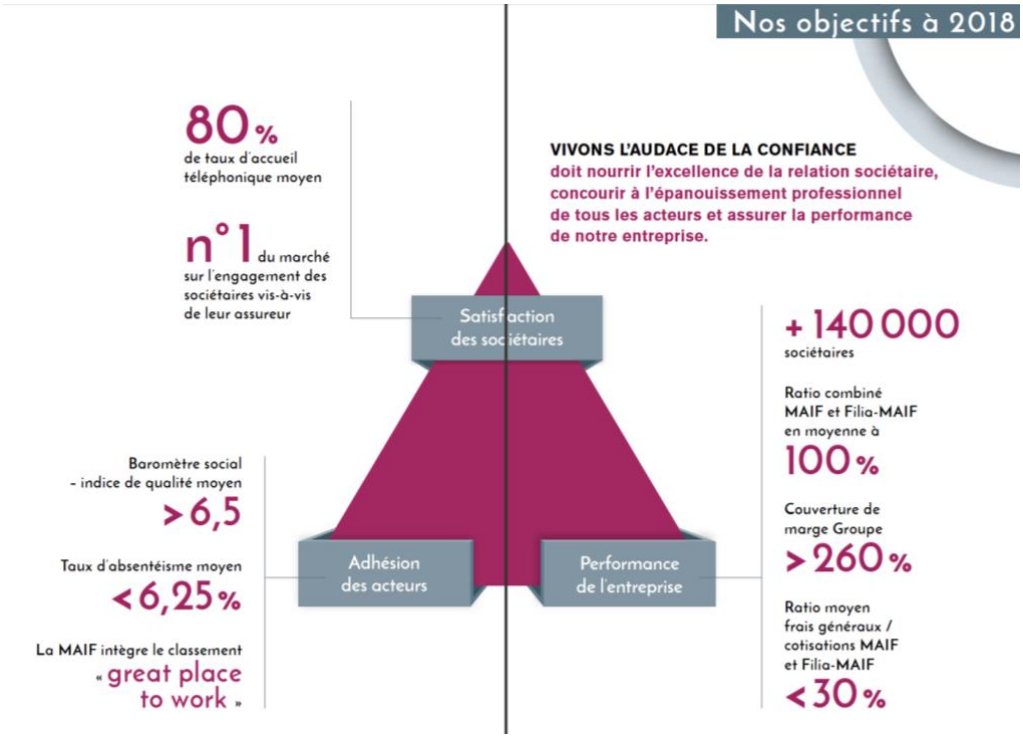
The company developed "organizational agility" through new types of meetings, new office spaces, and new methods to manage teams. Dedicated temporary teams are created to put this change in place. Platforms are designed to collect feedback and ideas from employees (three thousand people participated). New I.T. tools have been developed, and new methods of product and service development have been promoted. Seven "Project Management Program" (PMP) were created to allocate resources to projects to implement the changes.

The (2015 – 2018) plan led to a positive outcome according to the top management, as stated by the Managing Director in the 2018 strategic plan performance report:

> "First of all, I want to tell you how proud I am. Pride, of course, for the results we have achieved. I am aware of the efforts we have had to make to win over 40,000 new policyholders a year, despite increased competition, to increase our service providing rate by some fifteen points, or quite simply to remain the benchmark in terms of the customer relationship."

Three Key Performance Indicators are highlighted: the customer satisfaction (e.g., the general evolution of the customer satisfaction rate is measured as well as the answer rate to customers' requests per channel of interaction), the employees and customer representatives adhesion to the Strategy and its implementation (employees' satisfaction rate, external award ranking on the best workplace, and the absenteeism rate), and last the financial performance of the company (the growth of the customer base, the turnover evolution and the balance between general expenses and incomes from subscriptions). The following figure (Figure 9) is extracted from the internal document presenting the strategic plan in 2015.

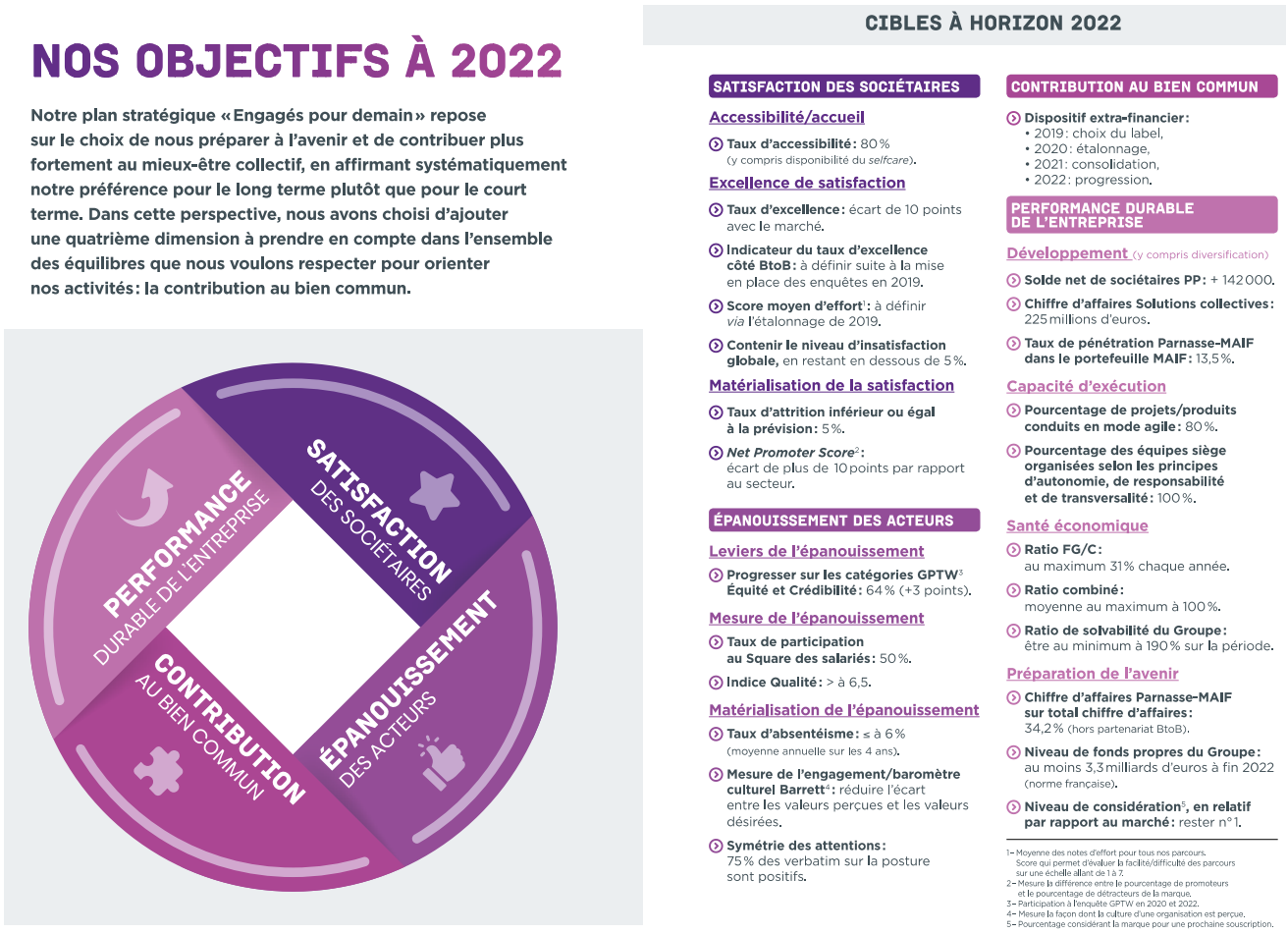
Figure 9 - KPI of the first strategic plan



However, while the company attained those goals, the competition is as important as ever, and the external threats that motivated the first strategic plan have materialized or intensified. In January 2019, the second phase of the strategic plan came into effect.

While the previous plan focused mainly on the firm's capacity to adapt and face evolutions ("pivot"), this plan (2019-2022) targets primarily to differentiate from a price-based competition ("singularity"). Therefore, the company was among the first in the insurance sector to state its social purpose and contribution to social good beyond the usual financial and customer-oriented performance. This change of corporate status towards a "purpose-driven one" (Levillain et al., 2019) relies on a new French law named PACTE. MAIF is among the first firms in France and the first insurance company to change its statuses following this law. This adds a new KPI to the previous ones: the impact on society. The following figure (Figure 10) is extracted from the document presenting the second strategic plan.

Figure 10 - KPI of the second strategic plan



3. Focus on the Innovation and the Digital strategies

Innovation and Digital strategies are two critical ways to develop the firm's capacity to adapt and face evolutions ("pivot") and to differentiate from a price-based competition ("singularity") as

targeted by the strategic plan (2015-2022). Those two strategies played a central role in the integration of Design within the firm.

a. The Innovation Strategy

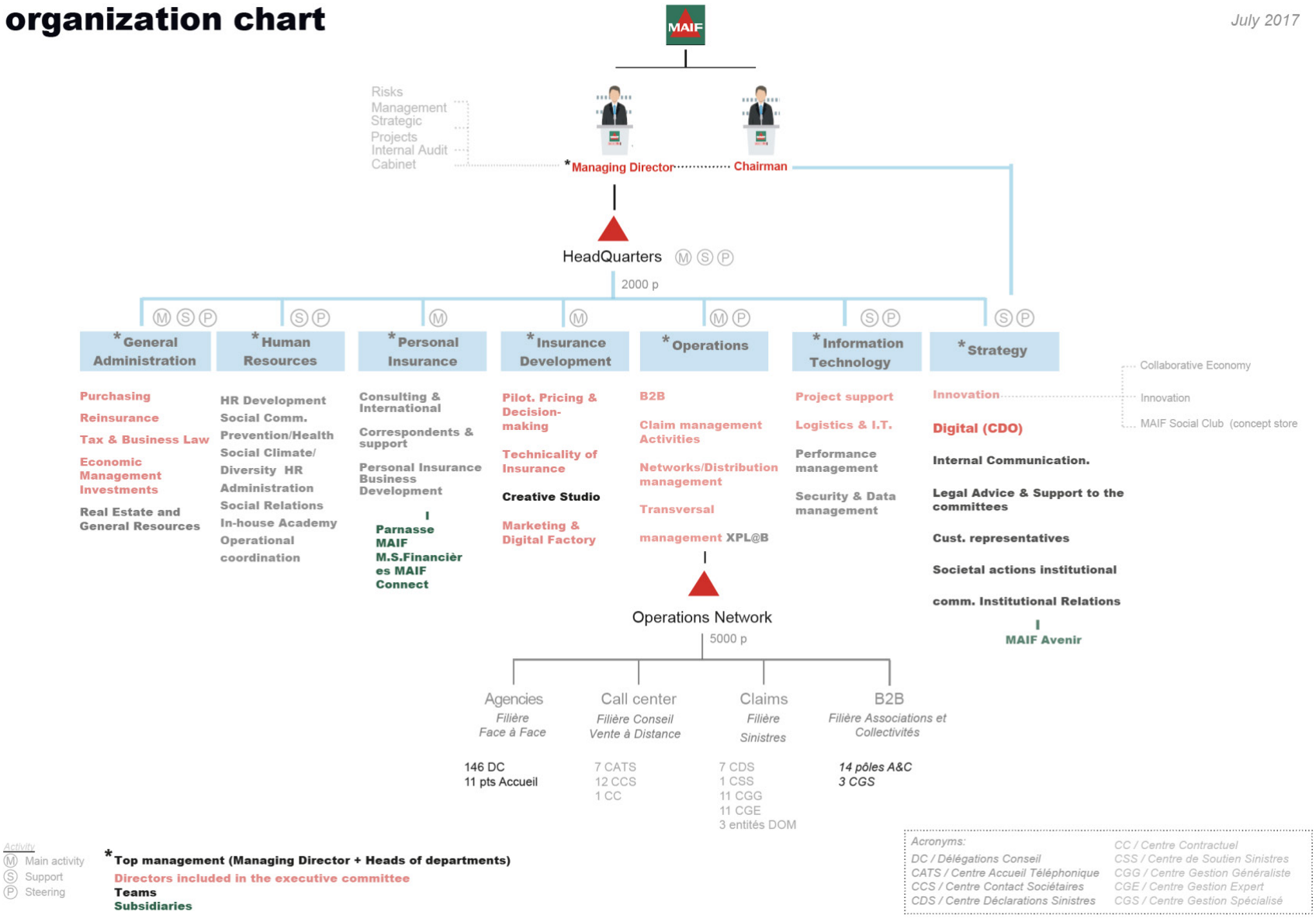
To enhance the firm capacity to innovate, a Head of Innovation is designated. A dedicated team is created in 2015 to support the Innovation Strategy's execution that targets the offer's diversification and attracts new customers. Innovation capacities must be built to develop new products and services. To do so, three objectives are set: first acculturate, in other words, *"open people's mind"* by benchmarking, evidencing threats, and "*make people want to do things differently*"; then accompany them, providing new sets of methods and guiding them in doing things differently; and eventually moving from exploration to experimentation and toward the market launch of new products and services.

The Innovation team is tasked with searching for new territories and, therefore, new communities, sharing their values. This conquest is envisioned as a two-step process. It provides a non-insurance service to a community of interest or a professional community such as sports clubs, leisure sailing, and freelance workers. Then, the distribution of insurance products is eased thanks to the brand recognition growth in the targeted community. The objective is to explore new categories of needs beyond the classic insurance categories (home, vehicles, financial products, physical injury, or life protection). To achieve this conquest, a concept store (MAIF Social Club) has been launched in Paris: it is not a commercial agency but a cultural place that welcomes audience such as families, freelancers, or teachers with students, using the place like a library, a coworking space or participates in events such as craft workshops. The Innovation team and the Experience team regularly work with the team in charge of welcoming people in the *"store"* on the experience improvement (e.g., the signage, the voice, and tone of employees) and new ways of selling insurance products (e.g., through physical objects such as a bike helmet with the bike insurance cover). According to what works best in the concept store, changes are made in the commercial agencies.

b. The Digital Strategy and transformation

The digital transformation has been initiated in the summer of 2014 by the Strategy division, in which a Digital team is created and a CDO – Chief Digital Officer- is recruited. The CDO reports to the Head of Strategy and the Managing Director. He is appointed in the executive management team (30 managers), including the top management, i.e., the executive directors (Head of departments) and the managing director. The following figure (Figure 11) shows the CDO position, the top management committee composition, and the executive committee.

Figure 11 - Organization chart of 2017 showing the CDO position, members of the top management committee, also part of the executive committee



In the press release of the 9th of June of 2016, the Managing Director presented the Digital Strategy as centered on "a digital platform conveying trust" that would distribute insurance-related and non-related products and diversified services. This opens the way for a new business model and new revenue streams.

Initially, the roadmap for the Digital Strategy that drives the digital transformation is focused on: (1) the data, (2) the interfaces, (3) and social media and communities labeled as the "cultural transformation for digitally empowered communities." Then, the digital transformation included (1) "communities digitally empowered," (2) data and ethics, (3) a platform that enables the diversification aside the core business, (4) and user experience.

We present below how the firm addressed each of these components.

(1) The aim is to empower both the employees and the customers.

For employees, it means bringing (for novices) or enhancing (for regular users of digital products and services) the daily practices, i.e., developing a digital workplace and the related culture and skillset. This requires new tools (customer database for front-line employees, several features such as chat, video meetings, document sharing, etc.). A specific team, including the CDO and a project leader, addressed the culture and skills as part of digital transformation. Seven digital correspondents (one for each division) and a few hundred digital ambassadors are appointed to support this team. The digital correspondents report to the Head of the division to which they belong. The digital ambassadors are volunteers who report to the digital correspondents and act at a local level. The digital correspondents' mission is to accompany the adoption of new digital tools and practices in their departments and animate digital ambassadors within their departments. The digital ambassadors ensure the appropriation of new tools and devices at the local level. They help colleagues with digital matters, answer simple requests, and distribute essential information. Each of the seven digital correspondents leads a digital transformation project such as the "digital academy," for instance. This in-house academy relies on a small team of trainers and a digital platform that provides in-person and online training. Nearly six thousand people attend the "digital certification program" offered by the "digital academy." MAIF won the national best online course award in 2016 attributed to My Mooc -a national learning platform-, Google and the JDN (a French media dedicated to the Internet). Another project is the implementation of an internal social network. A small experiment that gathered a few volunteers became a primary internal communication channel bringing together employees from the headquarters and all the other distributed locations. The top management, as well as any employee without any restrictions, uses it. It includes communities of interest such as H.R. or feedback from customers. Another project is developing the "digiteam" dedicated to social media as a new interaction channel with customers.

The customers are concerned by the digital transformation: they express their satisfaction, difficulties, or dissatisfaction, ask questions or ask for help through digital interactions. Aside from new exchange channels, the digital transformation also enhances existing interfaces, mainly the website and

the App. While they previously served to display information, they are redesigned to empower the customers, enabling "self-care" features (i.e., the customer's ability to perform simple operations online, e.g., downloading documents, getting a quote, making a claim, etc.). Performing those tasks via the App or a logged-in space on the website is of great value for the customers looking for autonomy and flexibility and the company. It reduces the load on the operations and free resources to deal with complex inquiries. The digital ecosystem counted in 2017 more than twenty interfaces, including the main commercial website, the corporate website, and the App. All of those needed to be coherent, modernized, and simplified. It also encompasses an e-commerce platform promoting socially responsible products in line with the firm DNA but not related to the insurance business. It has developed as part of the concept store launch.

(2) The digital transformation is as well about data exploitation for the core business. This, with the users' privacy considerations, requires new technical infrastructures to support the "data lake" (i.e., the storage of the data generated by users and collected through the interactions), new jobs, and expertise (data scientists and legal). Two teams are dedicated to data. The first named "data factory" retrieves data and aggregates it into dashboards provided, for instance, to monitor the service performance. The second, named "datalab," is in charge of conducting experiments centered on data and A.I. in projects from all the departments. It is located in a specific space. For instance, it developed an A.I.-enabled toolbox to automatically process incoming emails from customers, summarizing the key content and sorting them into categories. This eases the agents' work in charge of processing and answering customer demands and leads to higher performances. The use of A.I. and data raises ethical issues regarding customers' privacy and discriminating biases in the digital transformation scope.

(3) To reach the diversification objective, the digital transformation includes a technological platform to efficiently distribute, execute, or aggregate new services. Those new services can be from a third party, bought externally, or developed in-house. This platform would be the "support product" in the service innovation framework suggested by Lenfle (2008). Such a digital platform inspired by emblematic innovative companies such as Airbnb or Uber enables new business models. As no existing platform on the market fitted the technological requirements, the decision is to craft one from scratch. A team is built in-house, mixing people from the I.T. division and external developers. In a two-year timeframe, they conducted over twenty-six experiments and built the platform's technological foundations. They developed a new capability and shared the newly created knowledge on an Open-Source platform to which competitors can access. This Open-Source knowledge sharing is part of the cultural transformation and demonstrates the new technical innovation capability that tags MAIF as a new player in this field.

(4) Lastly, experiences issues arose from the proliferation of digital interfaces for both employees and customers. The channels diversification resulted in touchpoints multiplication and blurred the lines between distribution, operations, and customer services, impacting the service organization (e.g., the ROPO effect, i.e., "Research Online, Purchase Offline"). The company had to adapt accordingly, moving from a multichannel experience —the customer can do anything on any channel, but the operations in each channel are not synchronized— to an omnichannel experience — customer can switch from one channel to another, effortlessly, and with no waste of time nor information. User experience integration is part of this Digital Strategy imperative for more personalization and services.

The company starts with two projects: the improvement and an update of the mobile application and assessing the current customer experience. An external innovation consultancy mobilizing designers has worked on those projects for one year. They issued a report on the customer experience and, in symmetry, the employee experience that highlighted pain points and related recommendations. It laid out as a "customer journey" and raised awareness on the work to do. It led to two decisions were to improve the customer experience. First, it led to the development of a Digital Factory, a team dedicated to designing digital products for customers and building the digital channel reporting to the Head of Marketing within the Operations division. Secondly, the CDO obtained March 2017 consent from the top management to launch a mission dedicated to the promotion of Experience in the company. This mission is entitled "the Experience Company" and mobilizes the Digital team.

After three years (2017-2020), the platform development and data expertise moved under the I.T. division's scope. The two other topics (communities digitally empowered and user experience) are still part of the Digital team.

To sum up, the following three quotes from the CDO outline the Digital Strategy's foundations and the role of Design in it. He says the aim is to *"build a powerful digital channel in an omnichannel world,"* which means updating the customer experience to meet new standards inspired by the digital-native companies. He insists on the fact that Design help with the look and feel of digital products but is more than that*: "Design defines the means, not the ends*." One of the baselines of the Digital Strategy is *"designing and building commons since 1934"*. This is used in the Open-Source Platform communication by developers. It stands true for the Design work in line with the company (human-centered, built on communities, and solidarity).

III. Synthesis: the field of this research

The organization structure, its legacy, and strategic orientations for the future outlined in this chapter shaped this research's empirical field.

A. The context

The company studied is a particularly interesting research field of Design integration for three main reasons. First, it belongs to the insurance sector, and there is a limited number of research on Design in the tertiary sector and, more specifically, Design integration in service companies from the financial sector, unlike studies on product innovation in the industrial sector. Second, this company engaged in the construction of in-house Design capabilities. In a five-year timeframe, fifty designers were hired to join four newly created dedicated teams. Third, Design is integrated at a strategic level through the Digital Strategy rather than at the Marketing, R&D, or Operations division, which seems unusual. On top of that, the company's mutualist nature and its particular relations with its customers/members results in a human-centered characteristic which makes it a compelling case to study Design.

MAIF is driving a profound transformation of its organization in response to an intensive and unstable competitive context. This has an impact on its activities, its culture, its structure, and its offers. The successive strategic plans result in creating new entities, which have integrated designers for the first time in the company's life. These new actors implement the Design approach at various levels in the organization.

B. Evolution of the research field throughout the study

The empirical problem statement of this research evolved in the three years as the field transformed. It was commissioned by the Chief Digital Officer, with the support of the Head of Strategy. The initial problem statement was: "how to transform MAIF into an Experience company ?" In other words, he referred to the need for the organization to adapt to enter the Experience economy. This focuses on exploring ways to build an organization that can compete with newcomers in its environment or conquers new markets. In his view, the necessary increase of firm competitiveness can rely on an improved customer experience for which Design is a central capability. This study focuses on the integration and development of Design through the construction of in-house Design capabilities.

The initial field of study has been defined as the Digital team focused on launching the "Experience Company mission," as part of the digital transformation Strategy. I joined the Experience

Company mission in its inception as a designer. Approximately one year later, following a reorganization, the “Experience company mission” became a team “The Experience team” in the Digital one that enlarged and became a department that regroups all of the Design teams previously disseminated in several departments. I moved to the new Design team, the “Experience team,” which became the new field of study. For the last year of this research, I focused on the Digital department to collect data on the other Design teams and several rising transversal initiatives. Therefore, the study focuses on the Digital department. It is sponsored by the Chief Digital Officer, who developed the Design Strategy and the corresponding Design organization.

Our field of research is multidimensional. It includes the places where Design happens, Design activities and processes, Design practitioners, Design management, and Design thinking.

Chapter Two

The phenomenon we seek to explore, the integration and development of Design in the context of organizational transformation, can be informed by different research fields. First, Design and Design management, then Innovation Management and Strategic Management studies. This chapter presents the research framing in three parts. First, we expose what lies behind the word Design; second, we explore the literature on strategic change and organizational capabilities anchored in the Resource-Based View. We dig into Dynamic Capabilities theory and emphasize the need to better understand capability building and renewal. This literature review gives an outlook on the concepts this investigation is built on while showing the limitations of the existing knowledge that lead to our research focus, the third part.

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I. Design and Design Management

A. Behind the word Design

B. A contextual and historical approach of Design

C. Design in organizations

II. Strategic change and organizational capabilities for innovation

A. Strategic change and Organizational capabilities

B. Ordinary vs. Dynamic Capabilities

C. Building Dynamic Capabilities

III. Research framing

A. Research foundations

B. Research focus

I. Design and Design Management

The word “Design” is extensively used in this dissertation. The following part aims to acknowledge the plural meanings and acceptations that coexist in the literature and expose how we employ them. We seek to understand what the concept of Design covers, first through a contextual and historical approach, then through the lens of the Design and Management literature positioning the concept in organizations' context.

A. Behind the word “Design”

Design may be used to designate the purpose, the sector, the activities, the profession, the discipline, the approach (methodology, tools), the practitioners, the look of a product, or else. Besides, as Rosensweig (2011) pointed out, the word Design can be used both as a noun and as a verb. We could add that Design is popularly used as an adjective to describe a product aspect that is subjectively considered as unconventional, or aesthetical, or trendy, but we disregard this fuzzy use. Design as the verb is used as a synonym of building, creating, and producing something, but Design as a noun can refer to many things. In this quote, *"Design is to Design a Design to produce a Design,"* Heskett (2005) underlines the ambivalence of the word about the delimitation of what does or does not fall within the field of Design. While no definition is commonly accepted and recognized, many researchers circumvent this unresolved issue by specifying the meaning of the word Design used in their work. In this part, we define how the word is used in this dissertation in light of the various acceptations that we found.

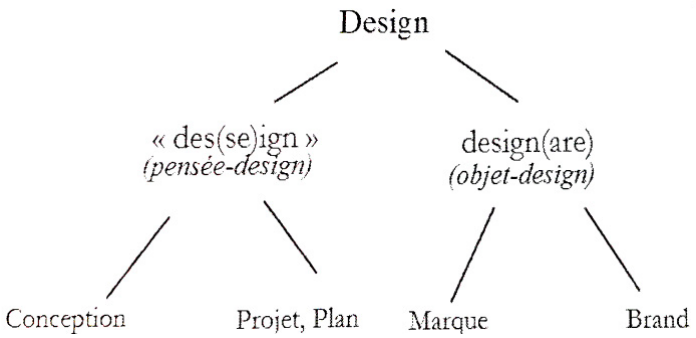
1. Navigating the multiple meanings of “Design”

This section presents the principal meanings and definitions associated with Design we encountered in the literature.

a. Design etymology

The word etymology provides an overview of the plurality of the word meanings.
Design is attributed a double etymology, by associating it with the French root *“desseing,”* which conveys the intellectual dimension of intention, project, conception, and gave the word “dessin” (i.e., “drawing”); and the Latin root “designare” at the origin of the word “designate” that relates to an object, a signifier or a brand. The following diagram (Figure 12) displays this duality (extracted from Orel, 2016):

Figure 12 - Design etymology (from Orel, 2016)



Borja de Mozota (2001) defines Design as "drawing with a purpose." Once again, this definition covers the duality of the Design practice that brings together the ability to make a project, envision something new, and make it come to life through realization and diffusion.

Referring to the Italian word "disegno," some researchers (Orel, 2016) consider the thinkers (artists, engineers, or scientists) of the Italian Renaissance as designers or precursors of Design. However, the Industrial Revolution is considered to be the starting point of Design history.

b. Design as an output

Design is often defined by the result it produced as an output.

→ **Design as a noun to refer to the value created.**

When designing a product, the Design team generates a "process value" (a problem-solving approach seeking the optimization of the collaboration between colleagues) and a "human value" (skills development and cultural transformation). The firm Thonet and its iconic piece of furniture many cafés still use is an emblematic case for Design. It illustrates the various types of value that Design creates. Building on the opportunities raised by the industrial revolution, Thonet, the founder of the firm, designed a chair that he patented. He adopted a problem-solving approach to Design a chair from end-to-end, i.e., from sourcing materials to the use by customers, taking into account the manufacturing and the delivery process that was rationalized. His Design was very innovative at the time and is still widely found in restaurants in Europe. He designed one of the first mass-produced chairs. The chair was built in pieces. The final assembly was due only after delivery, which eased the transportation reducing the bulk in storage space and delivery trucks, which in the end reduced the costs. Thonet is known for bentwood furniture, which was a very innovative manufacturing process and gave the chair a very modern look (see Figure 13).

Figure 13 - Thonet Patent extract and chair

Therefore, Design is about the value it creates for both the customer and the organization, as Meyer (2011) suggests:

> "Design is fundamentally about value creation. In the business world, the Design of products, services, processes, and systems can unlock new markets, drive new revenue, and keep an organization running efficiently."

→ **Design as an everyday life presence, a way to "shape the society."**

The last perspective focuses on meaning, both in Design literature (Papanek, 1985; Findeli, 2001) and in innovation studies (Verganti, 2006; 2009; 2011), and insists on Design omnipresence in our everyday lives and society. Brown and Katz (2011) state that Design is everywhere:

> "There is no area of contemporary life where Design -the plan, project, or working hypothesis which constitutes the "intention" in intentional operations- is not a significant factor in shaping human experience."

c. Design as a verb

Many authors quote Simon's definition of Design of *"Everyone who designs devises a course of action aimed at changing existing situations into preferred one"* (1988). In this view, Design is seen as a function dedicated to making things better, addressing pressing needs, and solving human challenges. Papanek (1985) and Michlewski (2008) worked on designers' characteristics and investigated their attitudes and responsibilities. Papanek defines Design as a "complex function," comparing it to Electricity to demonstrate the difficulty of providing a clear description of what it is:

> "Electricity, after all, is never defined but is described as a function; its value is expressed in terms of relations – the relation between voltage and amperage, for instance. Still, people identify themselves as electrical engineers, or electricians, seemingly without any loss of identity. Industrial and Environmental Design, too, can be expressed in terms of relations: the relation between human ability and human need;" (Papanek, 1985)

Michewlski (2008) associates Design with a *"strong commitment"* of designers *"to make a fundamental difference,"* to do better and improve the existing situation through change driven by unique creative propositions. In this perspective, the word "designer" does not refer to the professionals

but includes any individual whose driver is in line with Simon's definition (Berger, 2010; Brown and Katz, 2011). That fits a set of characteristics, including the Design attitudes (‘*Consolidating multidimensional meanings,' 'Creating, bringing to life,' 'Embracing discontinuity and open-endedness,' 'Embracing personal and commercial empathy' and 'Engaging polysensorial aesthetics’*; Michlewski, 2008). Simon, as Boland and Collopy (2004), advocates for managers in organizations to adopt Design attitudes.

d. Design Thinking: a collective creative problem-solving approach with dedicated tools, processes, and mindset.

When moving beyond the product and economic value, Design Thinking is often described as a collective creative problem-solving approach inspired by Design practice that goes all the way from the toolbox to the mindset. Herbert Simon (1988) associates Design with “a way of thinking.” Meyer (2011) defines Design as “*a set of activities: methods, approaches, and techniques that provide its practitioners with a way of working together in a highly productive way.”*

On the one hand, some authors recommend Design Thinking as a problem-solving approach (process, tools, mindset) specifically to address “wicked problems” (Buchanan, 1992; Liedtka, 2014). Chanal and Merminod (2019) show limitations of this view largely promoted within the Innovation Management literature. They state it may be of use but incomplete and suggest specific characteristics must be developed or strengthened to truly enhance creative teams' ability to deal with this particular problem.

On the other hand, Design thinking core is defined as centered on creativity instead of the problem. Lockwood (2009) defines it as *“a creative process that uses mechanisms to identify problems and generate innovative solutions.”* Some researchers emphasize the creative dimension (e.g., Kelley and Kelley (2013) “creative confidence” or Nussbaum (2013) “creative intelligence.”

Last, Simon (1996) and Luchs (2015) consider Design thinking as a code name to designate the formalization over time of a collection of Design firms’ best methods and practices promoted in various industries.

Johanson and Woodila (2013) refer to Design as “a Practice-Based Activity and Way of Making Sense of Things,” citing Cross (2006) and Lawson’s (2006) ethnographic work on the “designing activities.” Both authors offered representations of the Design process.

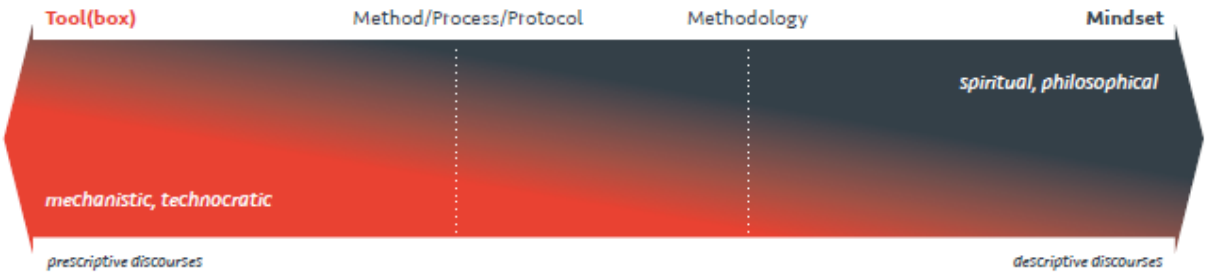
The most cited representations of the Design method include the IDEO Design thinking process. The double-diamond diagram comprises two parts, the discovery or definition on one side and the delivery or execution (Design Council, 2005; Merholz & Skinner, 2016). While used to understand the thought process, some find the sequential representations misleading as Design is a non-linear process (Brown, 2011; Carlgren, 2013; Carlgren et al., 2016b). Several variations have been developed but

generally concur on a three-step structure, including (i) needsfinding or data collection, (ii) ideation, (iii) test, and implementation (Seidel & Fixson, 2013; Liedtka, 2015).

Furthermore, beyond the activities, the process is dependent on the way it is conducted. Cross (2001) writes about *"designerly ways of knowing, thinking, and acting*." He argues that *"Design practice does indeed have its own strong and appropriate intellectual culture."* In other words, the process should be enacted with an ad hoc team's culture and attitudes. Fayard et al. (2017) delineate service designers' ethos, i.e., *"the values enacted through material practices"* as essential in addition to the process. Kleinsmann et al. (2017), rather than a process and tools, depicts Design thinking into four images (use) and 48 activities (e.g., one of the activities is to "Build on another's ideas: using brainstorming to come up with new ideas, building on one another's ideas"). In the same line, Liedtka (2015) outlines seven categories of Design thinking tools while evidencing cognitive biases that may produce harmful effects if not tackled. In line with Liedtka's warning on potential negative impacts of Design misuse, some research focused on comparing how expert and novice designers work, showing the need for training for a proper implementation (Seidel & Fixson, 2013). It is suggested that frustrating experiences or inadequate Design thinking implementation can lead to a premature abandonment or its evolution into an ineffective managerial fad (ibid).

The following figure extracted from the report 'Parts without a whole' (Schmiedgen et al., 2015, Universitätsverlag Potsdam) offers a synthetical view of the various elements behind Design (thinking):

Figure 14 - Design thinking scope extracted from Schmiedgen et al., 2015, Universitätsverlag Potsdam



Tool(box)
Tools with clear rules and instruction manuals, e.g.: *Empathy Map, POV MadLib, Brainstorming Rules, Stakeholder Map, etc.* Many tools come with steps on how to apply them. The more complex these steps become, the more they are perceived as self-contained methods.

Method/Process/Protocol
A means or manner of procedure to systematically get things done and know when to apply which tool (with its sub-steps) to the situation at hand. Often understood as a (semi-)ordered sequence of actions, for example the x steps in *'the' design thinking process, waterfall model, or other process representations.*

Methodology
Combining and mastering a set of appropriate methods and methodologies, i.e. the principles, practices, and procedures of different knowledge domains (e.g. *ethnographic research + industrial design + creativity methods etc.),* which might constitute a coherent whole for an application context at hand. Examples might be *Lean Start-up, Six Sigma* or *design thinking* itself.

Mindset
A guiding stance or attitude, which influences ways of reasoning. As such it shapes the selection and development of appropriate methodologies, methods, and tools. The frequent application of the latter three might influence the mindset and vice versa.

Figure 9: *Perceptions of design thinking along a spectrum of two extreme poles (illustrative figure)*

e. Design as a professional practice requiring a specific training

The last acceptance of Design relates to professional practice (Goslett, 1971) with a specific set of skills, knowledge, experience. Ad-hoc training is necessary (Johansson & Woodila, 2013). Magnon and Quarante (1996) distinguishes three types of professional practices: (i) the "Design Service providers" that include Design agencies, consultancies, and autonomous freelancers offering their services in response to commissioned work; (ii) "in-house designers" working in an organization, and (iii) independent *"model"* designers whose work is sold to companies or who turn their products into a business by themselves.

The Design education background is not specific to the practice type; however, Tovey (2016), in his book on Design Pedagogy, offers insights for designers' education and demonstrates the role of Design communities of practices and the need for specific skills dependent on "Design areas" and context. According to Fixson and Read (2012), Design education is mainly "application-focused" and relies on a qualitative understanding of the world. Cross (2004) investigated Design expertise by observing outstanding designers' behaviors and novices following Design education guidelines. He noted several differences that may inform Design schools and help build improved Design education programs. Fayard et al. (2017) underline a gap between initial training in Design well-established disciplines (e.g., industrial product or automotive Design, or graphic Design) that shape traditional designers and the actual job of some of them that move to the newest fields of application such as service Design. Buchanan (2004, 2015) and several others (Findeli, 2001; Dunne and Martin, 2006; Wrigley and Straker, 2017) advocate for a blended Design and Business education. Borja de Mozota and Chouki (2016) suggest that independent designer-entrepreneurs need specific competencies in the same line of thought.

2. The use of the word "Design" in this research

From our different readings, we retain two definitions of Design. First, we refer to the one presented in the French skills reference framework (Flamand and Delpech de Saint-Guilhem, 2015) that emphasizes the transversality and on a method that reinvents itself :

> "Design is a transversal discipline. At the interface between the human sciences and a technological approach, Design never thinks of itself alone. It necessarily induces teamwork and shared reflection. Unlike the artist who gives himself his constraints, the designer enters into his creative Design process through a programmatic methodology that reinvents itself in each intervention context." (Flamand and Delpech de Saint-Guilhem, 2015)

Second, we take on Warren Berger's one (2010) that, in our view, reconciles several acceptations previously presented by highlighting the change and execution orientations as well as the broad application scope:

> "Design is really a way of looking at the world with an eye toward changing it. To do that, a designer must be able to see not just what is, but what might be. Moreover, seeing is only the beginning: Designers are also makers. They sketch and build, giving form to ideas. They take that faint glimmer of possibility and make it visible and real to others. (…) Design is applicable to just about any challenge – and its principles are accessible to anyone." (Berger, 2010)

These definitions position the practice of Design as :

- transversal, at the crossroads of several disciplines (e.g., social sciences and technology) and departments within organizations,
- a collective, team effort.
- a creative process,
- a reflexive practice (Schön, 1984), the methodology must be reinvented with each context of intervention

As a synthesis, we characterize a Design practitioner as someone trained to be:

- driven by a quest for progress, continuous improvement, and the willingness to transform situations,
- able to observe and conduct ethnographic work
- able to envision a preferable situation and to make it visible to share it with others
- able to make things and bring a concept to life
- perseverant through multiple iterations
- in empathy requiring an emotional investment in the activity.

We deal with Design in the context of an organization following Jelinek et al.'s (2008) recommendation. In their introductory paper to Organization Studies' special issue on "Organization Studies as a Science for Design," they invite researchers to look into three dimensions: who is designing, what is being designed, the motivations and context in which Design occurs. This counterbalances an emphasis on the "how."

B. A contextual and historical approach

Since the industrial revolution, Design recognition as a competitive lever was enough to capture executives' interest, but its value has extended beyond economic considerations. Similarly, Design practice evolved in the past decades as new fields of problems emerged.

1. Design types: Industrial Design, Strategic (service) Design, Digital Design

In this section, we dig into the history and foundations of Design to understand what the word covers. We divide Design history into three periods by chronological order. Design emerges in the early 20th century. It rises in the industrial revolution at the junction between the arts, crafts, architecture, and industry. Second, in the mid-20th century, it develops with the first Design agencies appearances; simultaneously, Design thrives with the first integration in organizations, shaping "corporate Design."

Eventually, in the late 20th century and the beginning of the 21st century, Digital Design emanates from the democratization of technologies such as personal computers, the Internet, and smartphones.

Design develops through successive “industrial revolutions” and thus technological progress. First, production means and energy, then transport, communications, and information technology, radically transform society and people's daily lives. Calabretta and Kleinsmann (2017) suggest three eras to consider when studying the evolution of Design practices: the industrial era, the service era, and the digital era. They claim that Design moved from being a “tactical tool” in the industrial age for product performance to a “strategic capability” for business in the digital era. This change extends the value creation through Design from the production process to the entire product lifecycle. They synthesize Design practices evolution in the following table.

Figure 15 - Table extracted from Calabretta and Kleinsmann (2017) paper on Technology-driven evolution of Design practices: envisioning the role of Design in the digital era

Table 1. Summary of evolving design practices evolved during the three eras.

	Industrial era	Service era	Digital era
Human-centredness practices	Styling a product to appeal to people Applying technologies to ensure that the physical artefact functions in a desirable manner Design for usability; making the product fit the human body; designing human-product interactions	Delivering a holistic experience that people like Applying ICT technologies to improve the effectiveness of the service Creating a human-centred mind set within the stakeholder network	Creating product platforms that users can modify according to their own desires (both form and function) Creating value during production that a user can optimise during use while s/he creates value during use Applying smart digital technologies to transform services
Collaborative practices	Facilitating cross-functional collaborations within the firm Facilitating knowledge brokering in the multi-disciplinary team (T-shaped designer)	Co-creating with stakeholders in innovation networks Facilitating knowledge brokering within the (emerging) network	Orchestrating multi-party collaborations over long periods of time (during both production and use)
Prototyping practices	Sketching ideas Building physical concepts to test form and function	Prototyping experiences and processes Collective prototyping /rapid co-creation	Visualising shared visions of the system to be produced Continuous cycles of experience prototyping Business model prototyping
Value creation mechanism and design impact	Value is created during production Design generates value through improved styling, functionality and usability	Value is created during use Design generates value through creating human-centred experiences	Value is created during both production and use Design creates value through the transformation of systems that are based on the human scale

Their contribution builds on the work of Pine and Gilmore (1999) that indicate a progression of economic value from "commodities" to "goods" (that corresponds to Calabretta and Kleinsmann "industrial era"), then from "goods" to "services" and eventually to "experiences" (the "service" era).

In the following, we explore the roots of Industrial Design, Strategic Service Design, and Digital Design, exposing the evolution of the fields of problems Design addresses.

a. Industrial Design inherited from the industrial revolution: desirability, industrial aesthetics

The industrial revolution is considered the starting point of Design emergence as "a response to the new needs of enterprises and industrial mass production," i.e., industrial Design (Magnon and Quarante, 1996). We presented earlier the most renowned example of Design contribution in the beginnings of the industrial revolution: Thonet's innovative "bistro" chair that combined innovation on the manufacturing processes, a specific mastery of bentwood techniques, and innovation in the storage and transportation of the products. In addition to the industrial context, Design developed with architecture and town planning and shaped millions of people's lifestyles with housing principles, appliances, consumer goods, and product innovation. Design was born in Western Europe and theorized in Germany with the emergence of the Bauhaus movement cultivating the art of *"shaping forms that follow function."* It migrated to the USA, where it developed as the art of selling promoted by Loewy. Industrial Design illustrates mass production through iconic products comparable to art pieces found in houses, museums, and high-standard places. Additionally, it is embodied in experimental realizations offering a reflection on the society and prospective visions of living ways. For instance, Le Corbusier is particularly famous in architecture, town planning, and Design for being the inventor of the "housing unit" and the "Radiant City" in France. The latter was intended to be a prototype of new lifestyles, reconciling the industry with nature and life in society. The Bauhaus offered a vision, a foundation of knowledge and practices, on which schools have relied on the training of several generations of designers (Bayazit, 2004).

→ The first Design agencies promoting Design and offering creative services to companies

In the same period (the early 1950s), the first *"Design office specialized in industrial aesthetics," i.e.,* Design agency is created in France by Jacques Viénot, Jean Parthenay, and Roger Tallon: "Technès" which in Greek means "to manufacture," "to produce," "to build." Three years later, Raymond Loewy founded his agency *"Compagnie de l'Esthétique Industrielle*." Few years after the creation of "Technès," Jacques Viénot founded the *"Institut d'Esthétique Industrielle"(i.e., the industrial aesthetics institute),* which is now the "Institut Français du Design" (i.e., French Design institute), a national organization in charge of Design promotion. He was also responsible for the profession's first code of ethics: the laws

of industrial aesthetics. He created in 1957 the International Council of Societies of Industrial Design (ICSID)[4], the first international Design organization that defined Industrial Design as :

> "An industrial designer is qualified by training, technical knowledge, experience, and visual sensibility to determine the materials, mechanisms, shape, color, surface finishes, and decoration of objects which are reproduced in quantity by industrial processes. The industrial designer may, at different times, be concerned with all or only some of these aspects of an industrially produced object.

They associate industrial Design with results such as the "packaging," "advertising," "marketing," insisting on aesthetical matters or technical knowledge. They compare designers to "artist-craftsmen" whose work, such as drawing or models, is "commercial and made in batches, in large quantities."

In a nutshell, as of the 1950s onwards, industrial designers worked on communication, transportation, mass consumption, and leisure. Design products are omnipresent in everyday life.

b. Strategic (service) Design, inherited from the '50s: pioneering firms such as IBM or Braun

Four years before the publication of the book "Never Leave Well Enough Alone," in 1953, Raymond Loewy made the front page of The Times as an emblematic figure of Design. This is an unprecedented event in Design history because the press coverage contributed to its popularization and ignited corporates interest. His work is used in Design schools to teach industrial aesthetics, despite his defense of a consumerist vision. Magnon and Quarante (1996) identify Raymond Loewy as a "success story" representative of the rise of the consumer society and the mobilization of designers in this context as "specialists in form and appearance."

→ 1950 - 1970 / first integration of Design in organizations

The 1950s are also marked by the creation of the first Design departments in companies. The departments welcome "in-house designers" and Design directors or "Design managers" to lead them and define the Design strategy. In-house designers work on the visual identity, the definition of the company singularity with distinguishing products, increasing Brand visibility, recognition, and appreciation (Cooper et al. 2011). Some Design directors became emblematic figures. Dieter Rams is famous for his successful collaboration with Braun and the publication of the *Ten Design Principles of*

4 Recently, the ICSID has become the World Design Organization (WDO) and proposed a revised definition that reflects the profession's evolution and insists on the contribution to global challenges beyond the commercial aspect for mass production.

good Design[5]. Apple products, especially the ones directed by Jonathan Ive, are often cited to demonstrate Dieter Rams' influence on other designers' work. Among the emblematic figures of Design are Eliott Noyes, the Eames, Eero Saarinen, and Paul Rand, creator of the "eye-bee-M" logo. In France, Roger Tallon demonstrated the value of a holistic approach through his work with SNCF (French public railway company) on the TGV (high-speed train). He designed a holistic train travel experience: from the interior spaces to the signage, the catering area, and the staff's uniforms on board. Yves Behar worked on Mini Cooper car customer experience and built an entire ecosystem around the product:

> "what Mini needed was an ecosystem, a supporting network of products and services that could elevate the original product into a fuller experience. Behar set out to enlarge and expand the Mini driving experience by creating specially designed accessories such as driving gloves, a special driving jacket, and a wristwatch. Normally, Behar says, car accessories are generic items with a logo slapped on them." (Berger, 2010)

These examples (Mini Cooper, IBM, or the TGV) illustrate the contribution of Design to the firm's identity through communication and graphic Design. These communications or branding work may lead later to designing new products.

→ Renewed interest in Design integration in organizations

Cooper et al. (2011) tell the story of the interest in bringing Design and Business together by going back to the creation of the International Design Conference in Aspen (IDCA, in 1949):

> "(the founder) saw the purpose of the IDCA as bringing together designers, artists, engineers, business, and industry leaders. (…) The title of this first IDCA conference, 'Design as a Function of Management,' highlighted a new understanding of designers' and managers' relationships and attracted designers, businesses, and industry leaders."

The Design Management Institute (DMI), created by Bill Hannon in the United States at the end of the 1970s, is part of this logic. The DMI seeks to offer Design managers working in large companies opportunities to share their practices and continue their education. It brings together participants from various backgrounds (e.g., engineers, designers, managers, artists). Borja De Mozota (2018) responds to a growing need to develop tools for Design management and Management by Design, or Design integration into companies.

Design progressively becomes a strategic matter in companies such as IBM, Intuit, or Apple that adopted Rams' ten principles of good Design. The recent "Design renaissance program" at IBM (launched by the new Director in 2012) reaffirmed the statement of 1956, i.e., "Good Design is Good Business." It led to hiring thousands of designers and establishing a Design career path and an expertise development formalized in an extensive training program.

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5 - The ten design principles are: "Good Design… is innovative, makes a product useful, is aesthetic, makes a product understandable, is unobtrusive, is honest, is long-lasting, is thorough down to the last detail, is environmentally friendly, is as little Design as possible. "

The general public acknowledgment of Design in France goes back to this same period. At the end of the 20th century, it was defined as *"an activity linking user-consumers and technical creativity"* (Magnon and Quarante, 1996). Despite the predominance of industrial Design products, very early on, some authors called on designers to take an interest in broader, more complex problems with a substantial impact on society (Papanek, 1985; Buchanan, 2015). This vision of Design grew since the beginning of the 21st century.

Despite a renewed interest in Strategic Design and wider fields of problems application, a recent Mc Kinsey report (Dalrymple et al., 2020) based on a survey of 1700 practitioners and interviews of 200 head of Design and 100 top executives highlighted a gap between the strategic ambition for Design and in-house Design reality. They report that only a third of CEOs and top management executives can express what the Head of Design is accountable for and explain how Design performance is reviewed. Only one in ten is convinced that senior designers play a role in strategy development. At the same time, the same report suggests the CEOs "set the bar too low for what designers—and Design—can deliver."

c. Digital, service & experience Design

Calabretta and Kleinsmann (2017) highlighted that the digital era is characterized by the fast development and massive adoption of information and communication technologies (ICT). It opened a new field of Design application: Human-Computer Interactions, Digital Product, User eXperience & User Interface, or Interaction. Digital innovations defined as *"an innovation enabled by digital technologies that lead to the creation of new forms of digitalization," i.e., "the transformation of socio-technical structures that were previously mediated by non-digital artifacts or relationships into ones that are mediated by digitized artifacts and relationships." (Yoo et al., 2010)* opens new ways for Design evolution and designer specializations. For instance, the development of Big Data, Machine Learning, three-dimensional printing, or Vocal interfaces leads to product and service transformations, where Design practices play a huge role (Calabretta and Kleinsmann, 2017). The renewed interest in Design in organizations can be traced back to the digital transformation (Barrett et al., 2012; Calabretta and Kleinsmann, 2017).

As part of the service and experience economy (Pine and Gilmore, 1999), a body of Design practitioners seeking to address complex and systemic issues specialized in "Service Design" (Sangiorgi and Prendiville, 2017; Kimbell, 2011). In this perspective, experiences are considered at the extreme scope of services, such as "Experiential Services" or "experience-centric service" (Zomerdijk and Voss 2011, Voss and Zomerdijk, 2007). Indeed, experiences rely on customer-centricity and collaboration, especially co-creation with customers (Calabretta and Kleinsmann, 2017), which is at the core of service designers' ethos (Fayard et al., 2017). The "delivery of holistic and engaging experiences" (ibid) requires key partnerships with internal and external stakeholders. A growing number of touchpoints have become digital (Yoo et al., 2010). Experience Design is often confused with UX Design that stands

for User Experience Design and is focused on Human-Computer Interactions, especially digital products (such as websites, apps, software) and experiences (e.g., buying goods online, accessing a service).

d. Design thinking: from agencies to general consultancies

Another development of Design relates to its popularization through Design thinking. Design thinking puts the user at the center of innovation processes (Brown, 2008; 2009; Martin, 2009; Fixson and Seidel, 2013; Liedtka, 2014; Carlgren et al., 2016a; Ben Mahmoud-Jouini et al. 2016). Brown and Katz (2011) define Design thinking as the Design practice of the 21st century, arguing Design thinking emerged from a cultural change and a growing interest in applying Design to new contexts and problems, especially in organizations. The focus moved from product-centric to people-centric, to "problems that matter" and the need for lives improvement. Several research studies show the wide diffusion of this approach in companies to deal with projects beyond product, such as process, workflow management, Design of workspaces, of the organization itself or the strategy (Johansson-Sköldberg et al. 2013; Bailey, 2012; Elsbach and Stigliani, 2018; Storvang et al., 2014).

Independently from debates over Design Thinking characterization, the significant change is that through Design thinking, Design is made accessible to non-designers exploring new types of problems. Kelley and Kelley (2013) advocate that Design thinking provides creative confidence in organizations. More than a process, Dell'Era et al. (2020) considers Design thinking a suitable approach to digital transformation. They define it as an approach fostering an innovation mindset and change that *"reshapes the organizational culture and enables the digital transformation."*

More than adopting new tools, processes, approaches, Design Thinking and Creative Confidence transform an organization's culture, fostering new behaviors and values to encourage change and innovation.

e. The four orders of Design (Buchanan, 2015, 2008, 1992)

In his article "Worlds in the Making: Design, Management, and the Reform of Organizational Culture," Buchanan (2015) looks back on the early development of Industrial Design in the 20th century in the organization, from early Graphic work for visual communication to Product Design for physical artifacts mass production, that grew emphasis on Design professions as complementary to Engineering, and Marketing. He then discusses the recent development of Design as a profession complementary to Management, claiming that Management is a Design discipline dating back to the 1950s. According to him, Management is a new field for Design application that can lead to new Management practices.

We synthesize Buchanan's view of Design evolution in Table 3 next page. Buchanan outlines the interconnections between the various practices and growing attention on *"the Design of systems, environments, and, most recently, organizations":*

Table 3 - Evolution of the Design profession since the industrial revolution according to Buchanan (2015)

timeline	Focus	Form of practice	Quote from the text
Early 20th century	Work on the creation of texts & images for print publications	Graphic Design > Visual communication > Communication Design > Information Design	"Early in the twentieth century, designers were called upon to address the problems of mass communication, creating texts and images for print publications. This was the beginning of our modern understanding of Graphic Design. This profession has evolved from graphics to visual communication and, finally, to communication Design, with special emphasis on information Design."
Industrial revolution	Work on the creation of patterns, forms & mechanisms for physical artifacts fabricated in factories	Industrial Design (close relationship w/ engineering & marketing) Product Design for Product development	"At the same time, other designers were called upon to address the problems of mass production, creating the patterns, forms, and mechanisms of all of the physical artifacts that were fabricated in factories around the world. This was the formal beginning of industrial Design, often linked to engineering and evolving into what we call product Design and then product development, with a growing emphasis on the close relationship among Design, engineering, and marketing. Both professions found important places in organizations."
Mid-20th century (1950's)	Work in Corporate Environments, the rise of "Design-centric" organizations	Corporate Design, System Designers	"Winston Churchill famously remarked, "We shape our buildings, and afterward, our buildings shape us." (…) we might say it slightly differently: we shape our organizations, and then our organizations shape us. Put simply, the challenge for Design is how to influence organizations to affect the thinking and behavior of individuals and have a positive effect on human experience in an increasingly complex world. This was the challenge faced by Nelson himself when he worked for the Herman Miller Furniture Company. He brought together leading designers, including Charles and Ray Eames, Isamu Noguchi, Robert Propst, and textile designer Alexander Girard. Together, they created a series of products that elevated Herman Miller to a leading position among similar organizations and, ultimately, to a wide array of organizations that regard Design as a key intellectual property woven into the organization's DNA. The products created by this team remain icons of excellent Design for the period, and they remain as examples of the best that product Design can produce in any period. In essence, Herman Miller became a "Design-centric" organization, with Design thinking at the core of corporate vision."
The 1990s	Work on the immediate interaction with computer screen & human interactions with the environment	Human Machines Interactions > Interface Design > Interaction Design	"One focused on the interaction between human beings and the machines they create, with a growing emphasis on the computing machinery that marks our entrance into a digital world. Beginning with interface Design, focusing on the immediate interaction of a human being and the computer screen, this form of Design quickly developed beyond the flat-land of the computer screen to address problems of designing a wide variety of human interactions with their surrounding environments."
	Work on offerings of businesses and corporations or the services provided by governments and non-governmental social service agencies.	Service Design	"What has changed today is the engagement of designers working in the tradition of George Nelson and other leading designers of the twentieth century, individuals who have turned the concepts and methods of Design, as we usually understand Design, toward addressing the problems of organizational culture reform. These are individuals who began their education and careers working in Graphic Design, Information Design, communication design or industrial and product Design or service Design, and interaction Design. Though employing different approaches to Design, they have worked toward a common purpose in creating products and services of high quality that advance the economic success of organizations and also provide satisfying experiences for individuals that benefit society at large."
21st century	Work on the standards of ordinary usage, service Design grounded in the environment	User Experience Design Thinking	"questions of user experience have come to surround us in our everyday lives, affecting our understanding of all forms of Design, whether in communication or artifacts or in the processes in which humans are involved." "The principle of Design that stands behind the organizational culture reform movement in which Design thinking is central is grounded in the quality of experience for all of those served by the organization. This includes the individuals who directly use the products and services of the organization. However, it also includes those affected by the organization's internal and external operations and those in society at large who are ultimately affected by the vision and strategies of the organization."
	Work on Systems, Complexity, and Societal Problems	Systems Designers	"This new form of practice drew heavily on the expertise of individuals from many professions and disciplines. The systems engineering of the 1940s and 1950s focused on the physical and material systems of complex products. From this beginning came growing concern for the human systems that had to be integrated with complex material systems. If interaction Design focused on actions, activities, and services, the new form of system Design focused on the largest wholes that human beings create."

Based on this historical perspective, Buchanan proposes a matrix to define Design through four categories, from Graphic and Industrial Design to Interaction Design and then to the Design of systems, environments, and organizations. This categorization corresponds to the "four orders" of Design:

- "Design of symbolic and visual communications."
- "Design of material objects."
- "Design of activities and organized services."
- "Design of complex systems or environments for living, working, playing, and learning."

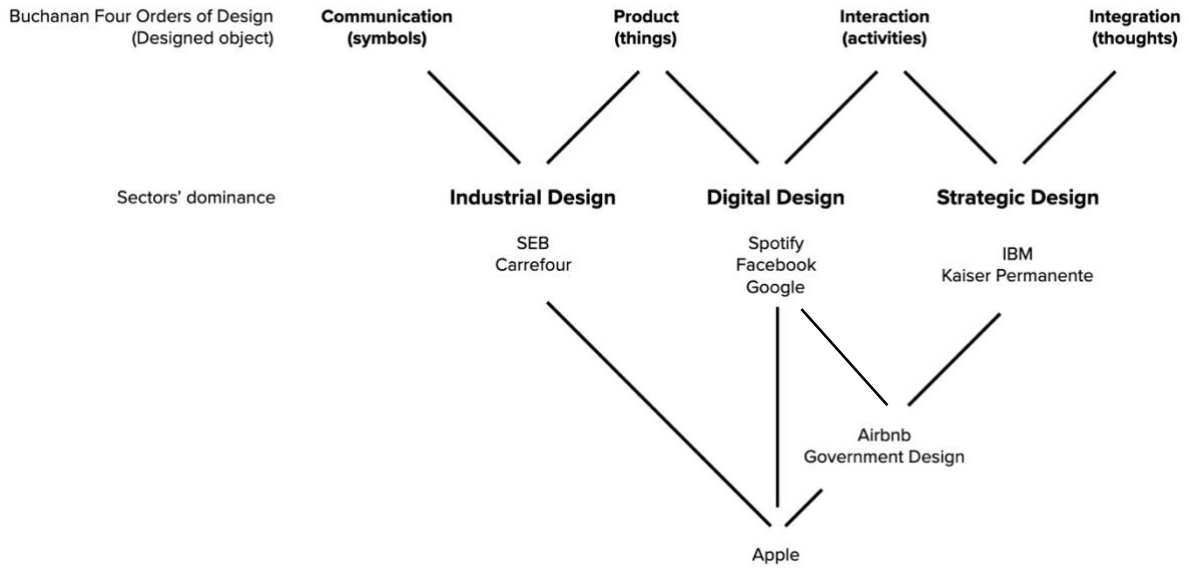
Design application fields have diversified, and new ones have emerged, such as service Design, social Design, experience Design, circular Design, public Design. Despite variations in the terminology, they all share common origins and similarities. Buchanan (1992) strongly advises overcoming the limitation of Design practice to the result it produces. He argues that no matter the result designers focus on, they share the same "places of inventions" and use the same objects, i.e., symbols, things, activities, thoughts, and systems, which translate into the four orders of Design: communication, product, interaction, integration.

f. Design applicability: a synthesis

We pointed in the last part to three Design types to describe the practice evolution throughout history: Industrial Design, Digital Design, Strategic Design. Those orientations are informed by the context and the era in which Design occurs, not the result of the Design Process. Indeed, we agree with Buchanan's view that they share the same values, mindset, and methods no matter the designers' focus. They all search for desirability (aesthetics), viability (performance and impact), feasibility (technical), and hopefully soon sustainability. However, based on our literature review, we argue that Design is context-dependent: the context impacts the Design aims, priorities, and the field of problems addressed. Hence, designers may need specific skillsets and knowledge to adapt to the context they operate in. An industrial designer working for a furniture manufacturer requires knowledge of the manufacturing processes and materials

In contrast, Digital designers have to possess the basics of digital product development and user experience. The increasing complexity of the fields of problems calls for a combination of the various Design types in organizations. We illustrate it in the following figure (Figure 16), building on Buchanan's Four Orders of Design and on emblematic case studies we found in industrial reports and academic studies.

Figure 16 – The combination of the various Design types in organizations



This diversification emphasizes the broad applicability of Design beyond physical objects (Brown & Martin, 2015), i.e., the industrial sector and the focus on New Product Development. It also escalates the difficulty of grasping what lies behind the word.

2. Value creation through Design: for innovation, competitiveness, and a positive impact on society

The Design sector is part of the CCIs, the Creative and Cultural Industries. In 2015, CCIs accounted for almost 2.6% of European GDP (Flamand and Delpech de Saint-Guilhem, 2015). The European Commission considers that CCIs contribute to firms' innovation activities and their competitiveness through "creative innovation services" to help them face "an ever-changing global environment" overcoming "risk aversion, status quo tendencies, and lack of perspective" (Green Paper - Unlocking the potential of cultural and creative industries, 2010). Design is a typical example of a company's creative process. Reports commissioned by the European Commission (Kootstra, 2009) or national agencies, such as the Design Council in England ("The Design economy,") and in Denmark ("Design Denmark," 2007), demonstrate the link between Design and competitiveness. In Denmark, the Danish Design Center looked at companies' maturity in Design integration (Rønhof and Bason, 2017). In France, the Ministry of Economy, Industry, and Culture commissioned in 2013 a report on the value of Design for industrial companies titled "Design Impact" (Picaud et al., 2015). Studies and consultant reports emphasize competitivity to advocate for Design integration in small, medium, and large organizations. They highlight its role in fostering innovation and economic performance. However, as Design is also recognized as a powerful driver of change, it comes with a responsibility

towards doing good and paying attention to its impact on society (Papanek, 1985). More than an ethical consideration, Design has a role to play in companies' search for purpose and meaning.

a. A positive impact on business performance

Design role as a driver for innovation and growth (Gemser & Leenders, 2001; Herteinstein et al., 2010; Stigliani and Ravasi, 2012) and its impact on business performance has been demonstrated. Researchers evidenced three types of value created through Design (Driessen, 2006; Borja de Mozota, 2019). First, the *economic value* - determined by the return on investment, revenues growth, and financial performance measurement - (Gruber et al., 2015; Hertenstein et al., 2010; Picaud et al., 2015; Sheppard et al., 2018; DMI report by Westcott et al., 2013). For ten years, the Design Council (UK) research team tracked the 250 Design-led companies' stock value evolution among the 1500 largest companies listed on the London Stock Exchange. Design-led companies are the ones :

> "where the use of Design has made a direct impact on such key measures as competitiveness, market share, sales, and employment. One important component of this effort is "a sustained track record in Design and innovation awards" by these organizations. Other indicators of Design leadership included senior-level or executive-level Design management and broad Design training across the organization." (Westcott et al., 2013)

They compared it to the FTSE 100: the stock market index that shows the stock value's evolution of the 100 largest companies on the London Stock Exchange. It is considered as a gauge for prosperity for UK businesses. They found that the stock value index of the Design-led companies outperformed the FTSE 100 by 231%. The Design Management Institute (USA) conducted a similar study in the USA. The "Design Value Index" —index showing the evolution of the stock value of a selection of Design-led companies— is compared to the S&P 500, representing the evolution of the top 500 companies listed on stock exchanges in the United States. The "Design Value Index" outperformed the S&P index by 228% over the 2003-2013 period. More recently, McKinsey's consulting firm renewed the experiment and demonstrated similar results, confirming "The Business Value of Design."

Second, *the product and perception value* relate to the quality of a product and its appreciation by the customers or users, contributing to competitors' differentiation. Third, *the social value* for users or user experience. Scholars argue that the experience a user has when interacting with a company outweighs the product or service value (Fuglsang et al., 2011). The shift from the service economy to the experience economy (Pine and Gilmore, 1999) re-emphasizes the Design social value. Gruber et al. (2015) stressed that the experience quality, both for internal users (employees) - the New Workplace Experience - and external users (customers, partners) - the Customer Experience – is central to the firm performance but is challenging to address. He highlights the need for revised Key Performance Indicators to assess the firm's performance, reflecting the experience quality. They argue that Design helps increase business performance by empowering teams in creating compelling experiences.

b. Changes in the organizations' performance and status to face global challenges

Public and private organizations are searching for innovative responses to current global challenges and threats. In the last decades, scholars opened new research fields to participate in the debates over Sustainable Development and Ethical issues that lead to rent-seeking behaviors. They emphasize the organizations' impact and role in shaping societies. A French research stream suggests a new corporate status that reinstates the search for a positive effect on society as core to the firm performance. Those purpose-driven organizations (Levillain et al., 2019; Levillain and Segrestin, 2019) reconnect with the dual-meaning of the "enterprise" terminology of entrepreneurial initiative with intent and economic business (Segrestin and Hatchuel, 2012). Such enterprises lay the foundations of a "corporate contract" that considers equally wealth creation, social progress and environmental preservation, and other contemporary challenges such as the UN Sustainable Development Goals. This view relying on organizations' ability to innovate targeting plural value creation echoes Design ability.

c. A positive impact on society

The concern about Design impact on society and designers' responsibility and ethics crossed centuries. We could compare Italian Renaissance "designers" preoccupations with current ones. Orel (2016) refers to Da Vinci's refusal to execute his plan for a "submersible boat, intended to sink other boats" (submarine) for fear of the consequences that his creation could have. While part of industrial Design work in the 20th century focused on boosting sales, Papanek (1985) and a few other pioneers counterbalanced this dominant view writing about sustainability and showing designers' responsibility in designing a better world (Sahakian, 2017). He wrote about ethical dilemmas that designers faced (Papanek, 1985; Buchanan, 2015.) Lately, projects, reports, communities and events, dedicated to the ethics in Design emerged in France and worldwide from scholars and practitioners (e.g., the documentary and resources "Ethics for Design," "Ethics by Design" by the community "Designers Éthiques," Maeda's "Design in Tech Report" focus on designing for inclusiveness.) To name a few, digital designers responsibility towards dark patterns, data privacy and AI discriminatory biases (Digital Ethics), the rise of Circular Design for industrial designers, or the use of Design for social innovation (Manzini, 2015) within the frame of the UN Sustainable Development Goals are new avenues for further Design practices evolution. This tendency of Design applied to new fields of problem-driven by wicked social issues shed light on Design Thinking (Liedtka et al., 2017). Brown and Katz (2011) refer to a cultural change through Design thinking as a reflection of thinkers' interest in investing their skills to address "problems that matter" instead of "boosting sales."

C. Design in organizations and Design management

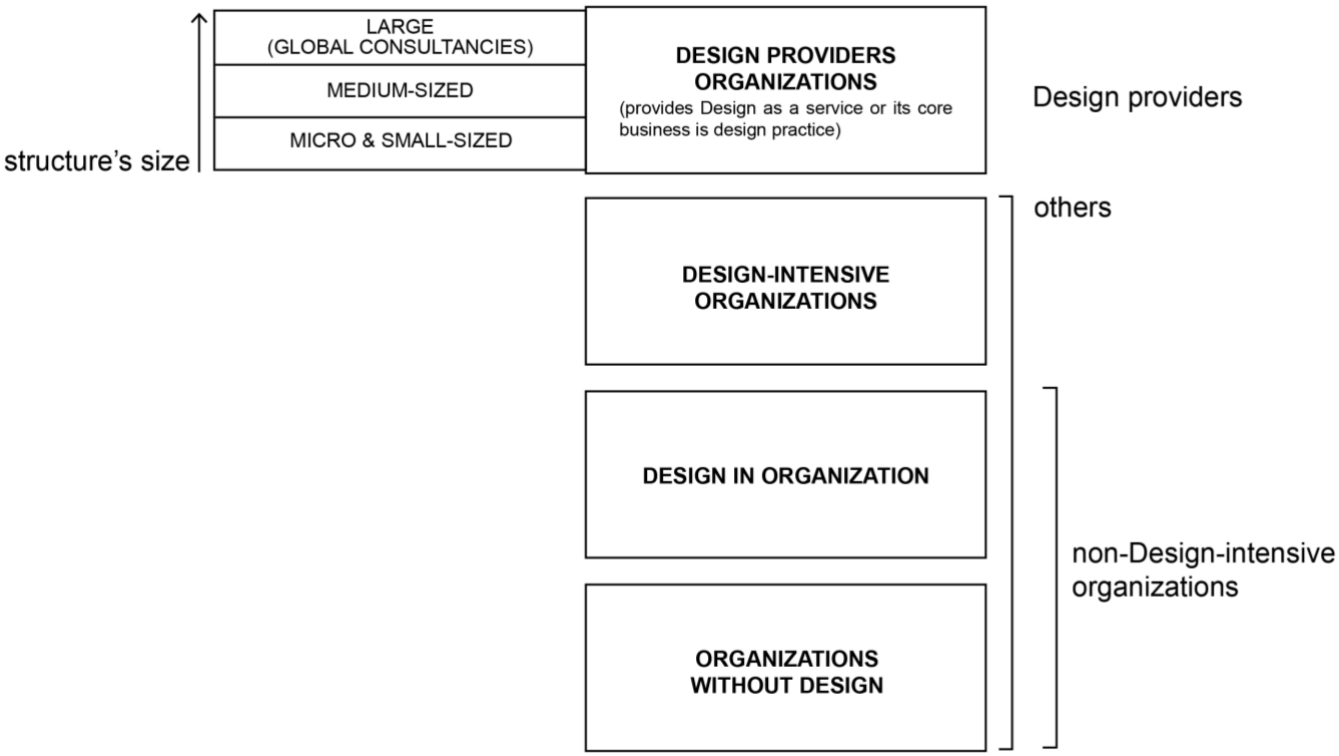
Among the three settings of professional Design practice (Freelancing, Agency, and Corporate Design), we focus on "Corporate Design," i.e., Design in organizations and, more specifically, Design integrated internally through an in-house Design capability. In the following part, we further define various Design levels in organizations to specify this research topic and situate it in light of existing literature on Design and Design management.

1. Design in organizations

In this section, we distinguish various types of organizations in which Design activities occur and investigate the motivations and models for Design integration.

Focusing on the organization level, we distinguish in Figure 17 the Design providers and Design consumers. Among the formers, there are three categories: first, the small Design structures (freelance designers, micro-sized companies, i.e., less than ten people or small-sized companies), the medium-sized agencies, and the larger structures under which falls the Design group consultancies operating in several countries. Among the Design consumer firms, there are first, Design-intensive firms, i.e., organizations for which Design is central even though they operate in non-Design intensive sectors. For instance, Kaiser Permanente, an organization operating in the health care sector where Design plays a massive role in developing and executing the services, distinguishes the firm from its direct competitors. The firm has an in-house Innovation Consultancy born from the collaboration with the Design consultancy IDEO (McCreary, 2010). And second, there are non-Design intensive firms in which either Design exists but does not have a central role (Design in Organization) or does not exist (organizations without Design).

Figure 17 - Design in organizations layers of definition



a. Design providers

Research on Design providers focused on the practice of Design. For instance, many studies focused on IDEO, among other Design consultancies (Hargadon and Sutton, 1997; Cooper et al., 2011). A recent body of research investigates the relationship between the Design providers and their customers, focusing, for instance, on the types of services provided (Dell'Era et al., 2020) or the Make or Buy Design decision (Le Dain et al. 2010; Abecassis et al. 2012). We notice in the past decade growth of the number of Design consultancies and a salve of acquisitions of such structures by major general consultancies (e.g., Accenture acquires Fjord in 2013, Altran acquisition of Frog Design in 2017, BCG acquired Design Consultancy AllofUs in 2019, etc.) as shown in the following figure (Figure 18) that highlights 71 acquisitions of Design agencies by large companies and consultancies between 2004 and 2017, 50% of which occurred between 2015 and 2017.

Figure 18 - Slide extracted from the "Design in Tech" report of the year 2017, by John Maeda, showing Design M&A Activity.

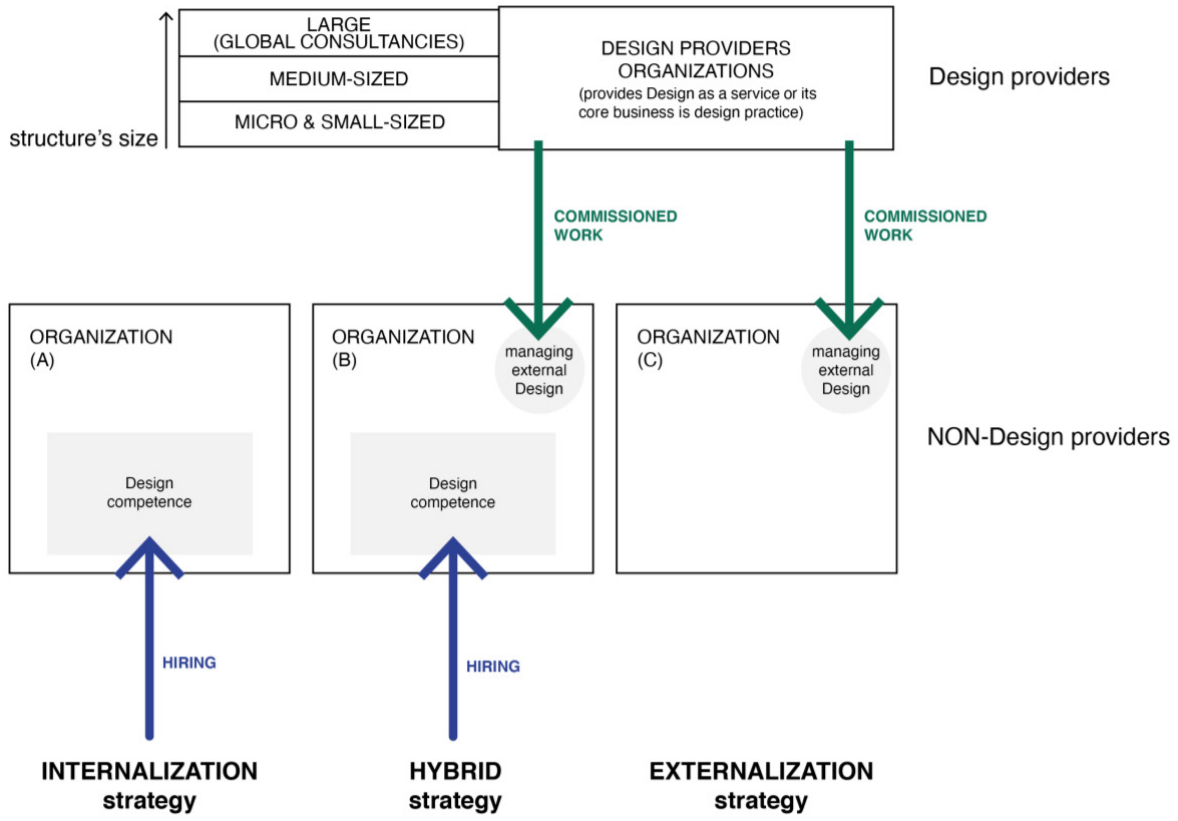
Indeed, in light of the high performances of Design-intensive firms' that outperform others (Brown and Katz, 2011; Cooper et al., 2011; Martin, 2009; Sheppard et al., 2018), non-Design-intensive firms turned to Design providers. Others decided to integrate Design as documented in some research (Mutanen, 2008; Price et al., 2018; Lima & Sangiorgi, 2018; Bailey, 2012; Ben Mahmoud-Jouini et al., 2019) and discussed below.

b. Design integration in organizations

A recent body of research investigated Design integration within organizations resulting in some cases in substantial transformation such as for IBM, Intuit, P&G, Samsung, Thales, or Kaiser Permanente (McCreary, 2010; Kumar and Holloway, 2009; Brown and Anthony, 2011; Lafley & Charan, 2008; Martin, 2009, 2011; Lockwood, 2017; Ben Mahmoud-Jouini et al. 2019). These researches show a variety of Design integration levels and processes.

Some organizations develop minimal internal expertise sufficient to purchase the Design service from the providers (externalization strategy). In contrast, others set up in-house Design resources (internalization strategy) or mix the two previous modes (a hybrid strategy) (see figure 19).

Figure 19 - Design integration strategies



In the case of externalization, minimum expertise is required in-house to enable an efficient and optimal leveraging of external resources. The strategy's choice is based on criteria such as the levels of familiarity, accessibility, and control of Design (Bruce and Morris, 1994). The "make or buy" Design decision depends on the firm's objective and presents different managerial challenges (Bruce and Morris, 1994; Cooper et al., 2017; Czarnitzki and Thorwarth, 2012; Le Dain et al., 2010; Hemonnet-Goujot, 2019). The decision is made at the project level (for specific one-off assignments). We designate the mobilization of Design on a one-off mission as Design intervention. For organizations that are not used to Design, the intervention can enhance the awareness of its members about the value created by Design. It can generate interest or a willingness to use Design again and integrate it into the organization (Nusem et al., 2019). Borja De Mozota (2018) mentions the need to provide evidence of Design's effectiveness as an entry point for Design in organizations, referring to the observation of organizations using Design in the context of digital transformation. The willingness and then the Design integration follow this proof by action (Rauth et al., 2014).

In the case of a hybrid Design integration strategy, the use of external Design professionals can be motivated by the need to reinforce the capacity to reach deadlines on projects, for example (Bruce and Morris, 1994), or by the necessity of specific expertise ("knowledge brokering," or "technology brokering," according to Hargadon and Sutton, 1997) to stimulate creativity and bring in new ideas.

In their article “Toward Design Orientation and Integration: Driving Design from Awareness to Action,” Nusem et al. (2019) build on Beckman and Barry’s (2007) learning process model to explain the path towards Design integration in non-Design-intensive organizations through a sequence of four steps: awareness, interest, desire, and action. Indeed, Beckman and Barry (2007) have combined the work of Owen (2006), for whom designers alternate between *'knowledge building*' and *'knowledge using,'* with the work of Kolb (2015) on experiential learning to suggest four stages of a Design process: 'experiencing,' 'reflecting,' 'thinking,' and 'acting.'

c. Design internalization (In -house Design)

Organizations encounter difficulties when internalizing Design and building in-house Design capability. Carlgren et al. (2016a) pointed out seven challenges firms have to cope with when internalizing Design: (1) misfit with existing processes and structures; (2) resulting ideas and concepts are challenging to implement; (3) value of DT is difficult to prove; (4) DT principles/mindsets clash with organizational culture; (5) existing power dynamics are threatened; (6) skills are hard to acquire; (7) and communication style is different. Regarding Design thinking integration specifically, Micheli et al. (2015) propose three factors to be considered: “Roles of key personnel,” “Organizational practices,” and “Organizational climate and culture.” They end up proposing a diagram that mirrors the conditions for creating a virtuous circle with the requirements for starting a vicious circle. Wrigley et al. (2020) suggest necessary conditions for a proper Design internalization: (a) the definition of a long-term objective and intention, i.e., a strategic vision, (b) the allocation of resources and space for Design activities, (c) the obtaining of a mandate that encourages the use of Design and is included among the objectives, (d) the building of “cultural capital” through acculturation to Design and the development of skills throughout the organization. This “cultural capital” ensures a good understanding of Design and the development of Design knowledge and skills. The need for the latter condition is supported by another recent study that advocates the co-evolution of diffuse expertise (acculturation) and specialized expertise (skills) for the development of an organization's Design capacity (Björklund et al., 2020). Once the internalization has begun, the challenge is to support the development of internal Design capacities over the long term; otherwise, Design will disappear like a fad. Wrigley et al. (2020) mention this risk of a “sugar rush,” i.e., a one-off contribution that quickly fades away. Micheli et al. (2018) mention a similar risk that they explain by a lack of clarity on Design. Hence, according to these authors, the absence of clarity and internal capacities can lead to Design as a 'management fad' in the sense of Abrahamson (1996).

The In-house Design resources encompass a variety of Design practitioners, i.e., professional designers, Design thinkers (employees practicing Design thinking), and Silent designers (Gorb & Dumas, 1987) or novices in Design. Gorb and Dumas (1987) define Silent design as *“design by people who are not designers and are not aware that they are participating in design activity.”* Sangiorgi and

Prendiville (2017) outline that Design capabilities do not rely only on Design professionals, suggesting that non-professional designers can apply Design too. It can be through acquiring a Design consultancy (e.g., Adaptive Path absorption into Capital One), hiring designers, or training employees.

Junginger (2015) invites hired designers to compose with the firm's organizational legacy, which implies finding their ways in the existing practices. Especially, she suggests that some Design principles, methods, or practices may preexist even if they may be "*flawed and poorly suited.*" She insists that to implement change in the organization, it is better to connect them with the new practices. She suggests that being aware and mindful of this organizational legacy can "open up new ways to collaborate and engage with organizational staff." Simultaneously, the new practices can conflict with the preexisting functions, such as the difficulties of collaboration between Marketing and Design in New Product Development activities (Beverland et al., 2016).

d. Design positioning and maturity of Design internalization in organizations

In the literature, we find several models of Design integration within organizations. Junginger (2009) suggests four archetypical places where Design thinking may be found: in the periphery (Design is booked on demand for one-off contributions), somewhere (Design exists in the organization such as in a dedicated department or at the project level), at the core (Design has a strategic role and is a key resource with the support of leadership), intrinsic (Design is part of the culture and applied transversally in the organization). Merholz and Skinner (2016) suggest three Design organization models: a decentralized model, which they generally start, a centralized one, and a centralized partnership model.

Storvang et al. (2015) propose a maturity assessment model, represented in scale of measurement on the following five dimensions: Design awareness, Design in internal processes, User involvement, Innovation drivers, Design capabilities.

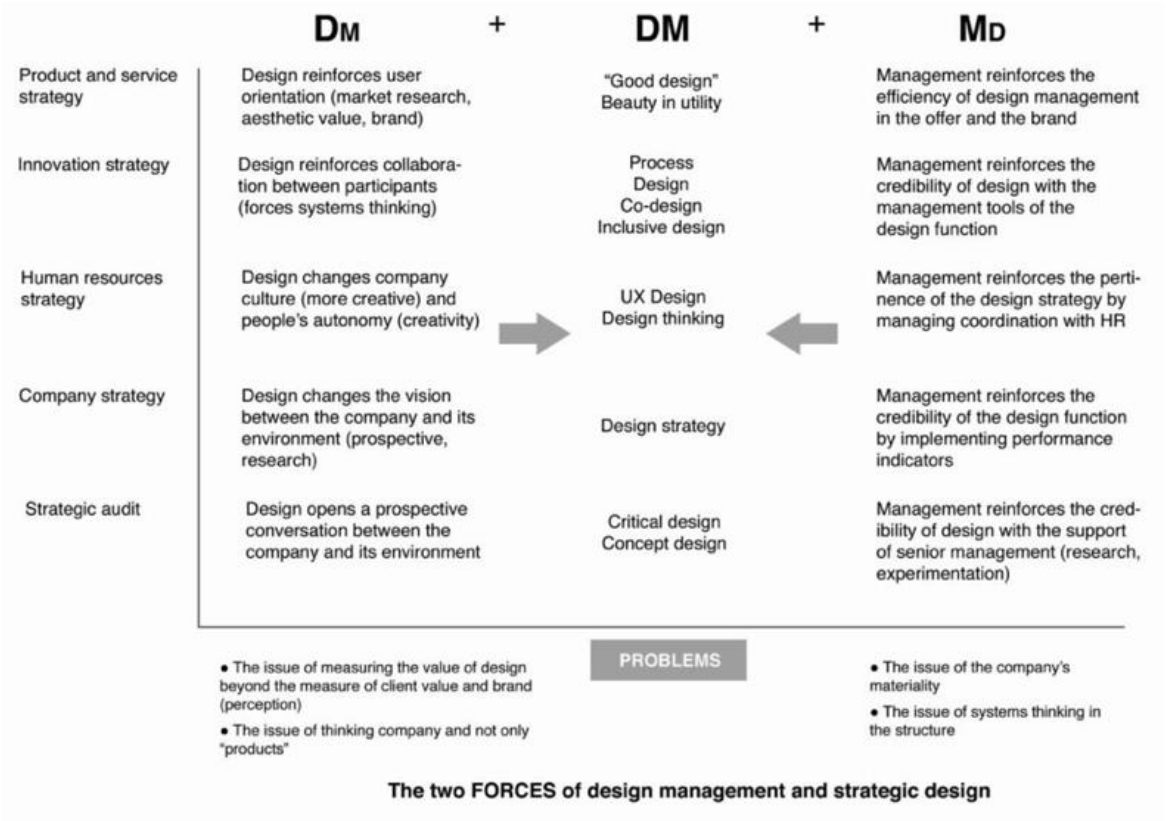
Another maturity model is the Danish Design ladder (Ramlau, 2004) that identifies four levels of the Design integration into a company: (1) the absence of Design, (2) Design applied to aesthetics, (3) Design applied to processes, (4) Design applied to strategy.

Design Management Europe (DME) (2009) proposed five criteria to evaluate the maturity of Design in an organization: the awareness of benefits, the embeddedness of the Design process into the organization's primary business processes, the planning (i.e., "the extent to which a company has developed a strategy for Design, articulated in business plans, and communicated widely"), the Design Expertise (i.e., the level of experience, skills, and knowledge as well as the existence of dedicated tools), and the Resources (i.e., the Design staff and investments of the organization in Design). What is implicit in all these maturity Design models is that when internalized within the organization, Design moves from aesthetics to the strategic conversation (Borja de Mozota, 2019), from R & D and communication matters to every company's function, up to the "CEO level." (Micheli et al., 2019).

2. Design Management

Design Management is at the intersection of Management and Design studies. According to Borja de Mozota (2001), who was among the first to consider Design Management, it is about two forces, on the one hand, Management of Design and on the other "Design in management" (cf. Figure 20). In other words, Design Management is about reinforcing Management through Design and working on Design integration in organizations. As a result, Design Management applies at several levels: the company strategy, the department sub-strategies (e.g., HR strategy), and the activities (e.g., New Product Development.).

Figure 20 – Figure from Borja de Mozota (2019) paper on a review of forty years of Design Management illustrating the two forces of Design Management

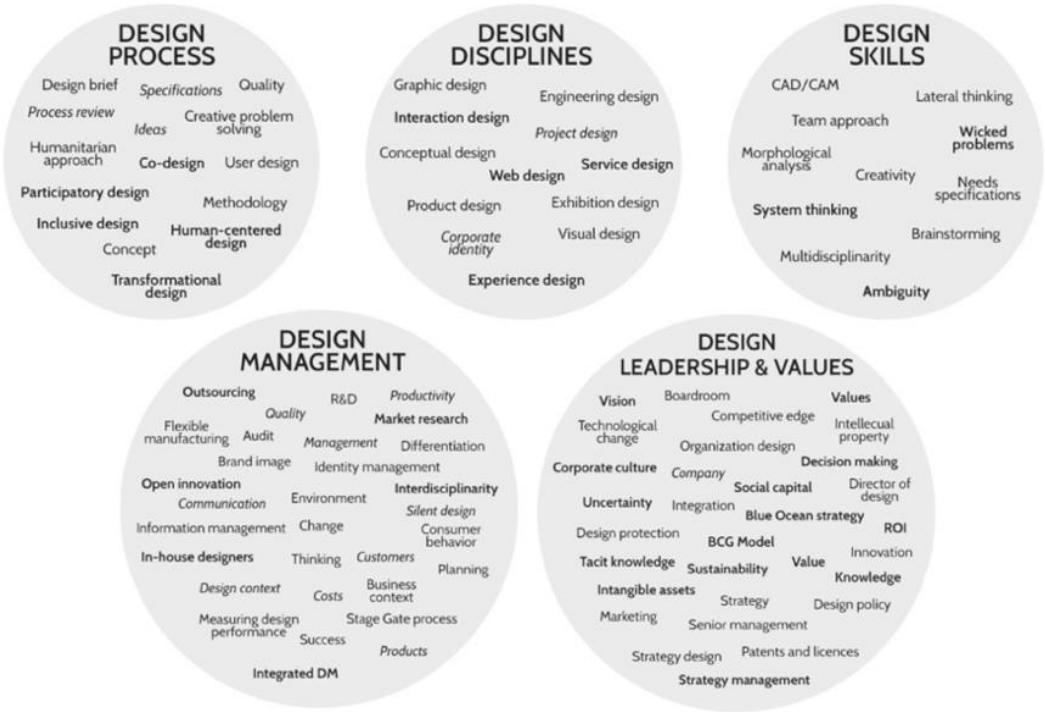


a. Management in Design (Managing Design)

One of Design Management's perspectives is managing Design in the organizations, especially in those who have integrated it and have developed Design capability. It means assessing the performance, building specific processes adapted to the organizational context, mapping skills, developing the expertise, and ensuring efficient interaction with the organization's rest. Borja de Mozota (2019) clusters words related to Design Management into five groups: Design process, Design disciplines, Design skills, Design management, and Design strategy and leadership (cf. Figure 21).

In this perspective, Design Management covers the establishment and operating of Design processes, the development of Design expertise and skills for the different Design disciplines needed (Graphic, Product, Service, etc.), and the development of a culture receptive to Design through a supportive leadership; in other words, these are all the aspects of an in-house Design capability building.

Figure 21 – Figure from Borja de Mozota (2019) paper on a review of forty years of Design Management illustrating "the words of Design Management."



b. Design in Management

Several authors (Verganti, 2009; Oakley, 1986; Kotler et Rath, 1984) suggest that Design and Management as practices share similar and complementary characteristics and thus could benefit from one another (Buchanan, 2015; Borja de Mozota & Wolff, 2019; Blaich and Blaich, 1993). Boland et Collopy (2004) contrasts the "Design attitude" and the "Decision attitude." Building on the convergences between Design activities and management activities, Borja de Mozota (2001) offers the concept of "designence." Buchanan (2004) advocates for embedding Design in management practices arguing it reinstates the human dimensions that engineering and process-driven cultures often neglect. Indeed, by targeting a better world and pursuing the improvement of existing situations, Design values changes. It is based on addressing ambiguity and uncertainties to reach renewal and progress. Design is close to strategy definition, innovation processes, and uncertainty management within organizations through these characteristics. Thus, bringing Design in organizations could enlighten the strategy and the decision making in unknown situations such as innovation processes (Hatchuel, 2001).

II. Strategic change and organizational capabilities for innovation

In this part, we explore how organizations build and renew their capabilities, probing Dynamic Capabilities theory as an effective way for organizations to address the need for strategic change to face ever-changing environments.

A. Strategic change and Organizational capabilities

Strategic change is about firms' ability to renew their competencies and resources in response to market dynamism and changes in their environment. This section starts by demonstrating the change imperative before laying out the organization's capabilities foundations.

1. The need for strategic change and renewal

Firms are faced with an increasingly complex environment. They seek new sources of differentiation other than price, mainly because of new players' appearance from emerging markets that are particularly cost-competitive. Danneels (2002) suggests that organizations need to continuously renew themselves and add new competencies to cope with this rapidly changing environment (Helfat, 2007; Leonard-Barton, 1992). Environment changes can be incremental or discontinuous. They are fostered by customers' needs evolution, technological, and competitors' innovations. Discontinuous changes present a more significant challenge for firms as it tests their ability to adapt radically (Birkinshaw et al., 2016). Work in innovation management has shown the need for established firms to explore radical innovations (Danneels, 2002), sometimes outside their core business to maintain their performance and competitive advantage (March, 1991; O'Reilly and Tushman, 2013). Numerous examples show that when established firms fail to adapt effectively, they die; for instance, Danneels (2011) exposes the case of the typewriter manufacturer Smith Corona. In other words, when focusing on exploitation without engaging in the renewal of resources and competencies or building new ones, firms decline because their resources become obsolete.

2. Organization capabilities to foster the strategic change

The investigation of how organizations can transform and reconfigure their processes or routines to face their environment is central to the field of Strategic Management. It relies on several constructs anchored in the Resource-Base View theory that we define in this part.

The capability view considers the organization as a place where inputs are transformed into outputs through activities. The transformation process interconnects resources intending to create value (Metcalfe et al., 2000). Resources are assets owned and controlled by a firm from which rent can be derived (Helfat and Peteraf, 2003). A firm's resource bundle's heterogeneity is seen as the competitive advantage premises (Barney, 1991). While new resources are crucial to firms, they are difficult to imitate and timely to build; once built, their development requires continuous efforts (Amit and Schoemaker;1993; Miller et al., 2002; Danneels, 2011; Börjesson and Elmquist, 2012). An organization's capability is a combination of intangible and tangible resources of different nature to reach the desired result (Grant, 1991; Amit and Schoemaker, 1993; Danneels, 2011; Börjesson and Elmquist, 2012). The firm competencies denote resource configurations to accomplish a particular task; competencies apply to various levels from the individual to the organization (Argyris and Schön, 1974). When applied at the organizational level, they are used as a synonym for capabilities (Danneels, 2011). Grant (1991) argues that *"resources are the source of a firm's capabilities; capabilities are the main source of its competitive advantage*." Zollo and Winter suggest that capabilities development is an incremental process. Börjesson and Elmquist (2012) show the lack of existing empirical contributions on how organizational capabilities are built and developed. Their paper offers insights from a case of capabilities development for innovation. They suggest the crucial role of learning and new knowledge creation in the process, referring to Argyris' research work (1977). They highlight the risk of lock-in and path dependency inherent to change when firms must abandon some practices and acquire new ones. They argue this requires a systemic change, implying the questioning of the assumptions on which the firms' existing structures, values, and norms are built upon. Such changes impact the routines and culture, contributing to the organization's transformation.

As stated before, part of the firm's ability to adapt and thrive in its dynamic environment resides in its innovation capabilities. Innovation capabilities are defined as the "organizational capability to innovate" (Börjesson and Elmquist, 2011). It deals with what makes a firm innovative, encompassing the efforts to increase innovation, manage it (Christensen, 1997), and support innovation strategies, such as a firm's ability to diversify its offer. Innovation capabilities are difficult to define. However, Börjesson and Elmquist (2012) offered a framework to help the understanding of Innovation capabilities through four components: the strategy, the resources (including knowledge, competence, networks, relations), the processes (e.g., organizational structures, managerial systems, ways of working), and the mindset (i.e., the values and norms, the culture, the decision-making process).

B. Ordinary vs. Dynamic Capabilities

Researchers distinguish two types of firms' capabilities to address the necessity of balancing the exploitation of existing competencies (ordinary capabilities) with the renewal imperative (Dynamic Capabilities). In this section, we focus on the literature about Dynamic Capabilities.

1. Dynamic Capabilities as routines

A stream of research building on a seminal article by Teece, Pisano, and Shuen (1997) suggests a distinction between two types of organizational capabilities. The ordinary capabilities, which are necessary for organizations to "do things right" and can be acquired or replicated. They include, for example, operations, governance, or administration. They are opposed to Dynamic Capabilities (DC), which enable organizations *"doing the right things at the right time."* They are considered of a strategic nature and need to be developed internally over time. In this seminal article, DC are defined as: *"the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments,"* i.e., the ability of an organization to orchestrate, link, and combine resources to address changes in its environment, drawing on competencies that are integrated and developed internally or identified externally. Through an orchestration of strategic resources, DC enable the achievement and maintenance of competitive advantage (Lorino and Tarondeau, 2015). In doing so, the firm develops a singularity over time, both in its characteristics and functioning (its routines and processes) (Depeyre and Mirc, 2007; Teece et al., 1997). Three categories of factors define the DC of an organization: (1) organizational processes that ensure the transformation of the organization, which may be routines or practices that allow for learning and flexibility; (2) the choices made that induce a trajectory over time, and finally (3) the organization's resources and the link to the external environment. Different types of resources can be distinguished: financial resources (e.g., short- or long-term financial assets that make it possible to finance the organization's activities), physical resources (e.g., locations, buildings, equipment), human resources (e.g., the expertise, skills, knowledge, and know-how of individuals), technological resources (e.g., machines, equipment, processes, patents, methods and information technology), organizational resources (e.g., specific processes, information), and the environment (e.g., the structures, informal and formal control/coordination systems in place within the organization to carry out day-to-day activities). DC involve five types of processes (Teece, 2018): (1) learning (e.g., communication, organizational knowledge, individual or group routines, new sources of learning), (2) creation of new assets, (3) transformation of existing assets, (4) co-specialization, and (5) orchestration of assets (by managers). Co-specialization corresponds to a unique combination of assets that is difficult to replicate but highly value-generating. Winter (2003) offers a temporal dimension to DC specifying the persistence over time as a key characteristic; he insists on distinguishing *"routine"* from "*improvisation"* and therefore exclude one-off intervention from the DC scope.

2. Dynamic Capabilities as a process

Eisenhardt and Martin (2000) corroborate Teece et al. (1997) while making some additions. First, they suggest that the characteristics and nature of DC vary according to the dynamism of the market: moderately dynamic markets, which present predictable and linear changes and established and known players, or high-velocity markets, which present changes that are neither linear nor predictable, and for which the players are changing. Second, DC correspond to specific and identifiable organizational and strategic processes that create value for firms in dynamic markets by arranging resources according to new strategies. This set of processes includes, for example, product development, strategic alliances, or strategic decision-making. Eisenhardt and Martin (2000) refer to IDEO, a famous Design agency, as an illustration for Dynamic Capabilities; they show the routinized "knowledge brokering" studied by Hargadon and Sutton (1997), *"managers routinely create new products by knowledge brokering from a variety of previous design projects in many industries and many clients."*

The relationship between internal resources and the external environment is at the core of the concept of DC, which is based on three key capabilities: (1) the ability to perceive threats and opportunities ("sensing"), (2) the ability to seize an opportunity ("seizing"), and finally (3) the ability to maintain competitiveness ("maintaining competitiveness"). Summarized by Depeyre and Mirc (2007), Wang and Ahmed (2007) identify three other capacities that echo those previously mentioned and that enable articulating internal and external orchestration: (1) the firm's absorption capacity, (2) its capacity to adapt, and finally (3) its innovation capacity. The first refers to the recognition and exploitation or assimilation of the value of external assets. The second refers to "sensing" and "seizing," i.e., the ability to identify and seize an opportunity in the market by striking a balance between exploration and exploitation. The last refers to developing new products or services and bringing them to market. Eisenhardt and Martin (2000) concede DC singularity and difficulties to replicate but moderate this affirmation inferring that "best practices" exist, i.e., commonalities between the DC of different firms. They state:

> "Just as there are better and worse ways to hit a golf ball or ski a mogul field, there are more and less effective ways to execute particular Dynamic Capabilities such as alliancing, strategic decision making, and knowledge brokering. In popular parlance, there is 'best practice.'" (P., 1108).

The following table (Table 4, next page) offers a synthesis of the two views on Dynamic Capabilities that coexist.

Table 4 – Two views on Dynamic Capabilities from seminal articles

Researchers	Teece et al. (1997)	Zollo & Winter (2002)	Eisenhardt & Martin (2000)	Danneels (2002, 2008)
DC are…	ROUTINES		PROCESSES	
Definition	"the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments."	"routinized activities directed to the development and adaptation of operating routines" in pursuit of "improved effectiveness."	"a set of specific and identifiable processes such as product development, strategic decision making, and alliancing. The outcome is dependent on market dynamism."	"the ability to identify, evaluate, and incorporate new technological and/or customer competencies into the firm."
View	DC are based on a particular skill development that becomes an organization-specific ("signature practices," Birkinshaw et al., 2016) routine and enables the learning of new routines. Three are necessary: "Sensing & shaping opportunities& threats"; "Seizing opportunities"; "Maintaining the firm competitiveness" through adequate resource management."	Winter (2000) refers to routines as a learned behavior "highly patterned," which means repetitive that incorporates tacit knowledge.	DC rely on a company-specific process that can be organizational and/or strategic and transforms the organization's other processes.	"the mechanisms by which firms create, integrate, recombine, and shed resources" and "help firms to mitigate path dependencies in their development, escaping from the trap laid by their current competences."
Outcome	Predictable		Dependent on the market dynamism, either predictable (when markets are stable) or unpredictable (when markets are volatile)	
Competitive Advantage	in this view, the competitive advantage is based on VRIN (Valuable, Rare, Inimitable, Non-substitutable) resources compose the capabilities.		"A long-term competitive advantage lies in the resource configurations that managers build using Dynamic Capabilities, not in the capabilities themselves."	
Examples	Cite Toyota's lean production as an example of what DC are.	Cite continuous improvement routines, acquisitions or joint ventures expertise development, and the adaptation of "post-acquisition integration processes" as examples of DC	Cite various processes they consider as DC, such as "Product development," "Alliancing," and "Strategic decision making." They mention Intel, a technological firm, as an example of firms whose managers work on developing such processes to survive, quoting the slogan they promoted: "only the paranoid survive."	Investigation of the New Product Development process In high-tech or technological firms

3. Refinement of the Dynamic Capabilities concept

Beyond the initial distinction made between ordinary operational capabilities and Dynamic Capabilities, several were built on the DC concept offering alternative terminology to reflect on it. King and Tucci (2002) replace the word 'capabilities' with 'routines' and shed light on the change dimension in the people's experience opposing static and transformational experiences. Birkinshaw et al. (2016) oppose the "dynamic" nature of capabilities required in a fast-moving environment to the "basic" capabilities sufficient in a slow-moving environment. They insist on the pace of environmental change and the complexity of Dynamic Capabilities instead of simple procedures. They also build on the concept of ambidexterity and Teece's decomposition of DC in sensing, seizing, and reconfiguring: they associate the "sensing" capability with exploration, and the "seizing" with exploitation, arguing those are lower-order capabilities. In contrast, the ability to reconfigure resources involves changing processes to allow sensing and seizing. Danneels (2002) distinguishes between "first-order competence" as low order capabilities and "second-order competence" as high order capabilities. Some authors suggest the existence of a third-order they call higher-order (Collis, 1994; Winter, 2003). Winter's (2003) first-order competence corresponds to Danneels' (2002) and Collis' (1994) second-order one. The following table (Table 5) offers a synthesis of the various distinctions :

Table 5- Refinement of the Dynamic Capabilities concept

Teece et al. (1997)	Birkinshaw et al. (2016)	King and Tucci (2002)	Danneels (2008)	Collis' (1994)	Winter (2003)
Ordinary (Operational) capability	'basic' lower-order capabilities as simple procedures sufficient in "slow-moving environments." (sensing and seizing)	'operating routines' ('static experience')	First-order competence The exploitation of existing competence	first-order (a skill at performing a particular task)	"ordinary or 'zero-level capabilities." ('make a living in the short term)
Dynamic Capability (sensing, seizing, reconfiguring)	"dynamic" higher-order capabilities for a "fast-moving environment." (reconfiguring)	'change routines.' ('transformational experience')	Second-order competence the ability of a firm to build new competencies (first-order competence)	Second-order ("a skill at learning new tasks: improvements of first-order capabilities") and third-order (the skill of preceding competitors)	First-order "Dynamic Capabilities" (operate on ordinary capabilities) "extending, modifying, or creating."
				higher-order (meta-capabilities) "learning to learn."	"higher-order capabilities." (operate on the first-order capabilities)

C. Building Dynamic Capabilities

After having presented the DC concept and its refinement, we focus in this part on the building of such capabilities.

1. Limits to the Operationalization of the Dynamic Capability concept: a need for empirical settings

Despite a comprehensive literature providing examples of Dynamic Capabilities such as R&D Capability, Innovation Capability, New Product Development Capability, Alliancing, and Acquisition Capability, Environmental Scanning Capability, Knowledge Development/Learning Capability, Marketing Capability (Inan & Bititci 2015), empirical research studying them in practice are scarce. This is one of the prominent critics of the DC perspective. Further case-based research is advocated for, especially as they seem to be company-specific, "dependent on the firm heritage and context," and "no universal set of DC" exists (Teece et al. 1997; Birkinshaw et al., 2016). While the contingency of capabilities is debated, Prahalad and Hamel (1990) argue any capability is indeed complex and "context-dependent" due to their "ambiguous nature" and the "tacit and social character of productive knowledge."

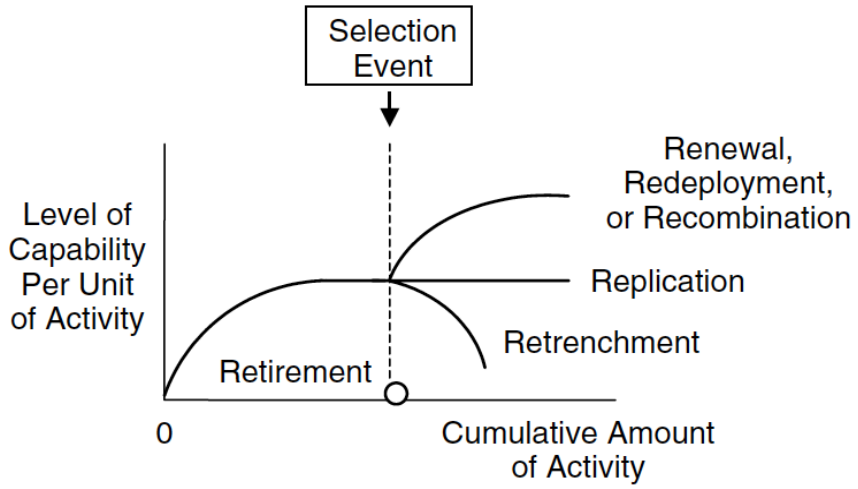
Some researchers suggest that DC are underspecified and compare the concept to a black box calling for empirical settings to explore how they are exercised and how they alter the organization (Danneels, 2011) in addition to how they are built (Börjesson and Elmquist, 2011). Those expected illustrations of DC in practice would add to the recent studies on Smith-Corona (Danneels, 2011) and on IBM (Harreld et al. 2007) according to whom DC are not only an academic concept but also a practitioner reality, *"a concrete set of mechanisms that help managers address the fundamental question of strategy, which is to develop a truly sustainable competitive advantage."*

2. Understanding how Dynamic-capabilities are built

Dynamic Capabilities are about learning and developing new competencies that can replace, modify, or enrich organizational processes or routines. While Winter (2003) suggested that DC are born, not made, other researchers disagree and study managers' "deliberate efforts" for the intentional development of such capabilities (Vera & Cepeda, 2007; Danneels, 2008). One of the challenges to overcome for the deliberate development of DC is, according to Danneels (2011), the difficulty for organizations to define their capabilities: *"organizations often lack a well-articulated understanding of their own capabilities."* Based on studies of technological firms, he distinguishes among the first-order competencies that he considers as low order capabilities two categories, i.e., the customer and the technological. This distinction could open the way to identify better firms' capabilities.

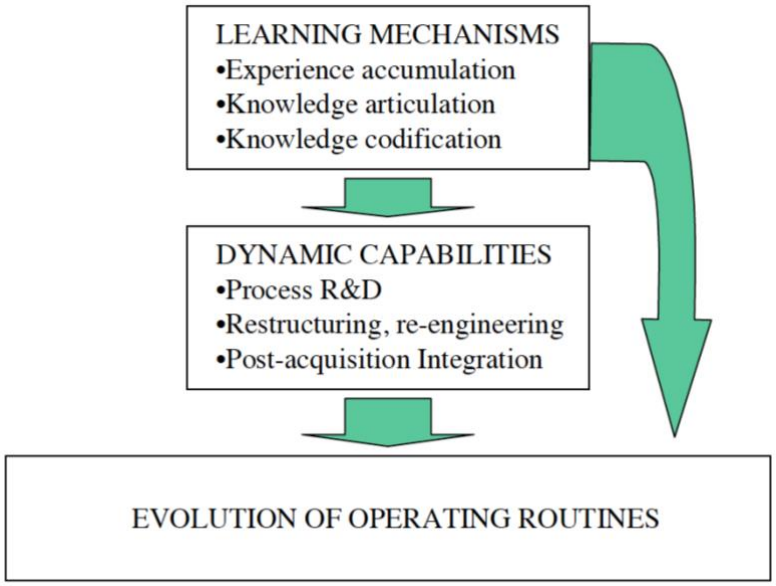
According to Helfat (2007), DC are built up incrementally, over time, through successful or unsuccessful attempts, acknowledging the existence of a capability-building process. This corroborates Helfat and Peteraf's (2003) findings in a previous study in which they propose the capability lifecycle (CLC) framework. They argue that organizational capability develops over a classical sequence of steps (founding, development, maturity) and outline six possibilities of evolution, they call "the Lifecycle branches: six Rs of capability Transformation" as illustrated in the following figure (Figure 22) extracted from their paper.

Figure 22 - The Lifecycle branches: six Rs of capability Transformation by Helfat & Peteraf (2003)



On the other hand, connecting DC with organizational learning, Zollo & Winter (2002) suggest that DC are built through learning mechanisms and that they result in the evolution of the operating routines, as Figure 23 extracted from their paper demonstrates:

Figure 23 - Zollo and Winter (2002) mechanisms behind the evolution of operating routines.



Indeed, organizational learning is an organization-wide process of learning new knowledge and anchoring it into new routines. According to these authors, DC are built via the accumulation of experience that helps individuals better understand “the causal linkages between actions and outcomes." They underline the three learning mechanisms' necessary co-evolution: “tacit accumulation of experience, knowledge articulation and knowledge codification processes” as a condition for the capability emergence. They insist, as Eisenhardt and Martin (2000), on the necessary process of knowledge codification to “capture the tacit knowledge embedded in individuals' experiences about how to manage key activities.” Bingham et al. (2007, 2015) refer to the codification of knowledge as the starting point of learning that drives DC emergence. Danneels (2008) also refers to organizational learning theory to explain second-order competencies that he considers high-order Dynamic Capabilities.

III. Research framing

We grasp from our literature review four areas to build our exploration. Those are presented as the research foundations. Underlining the limits of the existing knowledge in each area, we introduce our research question.

A. Research foundations

This research is based on four aspects of Design in the context of organizations' transformation found in the literature's current state.

1. Design in the context of non-Design intensive organizations

Since the integration of Design in organizations for communication, marketing, and mass production purposes in the 1950s, new Design orientations emerged with the development of new fields of problems. Digital Design and Strategic Design enrich the historical Industrial Design practices. Consequently, Design climbed the Danish Design Ladder steps, moving to a strategic level in some organizations where it preexisted. Besides, as the democratization of Design Thinking grew Design awareness, appeared for the first time in organizations. In 2019, a study on the Top 500 SME in Scotland, building on Buchanan's four orders of Design (communication, product, interaction, integration), showed the growing trend of Design integration outside the industrial sector through in-house Design teams development (Aitchinson et al., 2019). Design progressively moved from product and technological firms belonging to the industrial sector to organizations of service and public sectors. Design found its way in non-Design intensive organizations, i.e., organizations that were not familiar with it before and never adopted it. Since Design-driven organizations outperform non-Design intensive organizations, and that such organizations face an ever-changing environment and market dynamism, i.e., growing threats such as newcomers, new standards, and changes in the economy, they turned to Design to foster innovation and competitiveness and realize a strategic transformation. Indeed, the value of Design for an organization, primarily through innovation, has been widely studied, as well as the financial benefits it drives. Furthermore, new issues regarding firms' performance, such as ethics, meaning, and purpose, seem to be aligned with Design values. This potentially intensified the trend for Design integration. We showed in the first part of this chapter the extent of this phenomenon in recent years.

However, many studies on Design are focused on Design agencies or in-house Design in industrial firms. While this was essential to build an understanding of Design in use, further investigation of the use of Design in another context, such as service, could shed new light on the motivations behind Design integration and the evolution of the practice. This underlines the avenue for a better understanding of Design integration pathway in non-Design intensive organizations.

2. Design integration investigated from the capability perspective.

We exposed the difficulty surrounding Design definition; several works reduce Design to an approach, a process, or a function, to name a few. We highlighted that the word has different meanings and that Design use in organizations can take various forms. It can be a one-off contribution within a project or a long-term endeavor that leads to Design integration. Wrigley et al. (2020) suggest the former often opens the way to the latter. Organizations opting for Design integration can choose to develop alliances with Design agencies or have minimum internal Design resources, enabling efficient outsourcing of Design work for projects, training their employees on Design process, or creating their own Design organization. Indeed, outsourcing Design could be risky and complex and necessitates minimum Design knowledge (e.g., selecting and managing external designers, assessing or orientating the work) (Le Dain et al., 2019). Hence, when considering Design integration, whether through outsourcing (externalization strategy) or building an in-House capability (internalization strategy), organizations have to develop internal expertise and Design management practices. Integrating Design and managing results in the development of Design expertise that can be of benefit and value for the Management of the organization, leading to the second force of Design Management beyond managing Design, i.e., Design for Management (Borja de Mozota, 2018).

The work on Design integration in organizations is mainly comprehensive and focused on the characterization of Design through the practice in projects or the relation of practitioners to other stakeholders. Jelinek et al. (2008) invited researchers when looking at Design to consider "who is designing, what is being designed, the motivations and context." We showed Design integration manifests in multiple ways: design practitioners, approaches, specific mindsets, strategies. Therefore, we argue for an investigation of Design as a capability, especially an innovation capability.

Indeed, the capability perspective encompasses the strategy, the processes, the resources, and the mindset (Börjesson and Elmquist, 2012). Putting this framework in perspective and relying on the work of Lawson and Samson's (2001) and O'Connor's (2008) work, Carlgren (2013) showed the role of Design Thinking in an organization's innovation capabilities. This is consistent with the literature on Design integration in organizations mentioned previously. It suggests that Design is an innovation capability: it is a capability because it implies a configuration of resources such as processes, methods, knowledge, and attitudes that contributes to the innovation of the organization.

Beyond this perspective of Design as a capability, there is no clear description in the literature of what it is composed of. The literature highlights the difficulty of defining a capability due to the lack of empirical studies. Hence, we will seek to define in-House Design capability through an exploration of Design manifestations in the context of a non-Design intensive organization.

3. Design as a Dynamic Capability: a transformational role

Some researchers suggest that Design is a Dynamic Capability (Dong et al., 2016; Rosensweig, 2011; Jevnaker, 2000). Dynamic Capabilities outline the firm's ability to renew its competencies and adapt to change in a turbulent environment (Teece et al., 1997; Eisenhardt and Martin, 2000; Danneels, 2002). This means it has an impact on the firm's operational capabilities and core competence. Previous contributions showed that building an in-house Design capability impacts the organization and induces changes but raises challenges (Cooper et al., 2011). Design coexists with existing practices and processes; thus, designers have to take them into account; they have to deal with the organizational legacy (Junginger, 2015). Carlgren et al. (2016a) pointed as well to the challenges encountered when using Design Thinking. In short, Design as a capability can play a role in the changes required to face a dynamic environment. Still, Design integration comes with challenges, as it conflicts with the existing practices it aims to change. Therefore, there is a need to explore how Design induces changes in the organization and how it contributes to the firm's broader strategic transformation. How can Design as a Dynamic Capability enable such transformation?

4. Building in-house Design Dynamic Capability: an empirical view of the challenge

Training employees, hiring skilled individuals, or both is insufficient to build an in-house Design Dynamic Capability. The organization needs to learn Design, develop its custom-made Design expertise that cannot be replicated (Jevnaker, 2000). Contributions on capabilities show its contingency nature, i.e., non-replicability and necessary adaptation to the context. It requires experience and organizational learning. Several researchers insist on the learning dimension for Dynamic Capability building. We intend to provide insights on Design capability-building and development trajectory.

The study of Design integration and considering Design as a Dynamic Capability offers a unique opportunity to shed light on Dynamic Capability-building, providing an empirical setting that are lacking. This answers the call for further investigation of the phenomenon and the empirical grounding of Dynamic Capabilities theory. It would contribute to the ongoing debate about how Dynamic Capabilities are enacted and manifest in organizations and how to build this capability in an organization.

B. Research focus

As a recap, literature in Management on Design, Innovation Management and Strategic Management offer a theoretical frame for our exploration that provides an understanding of the context and aims to integrate Design and develop an in-house Design capability (see Table 6).

Table 6 - Theoretical framing of this research

Existing fields of knowledge	Contributions from			Aiming for…
	Design studies	Innovation management (Design-related)	Strategic management (non-Design related)	
1. Design in the context of non-Design intensive organizations	New fields for Design application (Buchanan, 2015) In-House Design profiles in various sectors (Aitchinson et al., 2019) Danish Design Ladder Design value	Design thinking use Design value for innovation Design as a professional practice (ethos) Design purposes and context (industrial context, digital transformation, strategic)	Strategic change imperative (Prahalad & Hamel 1994)	a better understanding of non-Design intensive organization pathway to Design integration.
2 – A capability perspective on Design integration	Internalization/ Externalization (Hemonnet-Goujot et al., 2019) Design organization	Design adoption (Wrigley et al., 2020) Design Management (Borja de Mozota, 2018)	Börjesson and Elmquist (2012) innovation capability-building and change imperative	A definition of an in-House Design capability through an open exploration of Design manifestations in the context of a non-Design intensive organization
3 –Design as a Dynamic Capability: a transformational role?	Design as a Dynamic Capability (Dong et al. 2016; Rosensweig, 2011; Jevnaker, 2000) Organizational legacy (Junginger, 2015)	Adoption of Design by firms (Cooper et al. 2011; Carlgren et al. 2016; Beckman and Barry, 2007; Liedtka, 2015; Wrigley et al. 2020; Björklund et al. 2020; Knight et al. 2020; Dell'era et al. 2020) Design as an innovation capability (Carlgren, 2013)	Dynamic Capabilities (Eisenhardt & Martin, 2000; Danneels, 2002, 2011; Winter, 2003; Teece et al., 1997)	An exploration of how Design induce a change in the organization, the type of changes, and how it contributes to the broader strategic transformation of the firm
4 - In-house Design Dynamic Capability-building: an empirical view of the challenge	the custom-made Design expertise that cannot be replicated from a Design champion (Jevnaker, 2000)		Learning perspective Dynamic Capability contingency and building process (Zollo & Winter, 2002; Danneels, 2008)	shedding light on Dynamic Capability-building, providing an empirical setting, and explore Design integration trajectory
Key journals	*She Ji* *Design Management Journal* *Design Issues* *Design Studies* *The Design Journal* *Sciences du Design*	*Journal of Product Innovation Management* *Creativity & Innovation Management, California Management Review* *Revue Française de Gestion* *Research-Technology Management* *Harvard Business Review*	*Strategic Management Journal*	

Based on this framing, we define the purpose of this thesis as follows: an empirical exploration of in-house capability building, for Design integration, in the context of non-Design intensive organizations, to better understand what in-house Design capability encompasses, how such a Dynamic Capability is built, and Design role in the renewal of the organization competences.

Thus, we will address three sub-questions :

- RQ1: What does a Design capability encompass?
- RQ2: How is Design capability built and developed in an organization not used to it?
- RQ3: How does Design capability transform the organization?

It relies on the exploration of an organization integrating Design as a strategic lever for change. Indeed, we explore this question in a French insurance company that is non-Design intensive (new to Design) and operates in a non-Design driven sector. This firm has developed Design capability as part of its strategic transformation.

The next chapter unfolds our methodological choices and approach to explore this research question.

Chapter Three

In the previous chapter, we displayed the theoretical framing of this research. This one exposes the methodological choices and epistemological stance.

This doctoral research has been carried out at the Management Research Center ("Centre de Recherche en Gestion," CRG, part of the Interdisciplinary Institute for Innovation, i3) of Ecole polytechnique, part of the Institut Polytechnique de Paris (IP Paris). It follows on from a longstanding tradition of qualitative and abductive research (Girin, 1989; Dumez, 2016). First, we explain why we opted for a qualitative approach and a longitudinal case study with an action-research setting based on an immersion in the field (MAIF) for over forty months. Then, we give an account of the research journey. Second, we offer a reflection on the knowledge produced, display our data collection and analysis processes, and discuss the research quality and results validity.

This chapter pursues two objectives. The first is to present the research Design choices to enable a discussion and critique of the data and their interpretations in light of the knowledge produced. The second is to explicit the relation of the researcher to the field, central to knowledge production.

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I. Research Design

A. Research context

B. Research approach and method

C. The Research journey

II. The knowledge production

A. Data collection and analysis

B. Results validity and overall research quality

I. Research Design

In this first part, we present the methodology and the approach used in this exploratory research. We introduce the context in which the research project emerged and that influenced the Research Design. We also provide an overview of the research journey that enlightens how the study was built through iterative loops.

A. Research context

1. A Ph.D. embedded in the field

The research has been conducted under a CIFRE contract that enables the immersion in the field. CIFRE is an acronym that stands for "Convention Industrielle de Formation par la Recherche" and translates into Industrial Convention for Education through Research. It is a three-year contract between a research center, a company, a Ph.D. student, and a governmental agency ANRT (National Agency for Technological Research) supervising it. It contributes to developing public-private research partnerships and enables the Ph.D. student to benefit from immersion and access to data necessary for the research. Furthermore, it ensures the study's relevance for the business world and thus contributes to the student's employability. The student's time and activities are split between the field, i.e., the company, where he/she is considered an employee, and the laboratory. The immersion in the field facilitates access to the data. Still, it proves to be a challenge in several aspects, such as the researcher's positioning in the organization, the relation to the data, and the necessity to put things into perspective.

2. A Ph.D. part of research programs on Design and innovation

This thesis is part of a consortium focused on the study of Design in relation to the Experience economy. This consortium has been forged and driven by Exalt Design Lab, a research team part of Strate, Design school, in Paris Area. It brings together five industrial partners hosting each a Ph.D. student. Researchers in management sciences, in information and communication sciences and in Design, supervise these theses (see Figure 24). The industrial partners of Exalt Design Lab (Carrefour, OTIS, MAIF, InProcess, and E-Makina) meet on bi-annual events. The first two are currently in the process of Design integration or Design development. InProcess and E-Makina are two Design agencies.

The topic of Design integration in organizations for innovation purposes contributes to the "Theory and Models for Design" research program of the Interdisciplinary Innovation Institute (i3) and the "Strategies of innovation and Design systems dynamics" research program of the Management Research Center. These multiple affiliations (see Figure 25) have been an asset since the research work

has been presented frequently in various working groups: at the meetings of the Exalt Design Lab partners, at the doctoral days of the Interdisciplinary Institute of Innovation (i3), as well as in the management research center. In addition to these presentations, we took part for two years in a specific working group dedicated to Design and open innovation. This working group named 'IDEO' as the acronym for "Innovation and Design in Open Environments" and, in a nod to the renowned global Design firm brought together Ph.D. students working on innovation and their supervisors. The group gathered monthly to exchange on similar problems explored in different empirical contexts, share common bodies of literature, and confront early research orientations.

Figure 24 - Exalt Design Lab Team Chart showing Ph.D. students affiliation

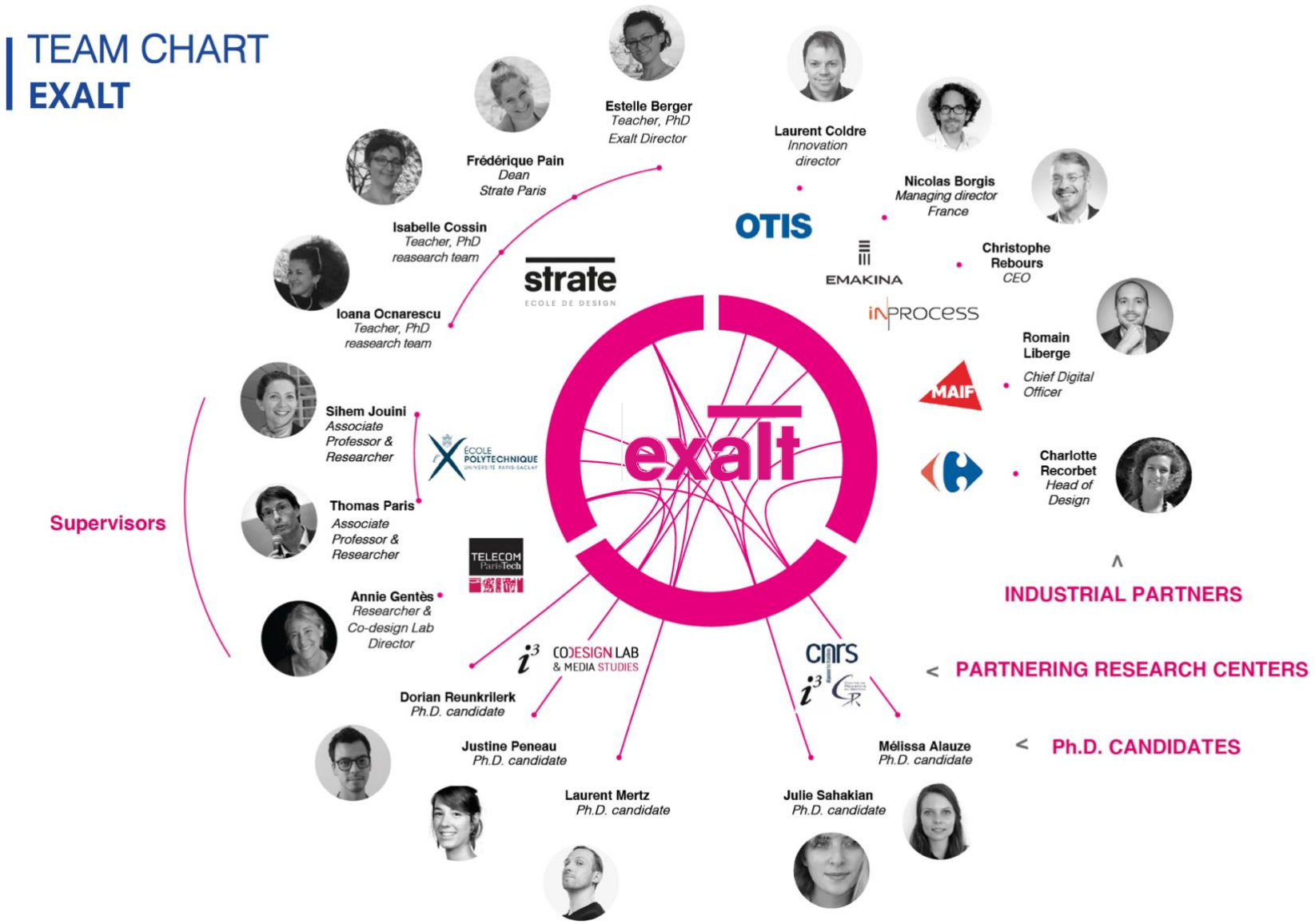
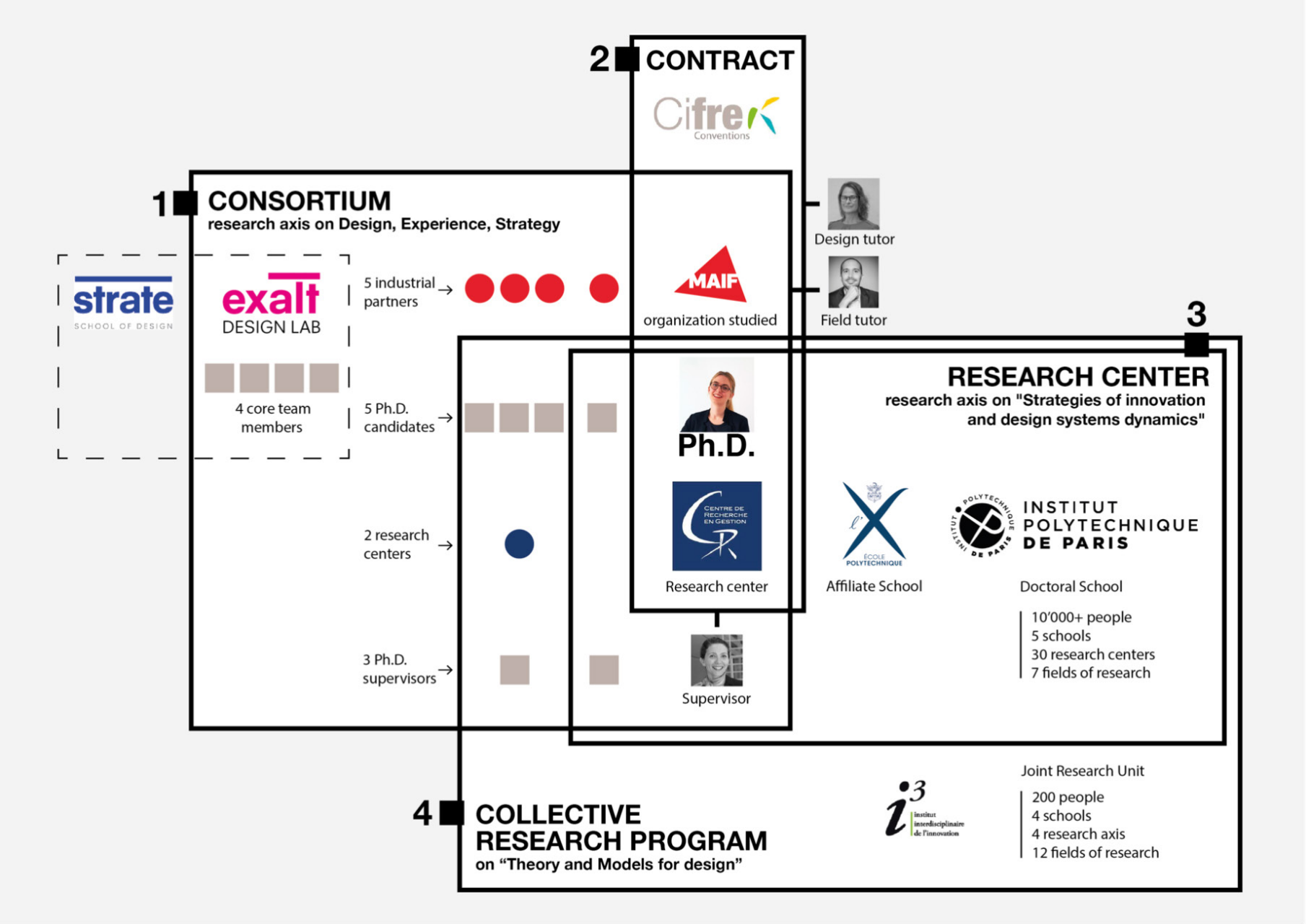


Figure 25 - The multiple affiliations of this doctorate research



3. A personal journey in Design and Management: from a multidisciplinary to an interdisciplinary approach

With a dual degree in Design from "Strate, School of Design" and in Management from "Grenoble Ecole de management" a Business School, I have had the opportunity as an intern to experiment with Design within Design agencies as well as in non-Design-intensive organizations. In the latter, I faced several challenges that were at the origin of my research interest. The first challenge was to capture interlocutors' interest beyond the widespread understanding of Design as an aesthetic provider; the second was the difficulty of combining Design and Management in practice, as the former partially conflicts with organizational processes and cultural aspects. This struck my interest, and I engaged in this Ph.D. to make sense of those experiences, understand the phenomenon I faced, and learn how to cope with the challenges encountered, to be better equipped in the future. The CDO's convincing pitch about transforming MAIF into an Experience company, the firm's commitment to social innovation embodied in an atypical governance model, and their partnership through their brand-new concept store (MAIF Social Club) with researchers such as Edgar Morin motivated me to carry this research at MAIF. I see this doctorate research as the starting point of a research journey. It provided me a unique opportunity to contribute to a growing community of researchers studying Design in innovation and Strategic Management. I aim to contribute to Design and Management education while assuming a dual role of practitioner and researcher in the industrial context.

B. Research approach and method

This qualitative research is case-based. It has been carried out for exploratory purposes. The researcher has played an active role in the field. In this part, we explain why and how these choices were made.

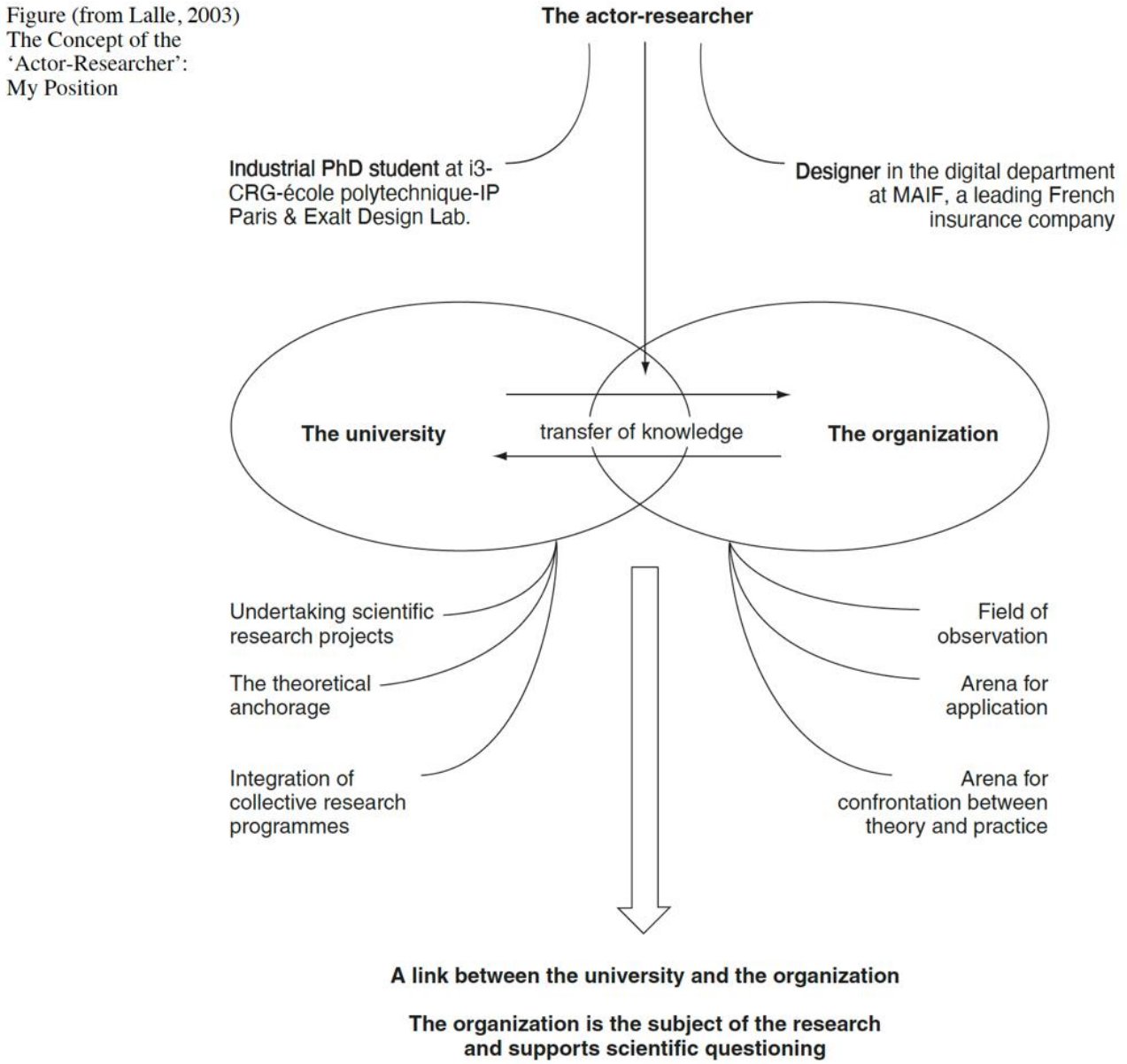
1. A longitudinal action research to study Design capability development

The challenges faced by MAIF's CDO discussed with Exalt Design Lab founder opened a research opportunity. It arose from the alignment between the practitioner's needs and our interest as a researcher. Once this opportunity was identified, we had to define the field of research and decide on the best ways to interact with it. We chose to go for an action-research setting (Lallé, 2003; David, 2002, 2012; David et al., 2000) under a CIFRE contract. This seemed appropriate in response to the practitioner problem statement and our research objective that involved understanding how Design can be integrated and developed within firms that are not familiar with it. It gives a unique position to build and collect data and contribute and observe the transformation in progress.

a. My position in the field and my operational contribution

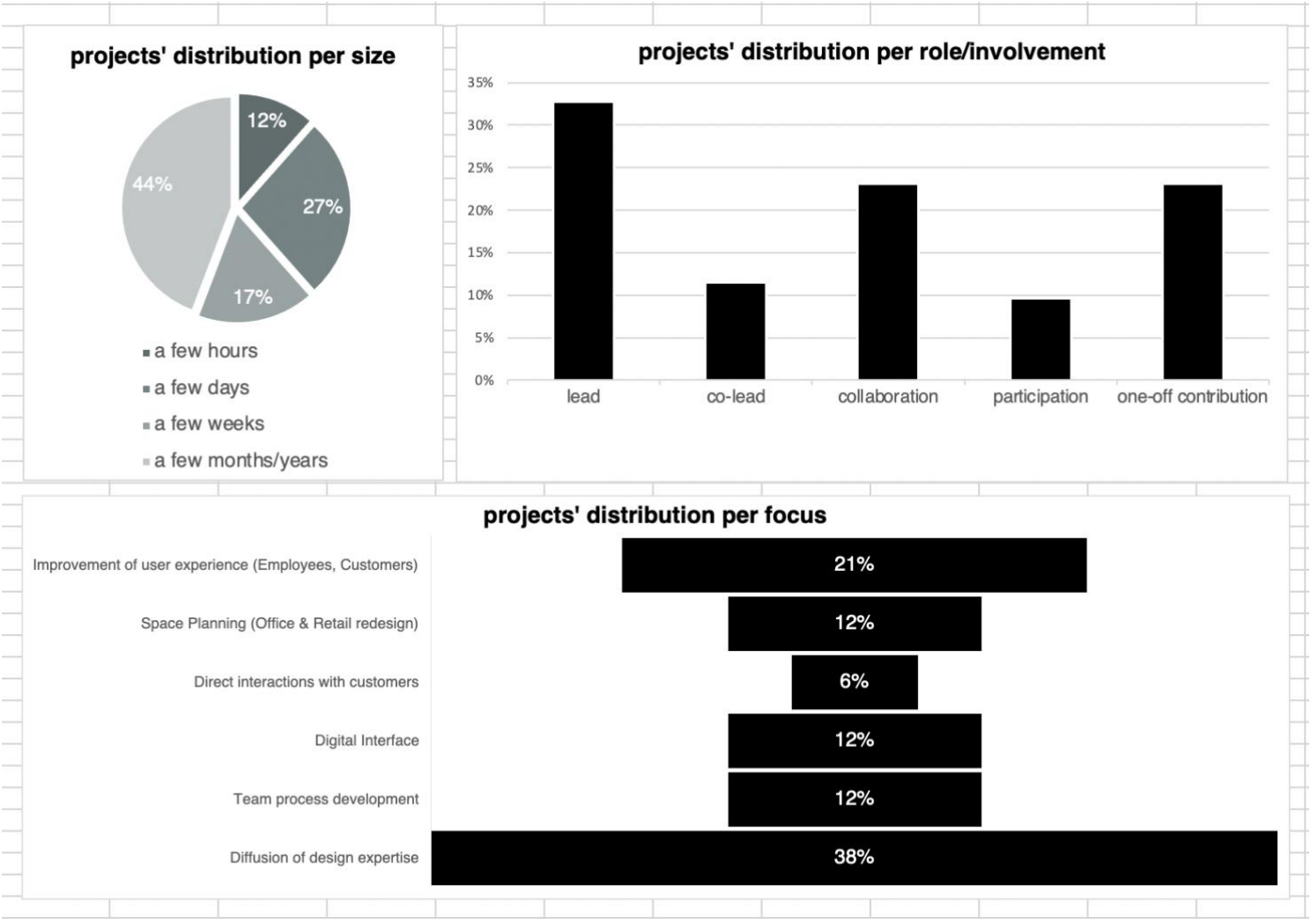
With a background in management and Design, I joined the firm as a designer and Ph.D. student in a Design innovation catalyst role (Price et al., 2018), defined as a role to help building Design capability from within. In the action-research approach, the researcher contributes to the operational activities. It leads to transformative research (Lallé, 2003). This action-oriented inquiry (Bradbury-Huang, 2010) combines a practitioner contribution that corresponds to the participation in the projects and the activities of the firm as a regular employee, with a research agenda that includes dedicated time for research work (e.g., data analysis, reports, memos, reading and writing of papers and participation in conferences). I adapted the following figure (Figure 26) initially produced by Lallé (2003, *Figure 1, p.6*) to describe the action-researcher role and offer a view of the approach with the actor-researcher dual status.

Figure 26 - Lallé's (2003) representation adaptation used to describe my position in the field.



Action-research is about turning learnings from actions and studying those actions and their effects. It fosters changes in the organization as well as new knowledge. It is cyclical. The researcher works with participants toward knowledge creation through action. Over the forty months of immersion, I participated in 52 projects out of the 147 in total conducted by the team I belonged to. Those "projects" range from less than a day (39%) to several months (44%) work. I took part in projects of Office space, Digital Interfaces, Customers interactions, and Experience Design. I was an active contributor to more than half of all the projects aiming for the development of Design and processes within the firm while they represented 12% of the total projects. 38% of my contributions were centered on Design diffusion, which includes the elaboration and distribution of Design training. I had a leading or co-leading role in almost 50% of the projects, part of the teams in 25%, and occasional help in the 25% remaining. The following charts (Figure 27) show the distribution of projects per role, focus, and size.

Figure 27 -Overview of my contribution to the field as designer and Design innovation catalyst with the distribution of the 52 projects per focus, size, and involvement type.



b. Benefits and risks of my position in the field

In this study, the action-research approach has been combined with a broader organizational ethnographic approach. Organizational ethnography is about *"understanding others' perspectives by attending to their context and practices as much as what they say"* (Fayard, 2017). Thanks to my position and extended immersion in the field, I had access to confidential material, to a variety of artifacts, participated in some projects, and in meetings for the sole purpose of observing and analyzing the actors in action. This helped in the understanding of the development of Design and led to the formulation of a model. Our setting can be associated with the "hired hand" position that Fayard and Van Maanen (2015) studied. It deals with organizations that welcome a researcher (to be) as a full-time employee to examine and contribute to a particular topic in an ethnography approach. The various understandings of the writings and the representations as the research goes by may help make the intangible tangible, triggering new ideas or shaping decisions. More than a set of methods, Fayard (2017) argues ethnography is an epistemic stance.

Girin (1989) underlines the risks of this particular position in the field while evidencing the approach's richness and promoting it. It confers the researcher a special status that may bias the relation with the organization's members and lead to an alteration of the quality of the observations. Indeed, in light of this status, actors may feel more or less inclined to share and potentially hide flaws and other key elements. He invites researchers to pay attention to this risk and rely more on investigation behavior, active listening, and opportunism instead of strictly following a planned route and relying on conversations and interviews.

2. An exploratory and abductive qualitative approach

This research aims to understand the motivations, the role, integration, and development of Design in an organization that is new to it as part of its strategic transformation. In other words, it focuses on understanding the dynamics of Design in the organization and its impact on the transformation. As such, a qualitative approach based on a case study seemed highly appropriate. Indeed, this methodology is ideal for exploration as part of a comprehensive approach, for theory building purposes, and to closely study the dynamics of a complex phenomenon (Dumez, 2016; Eisenhardt, 1989; Yin, 2003). Unlike a positivist approach and a quantitative methodology, the objective is not to test a theory or validate concepts; the aim is to explore a phenomenon to build a new understanding of it through its study. Qualitative methods are particularly suited for investigating and understanding interactions in complex social contexts, where the boundaries between the phenomenon and the context are unclear (ibid). However, Dumez (2016) pointed to three risks inherent in the qualitative research to avoid: (1) the risk of abstract actors, (2) the risk of circularity, and (3) the risk of equifinality. The first one refers to the disappearance of actors from the analysis. With this in mind, properly defining the analysis units is essential. The second one is about the applicability semblance of

any theory or concept to explain one phenomenon. It calls for a pre-processing of the rich data sets to avoid the confirmation bias consisting of finding the facts we may be looking for, disregarding more interesting others. The last one is about identifying multiple potential explanations or causal processes for the same observation or turn to counterfactual reasoning to find the best fitting theory that may differ from the most obvious one. We have considered these risks in our work.

This research project is based on an in-depth longitudinal field study (Voss et al., 2002; Perks and Roberts, 2013). The data collected in this approach include "thick descriptions" (Geertz 1998; Dumez 2016) that recounts the behaviors in context, the various states through which an organization evolves, and narratives that focus on changes and disruptions. The knowledge created through the inquiry in the field is nurtured by iterative loops between theoretical concepts and the researcher's empirical material. Consequently, we argue that this research is primarily based on an abductive approach. Such an approach enables the researcher to adapt the research course to unexpected ways that present themselves. The research starts with a focus adapted along the way when the researcher is faced with discoveries that open up research opportunities. One focus leads to another. The serendipity phenomenon brings up a new potential focus of interest in the research. Digging into new foci, the researcher progress toward the understanding of the phenomenon under study. Girin (1989) promotes this "methodical opportunism" as an efficient way of conducting management research. He uses the metaphor of a sailor that manages to join the harbor, but a harbor that may differ from the one he was expecting, and through a route and in a timeframe that may or may not be in line with the initial plan. In this metaphor, the harbor represents the research objectives; the route relates to the data collection and the data analysis. Such a method opens the way for rich results, including theoretical and empirical contributions. This is particularly adapted to a longitudinal case study since the study's duration facilitates iterations and the back-and-forth dynamics between the field and the literature.

The research design is anchored in a longstanding tradition in our research center (CRG) of going deep into the field and giving it exposure in the writings. The lengthy immersion and the "methodical opportunism" that modeled this inquiry are seen as an appropriate way to obtain a fine-grained understanding of the topic explored through various analysis levels. We support the idea that starting from the facts and observations in the field is as legitimate and of quality as more traditional theory-centered ways, building at first and primarily on theoretical constructs. The knowledge produced through this abductive and pragmatic-based approach has a dual audience: practitioners and scholars.

3. A single case study research

The choice of a single case study is consistent with the management fields we contribute to and the comprehensive research objective. The value of an in-depth case study lies in the uniqueness of

what we are trying to describe; we previously exposed MAIF specificities and interests regarding existing empirical and theoretical contributions. The action research approach facilitates the data collection, hence, the case building. The research field includes the Design organization within the organization. It constitutes the wider domain of empirical investigation. This case-based research is built on several units of analysis and sub-cases that define the boundaries of the investigation field. The analysis units are Design practitioners' behaviors and relations with other stakeholders, the Design activities, the expertise, the rituals, the cross-functional Design expertise, and cultural changes due to Design integration in the organization. The longitudinal case study offers a great setting to explore specific units on several layers, i.e., levels of analysis, and eventually, shed light on the connections between the various levels. It also offers the opportunity to study several contexts within the case, both longitudinal and retrospect (Voss et al., 2002). Three levels of analysis have been identified: the organization, the teams, and the projects. The history of Design capability development in the organization is a mix of a retrospective and longitudinal case built through immersion years. Also, two projects have been identified as emblematic of Design integration and studied as two different embedded cases. In the next chapter, dedicated to the data, we dig deeper into the motivations for selecting those two projects.

C. The research journey

As stated above, in an abductive approach, the search for the proper theoretical framing and research questions took time more than two years. Several adjustments to the initial plan were made along the way when new opportunities were sensed. External and internal validation measures have been taken to ensure the quality of the research and the results. Although the initial roadmap is not too far from the path followed, we also had to make a few adjustments as the research progressed to consider changes in the field.

1. The time frame and sequences

The investigation comprised four stages from the initial entry into the field toward the writing of the dissertation.

a. Stage one - Discovery of the organization and the initial management problem

The thesis began with a six-month immersion in the field to discover the organization, its specificities and to follow in real-time the beginnings of the “Experience Company Mission,” the first focus of the research. Except for preexisting theoretical orientations (Whyte, 1984), I did not resort to any theoretical construct when I first entered the field. I solely focused on discovering the firm and the roots underlying the first practitioner problem statement to depict the initial state.

b. Stage two - Understanding of the organization and the foundations of the case through the study of Design history in the organization

The first year of the thesis (from September 2017 - to August 2018) was devoted to building an understanding of the organization. Some initial projects were studied, and efforts were focused on retracing the history of Design development in the organization. Interviews were conducted with the first designers hired and the managers who recruited them, and I dug into the company archives and existing publications, including newspaper pieces and books. Three monographs were produced (one on the first project of the Experience Company mission, one on the mission itself, and one on the history of Design development at MAIF) thanks to this early data collection. In the parallel, I began the literature exploration.

c. Stage three – In-depth analysis of a project and definition of the levels of analysis

The second-year (from September 2018 – to October 2019) was devoted to building the model we will present in the last chapter dedicated to the results. It is based on an initial literature review and the study of a project that was the subject of two conference papers. This second year was marked by research training and participation in two doctoral symposia. We collected useful feedback on the research work from professors and Ph. D. students interested in sharing methodological views and insights. The research focus was still blurred, though. The analysis units became clearer as I started enriching the case relating to the Design history at MAIF, especially in light of the reorganizations and the development of transversal means.

d. Stage four – Exploration of the interactions across the levels of analysis, a step aside, and a retrospect view on the data longitudinally collected and compiled

The third-year (from December 2019 - to August 2020) was devoted to analyzing the data, collecting additional material when necessary, and finally drafting. The research question was refined. It fully revealed itself late in the process. It took some time to navigate the field's richness and isolate the theoretical frame from the literature review and the field experience.

2. Synthetical view of the work conducted.

The following table (table 7) offers an overview. It describes, for each of the four stages, the timeline and the focus of the actions, the main milestones, and productions, and in the column labeled as (X) the balance between the field (F) and the academic (A) workload, with the field of study.

Table 7 - Overview of the research

stage	timeline	Focus / Action	Key Milestones and Productions	(X)	Field of study
I	April 2017 – September 2017	Collection of data (mainly secondary) and observations (focus on the organization specificities)	Understand the firm issues, vision, and state along with the way it is organized.	100% (F)	Experience Company mission (digital team)
	October 2017 – January 2018	Work on the research project	Administrative proceedings	75% (F) 25% (A)	
II	February 2018 – July 2018	Extensive collection of data (focus on Design history) The first round of Literature exploration	The official beginning of the thesis First project monograph		
	May 2018 – i3 doctoriales (Ph.D. research projects presentation)	Research presentation			
	July 2018 – November 2018	The first set of interviews Data collection (focus on projects & Design activities) The pursuit of the literature exploration	Monograph on Design history at MAIF Monograph on the Experience Company mission		Experience Design team
III	December 2018 – June 2019	The first study on two projects (extreme cases) The first draft of a model Second Round of Literature exploration	Monograph of two projects (considered as polar cases) Work on a communication paper	50% (F) 50% (A)	
	June 2019 - 19th R&D Management Conference	Ph.D. colloquium			
		Communication was presented on preliminary results from the first study.			
	July 2019 – October 2019	Abductive loop on the first study, on the model, and the case building (Design history at MAIF) The pursuit of data collection & Second round of interviews	Work on a new communication paper		
	September 2019 - Capri Summer School	Summer school on methodology and research orientations			
	October 2019 - AIMS Working Group on Innovation	Communication Paper of a first iteration of the first study presented and discussed			
	October 2019 – November 2019	Data collection and processing Third Round of Literature exploration Focus on the Experience Design Team projects	Work on the model evolution First memo on a theoretical model Memo on the Experience team portfolio		
IV	December 2019 – February 2020	Data collection (focus on teams and Design expertise) The third round of interviews Review of the Literature collected from 2018	Work on a new communication paper Refinement of the theoretical model	90% (A) 10% (F)	The Design organization (Digital department)
	February 2020 – August 2020	Latest bits of data collection	Dissertation Writing	100% (A)	
	June 2020 - 27th International Product Development Management Conference	Communication Paper presented and discussed			
	September 2020 – November 2020	Presentation of the thesis: Review of early results (Re)Writing	Dissertation Refinement	25% (F) 75% (A)	
	January 2020	Defense of the thesis			
	December 2020 – February 2021	The final contribution to the field: Application of insights of the thesis in the field Revision of the thesis dissertation in light of the advice from the thesis defense	The official end of the thesis		

3. Adjustments

The previous table (Table 7) evidences the changes in the field of study and the activities throughout the thesis. There is a gap between the early orientations and the actual work conducted on a different focus. According to Yin (2012), *"a virtue of the case study method is the ability to redefine the "case" after collecting some early data."* This requires "*shifts"* in response to constraints from the field and the surprises encountered, opening new opportunities. It is in line with David's (2000) view on "*abduction loops*." The organization has evolved, and several changes have impacted the field of research, which has had to be expanded over time to study the subject fully. The reorganization of July 2018, the creation of the community of practice that followed, and the most recent creation of a new Design team at the beginning of the year 2020 required successive adjustments to the research field. It enriched the data collection of the diversity of the situations observed. For instance, the study's first focus was on the first project I participated in when I entered the field. From an early data collection, I built a monograph in 2017 that did not lead us to any solid results and is not part of this dissertation, but that has helped in identifying key focus to investigate, such as the relation between existing human-centered practices (e.g., participatory workshops) and the new Design practice in projects. This monograph helped me reflect on the data collected and in the building of the first grid used to conduct interviews in the field. It served as a pilot study for the following project monographs. Conversely, we spent a few months studying a project that surprisingly generated much frustration among various participants. It was not planned, but the study of this extreme project ended up being a turning point in the research.

II. The knowledge production

After having presented an overview of the research Design, we focus, in this part, on the knowledge produced through the analysis of the data collected and the means employed to ensure the results' validity. We also reflect on our relation to the field and ethical considerations.

A. Data collection and analysis

In the following, we expose the data collection and data analysis processes.

1. Data collection

The data collection lasted for forty months, from the first integration in the field up to the end of the redaction, before the first submission of a manuscript. It started in April 2017 and ended in August 2020. The case studies are based on various combined data sets from primary sources, including direct observations, interviews, participant observation, personal archives (e.g., notes from the field,

recordings, and pictures), documents, and physical artifacts (Yin 2012, Dumez 2016). I collected secondary data thanks to accessing the firm intranet and extensive archival data search. The variety of these empirical sources allows for data triangulation, thereby limiting the subjectivity of interpretations in the data analysis process. Table 8 provides a summary of the types of data collected.

Table 8 - Types of data collected

Type	What	How	Stored/Memory
Primary	Active role in the field	Active participation in projects as a designer in the project team Participation in team meetings and daily activities Organization of internal events	Notes, pictures, recordings
	Interviews	Semi-structured and free form	Recording and transcription or notes
	Direct observation and participant observation	Participation in Events, meetings	Notes from the field, including observations and quotes
	Informal talks with actors in the field	Feedback and perceptions collected when discussing in informal contexts (lunch, break)	Quotes
	Virtual ethnography	The capture of emails, social media posts, chat discussions, and expressions of interest.	Screenshots, memos
	Personal archives	Note-taking from observations, documents produced in the field, etc.	Notebooks, Documents, Pictures
	Physical artifacts	Tools, models	Book/reports, models
Secondary	Archival search	Access to the archives in the headquarters and a database of decision reports and digitized documents	Extracts of files
	(Internal) Documents	Shared storage spaces Intranet	Classification

I already described my position and active role in the field. In the following, I provide further detail on the other types of data I accessed and collected.

a. Primary data

→ Interviews

Repeated semi-structured interviews have been carried out with key stakeholders (e.g., the CDO, the Design managers, and some lead designers). As in any abductive approach, the interview grids evolved as the research progressed. The questions were remodeled during the interviews regarding the predefined guide that delimited the topics of investigation. All the interviewees had dedicated time for free speech at the beginning and the end of each interview. Thirty-six interviews have been conducted, the ones that we were able to record have been transcribed. Interviews were of particular interest in the retrospective parts and for data triangulation. In other words, the combination of an emic conception based on the description of the perception, the discourses, and the actions of the actors in the field (from the interviews, the informal discussions, and the monitoring of online public or email communications) and an etic conception that emphasizes the connections of the researcher observations and actions in the field with external inputs.

→ **Direct observation and participant observation**

In addition to the interviews, I participated in hundreds of meetings and dozens of internal events through this long immersion. I could not record each meeting or event I attended but used the digital tool to capture quotes, take notes and pictures and store it in one place.

→ **Informal talks with actors in the field**

Many discussions occurred in formal or informal ways during daily activities, lunches, and commutes between Paris and Niort; I captured quotes, ideas, discourses, and observations.

→ **Virtual ethnography**

I regularly conducted research requests on the intranet and internal social network to monitor posts and communication on Design or browsed it to get familiar with the company news stories.

→ **Personal archives**

Besides live note-taking on events, facts, actors' behaviors, observations, I wrote memos on the field to describe what I observed, the organization structure, or projects. In my personal experience in the company, I combined writing in the moment (about surprising observations, frustrations, failures, successes) and a posteriori notes, reflecting yearly on the experience journey. I used a note-taking app and four notebooks. Those are only partially digitized and accompanied by pictures or drawings.

→ **Physical artifacts**

The project monographs included pictures of the physical artifacts and extracts from the documents produced by the projects' stakeholders and the Design team.

b. Secondary data

I had the opportunity to meet three times with the service in charge of the company's Archives. They browsed their digitized documents databases for me and retrieved documents on the company history, on decision reports involving Design, on the mutual model, and representatives roles. Also, I had access to the teams' documentation architecture through shared storage spaces and received material from colleagues on projects. I also read the books produced on the company's history.

c. Data sets composition and review

Those several types of data coming from various sources were combined in data sets per level of analysis as the following table (Table 9)

Table 9 – Data sets per level of analysis

Levels of analysis	Data sets
The organization (first Design interventions; creation of teams; positioning in the organization; specific Design devices)	**Semi-structured interviews (15)**(various stakeholders involved in the creation of the Design teams: Head of the strategy, Head of Innovation, CDO, designers) **Field observation** (notes and pictures) **Access to internal documents, including strategic reports** (presentation of strategic plans, vision document, entity roadmaps, records of decisions, and presentations to executive committees) Access to several internal databases (archives and intranet) and books **Access to documents and artifacts** produced by the stakeholders (slides, activity reports, framing documents, visual management tools)
The Design community (transversality) (tools, means of interaction between the Design teams and the rest of the organization)	Access to online discussion and digital sharing tools (virtual ethnography) **Active participation** in certain projects or follow-up through project meetings and presentations **Access to documents and artifacts** produced in the context of the projects *studied (framing, synthesis, prototypes, reports, slides, etc.)*
The Design teams (the Design organization) (composition; rituals; missions; issues)	Semi-structured interviews (6) (with the Design teams managers) A **questionnaire** sent to the 4 Design managers **Immersion** in the Experience Design team **(33 months)** **Access to documents and artifacts** produced in the context of the projects *studied (framing, synthesis, prototypes, reports, slides, etc.)*
The (Design) projects (types of projects; project management; productions; actors' feelings) Main field: projects led by the experienced Design team	Semi-structured interviews (15) (with different stakeholders: project leaders, designers, project managers) **Active participation** in certain projects or follow-up through project meetings and presentations **Access to documents and artifacts** produced in the context of the projects *studied (framing, synthesis, prototypes, reports, slides, etc.)*

The data accuracy was reviewed in follow-up sessions with participants or through the triangulation of primary and secondary data from multiple sources. At least one key stakeholder proofread the processed data documents. The research work has been shared regularly with key stakeholders.

The progress was monitored and discussed quarterly in 2-hour meetings with the thesis supervisors and the two thesis tutors from the field (the Chief Digital Officer and the Experience Design team manager). Indeed, on top of being supervised by a researcher on innovation management associated with my attachment at a research center in innovation management, I benefited from bits of advice and guidance from the consortium director on Design and Experience. Both were involved in the regular meetings with the field. The model has been inductively generated based on the data collected and analyzed at the organizational level. Then, we investigated its application at two other levels: the project and the team. For example, it has been presented and tested within the experience Design team during a dedicated workshop and with one designer from the digital factory. Based on some difficulties of legibility encountered or misunderstandings, various elements of the model were refined and renamed.

2. Data analysis

a. Data seriation in a narrative approach

I used a narrative approach to deal with the data sets (Dumez, 2016). The data seriation transforms a heterogeneous and rich material into a consistent document that enables the analysis. The data sets served to write monographs on the organization, the projects, and the teams and present the strategies and tools. The following table 10 exposes the data sets' processing from multiple sources in light of the various levels of analysis.

Table 10 - Seriation of the data according to the various levels of analysis

Levels of analysis	Data sets	Data processed into
The organization (first Design interventions; creation of teams; positioning in the organization; specific Design devices)	**Semi-structured interviews (15)**(various stakeholders involved in the creation of the Design teams: Head of the strategy, Head of Innovation, CDO, designers) **Field observation** (notes and pictures) **Access to internal documents, including strategic reports** (presentation of strategic plans, vision document, entity roadmaps, records of decisions, and presentations to executive committees) Access to several internal databases (archives and intranet) and books **Access to documents and artifacts** produced by the stakeholders (slides, activity reports, framing documents, visual management tools)	**Monograph** on Design development at MAIF (longitudinal case study)
The Design community (transversality) (tools, means of interaction between the Design teams and the rest of the organization)	Access to online discussion and digital sharing tools (virtual ethnography) **Active participation** in certain projects or follow-up through project meetings and presentations **Access to documents and artifacts** produced in the context of the projects *studied (framing, synthesis, prototypes, reports, slides, etc.)*	**Memos** on transverse devices
The Design teams (the Design organization) (composition; rituals; missions; issues)	Semi-structured interviews (6) (with the Design teams managers) A **questionnaire** sent to the 4 Design managers **Immersion** in the Experience Design team **(33 months)** **Access to documents and artifacts** produced in the context of the projects *studied (framing, synthesis, prototypes, reports, slides, etc.)*	**Memos** on teams
The (Design) projects (types of projects; project management; productions; actors' feelings) Main field: projects led by the experienced Design team	Semi-structured interviews (15) (with different stakeholders: project leaders, designers, project managers) **Active participation** in certain projects or follow-up through project meetings and presentations **Access to documents and artifacts** produced in the context of the projects *studied (framing, synthesis, prototypes, reports, slides, etc.)*	**Monograph** on projects **Projects portfolio** (78 documented projects) + project portfolio study

These documents produced (monographs, memos, projects portfolios, etc.) displayed the processed data and served as the basis for data analysis to move beyond the mere descriptions. We pre-processed the material through floating attention (Dumez 2016) to avoid the risk of circularity. The analysis approach excluded coding but instead relied on an abductive approach characterized by Dubois and Gadde (2002) as "systematic combining."

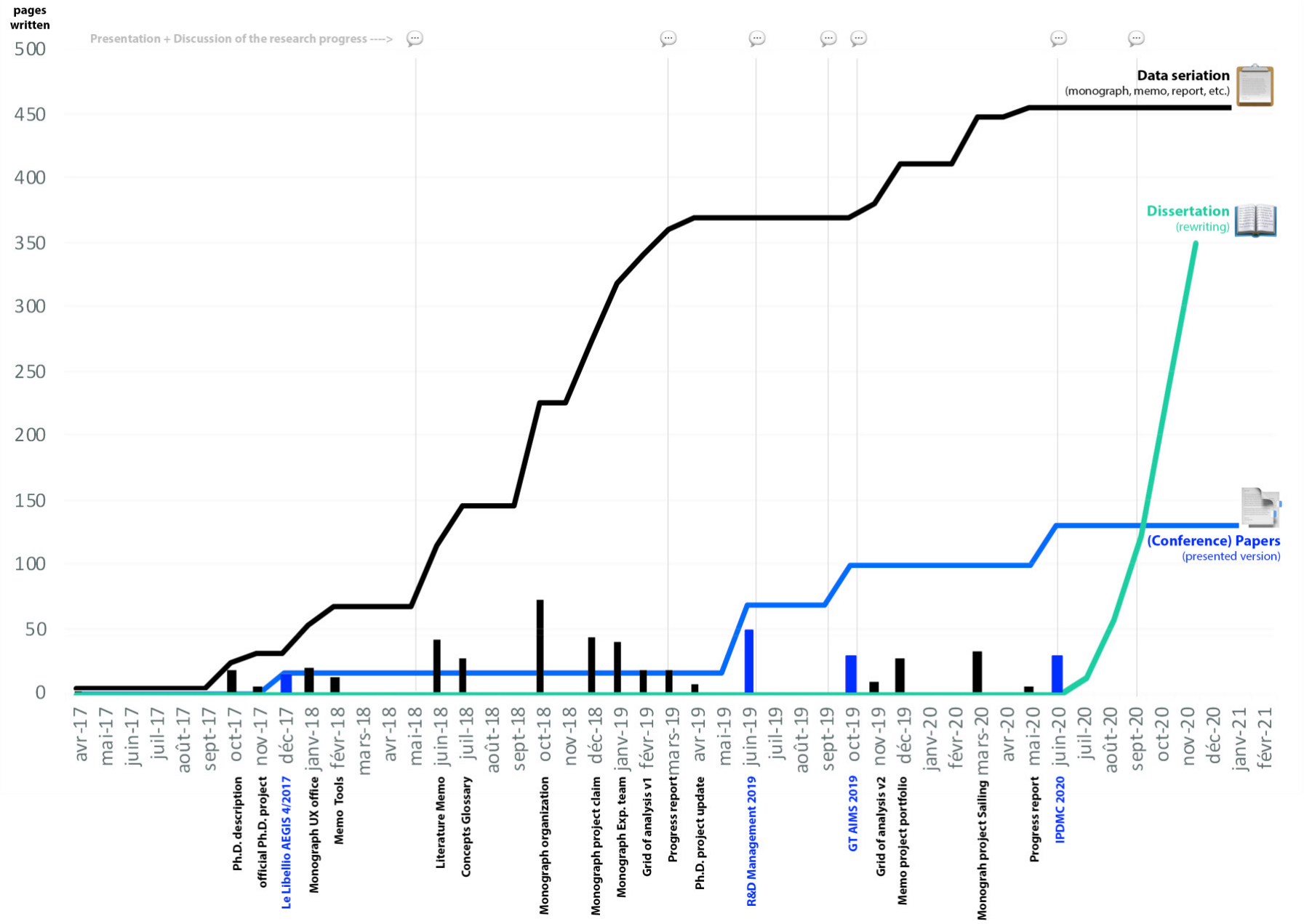
b. The abductive approach in practice for data analysis

Table 10 displays the selection of the monographs and case descriptions we selected to be part of the final case and built this dissertation on. However, in our abductive approach, some of the material we produced have been discarded. For instance, the first monograph produced in January 2018 focused on studying two office space redesign projects. The analysis of those two projects did not exploit later on. Our study's reorientations were triggered by major changes in the field of study (such as the 2018 reorganization), "methodical opportunism," and the progressive formulation of our research question.

The final case selection's main criteria have been the ability to provide a multi-level understanding of how Design manifests at MAIF. We looked for emblematic cases and illustrations of the observed phenomenon. We started by gathering data with a broad scope and narrowed it as the research unfolded. A turning point was the results of the study of the "new claim-management model project" because it appeared to be an extreme case (Eisenhardt, 1989). The project failed and had generated much frustration. We seized the opportunity to study it to shed light on the conditions for designers' integration. We studied this project using a grid of analysis built from the "technical literature" (Strauss and Corbin, 1990), defining Design-in-practice that we will present in the next chapter (see chapter 4, section III). From the analysis of this project, we built a new grid of analysis that we refined through several iteration loops between empirical data and theory, referred to as "systematic combining" (Dubois and Gadde, 2002). This emergent grid of analysis implicitly depicted in the project study results was first drafted in February 2019; then, it served as a reference point in every study that followed. Our theoretical framework, empirical fieldwork, and case analysis evolved simultaneously and led to the theoretical refinement and empirical findings. This grid of analysis led to the model we present in the results section. We used the model, once stabilized, to perform sequence analysis of our main case and within-cases (Perks and Roberts, 2013; Dumez 2016) to make the most of the data collected longitudinally.

The figure next page (Figure 28) accounts for all the documents produced as part of data seriation and early literature memos. The horizontal axis corresponds to the research period, the vertical axis to the page counts. Each bar graphs stands for a distinct document written (in its final version) as part of this research. The black ones refer to data seriation in monographs or memos, while the blue ones refer to the paper published in December 2017 (a book review) and the conference papers produced since. The curves represent the add-up of pages. The green curve describes this dissertation rewriting from a first partial draft delivered in September 2020. The vertical slim grey lines correspond to the research work's formal presentation and discussion with external researchers.

Figure 28 - Overview of the thesis progress through time



B. Results validity and overall research quality

A group of researchers looked into the quality assessment of case-based research papers published in five high-ranked scientific journals over twenty years. The analysis of more than eight hundred papers suggests a template based on ten criteria to evaluate case-study research quality (Goffin et al., 2019). The following figure presents an extract from this template named "CASET" (see Figure 29).

We used this grid as an auto-assessment tool. In this chapter, we have presented the research Design and its theoretical foundation as well as the theoretical sampling that led to the cases selection. We have as well specified the way the data has been collected and processed. In the following, we reflect on the validity and reliability of the results.

Figure 29 - The CASET template (Goffin et al., 2019, JPIM)

CASET - Evaluation Template for Case Study Articles

Author(s) | **Article title** | **Journal** | **Year of publication**

Number of cases
Note the number of cases studied in the article

Number of data sources
Note how many sources of data were collected, based on the following five sources:

i. interviews (face to face, including unstructured/semi-structured/structured interviews and informal conversations)
ii. surveys
iii. observations (including site visits, workshops, ethnography, data feedback sessions)
iv. internal documents
v. secondary data

	Evaluation criteria	Explanation of measure	Anchoring Statements	Score (0/1)
Research Design	*Theoretical foundation*	Was a clear explanation given of why the case method was the most appropriate method to adopt?	0 = "No": no explicit argument was given for why the case method was adopted in the research. 1 = "Yes": there was an explicit argument for why the case method was adopted in the research.	
	Pilot study	Was there a pilot study proceeding the main study?	0 = "No": there was no pilot study. 1 = "Yes": a pilot study was conducted before the main study.	
	Theoretical sampling	Was an explanation provided of which case(s) were chosen and why?	0 = "No": no explicit argument was given about how the case(s) was / were selected. 1 = "Yes": case(s) were selected for theoretical purposes, example ranges from a discussion on why case(s) were chosen to a discussion on the selection of polar extremes where cases exhibited extremely high or extremely low value on the constructs of interest.	
Data Collection	*Triangulation*	Was the research based on multiple sources of data?	0 = "No": the research was based on only one source of data 1 = "Yes": the research was based on more than one source of data	
	Review and validation of evidence	Was the evidence reviewed and validated by external parties?	0 = "No": the evidence was not reviewed and validated. The article did not explicitly state if the evidence is reviewed and validated. 1 = "Yes": the evidence was reviewed and validated by the interviewee and/or the company (e.g. through data feedback-sessions); or by fellow researchers not part of the primary data collection.	
	Transparency of data collection	Was it made clear how the data collection process was conducted?	0 = "No": the data collection process was not clear and transparent because there was not sufficient information about the origin and the contents of the data collected (in terms of areas, topics, themes or constructs), which would allow replication. 1 = "Yes": the data collection process was clear and transparent because interview themes, questions and/or research instruments such as research protocols specifying data collection circumstances were reported, which would allow replication.	
Data Analysis	*Inter-coder agreement*	Were the data coded by multiple investigators?	0 = "No": the data were not coded by multiple investigators working independently, or there was no information about how inter-coder agreement was achieved. 1 = "Yes": the data were coded by multiple investigators working independently, and there was an explanation about how an acceptable inter-coder agreement was achieved.	
	Case presentation	Were findings and empirical evidence presented in a way that made it clear how the author(s) reach their conclusions?	0 = "No" - The way in which the author(s) reached their conclusions based on the case data was neither clear nor documented. Their focus was on "telling the story" and not "showing the evidence", and any quotes used were selected to support the authors' conclusions. 1 = "Yes" – The article was explicit and clear in demonstrating how the empirical data were used to arrive at the conclusions, providing a clear "trail of evidence" (through the use of approaches such as tables, data displays, coding schemes and other visual aids).	
	Case interpretation	Did the case analysis move beyond description and conceptual ordering?	0 = "No" – The results from the case analysis were mostly descriptive and/or simply consisted of condensing data into patterns and concepts. 1 = "Yes" – The interpretation moved beyond description and conceptual ordering, to the generation of meaning and of the conceptual significance of the case facts. This was achieved by, for example, developing a conceptual framework or model from the case(s), formulating propositions to be tested by future research, and/or systematically discussing results in relation to existing literature.	
Post-hoc	*Reflecting on validity and reliability*	Was there a discussion about the quality of the research?	0 = "No": there was no explicit discussion about the quality of the research. 1 = "Yes": there was an explicit discussion reflecting on the quality of the research (either in the section on research design stage or in the consideration of limitations), which covered one or more dimensions of validity and reliability, showing that authors were aware of the need to ensure rigor.	
			Overall quality score (out of 10)	

1. Results validity

Eisenhardt (1989) underlines the strengths of theory-building through case study research stressing the *"novelty, testability, and empirical validity*" plausibility. Nonetheless, she also points to two risks in case-study research: *"a lost sense of proportion"* leading to evidence-rich but complex results, and a case study leading to *"narrow and idiosyncratic theory."* The first one is about searching for parsimony (Dubois and Gadde, 2002); we faced this challenge a few times in the model refinement and tried to eliminate unnecessary constructs, confront the model to practitioners, and discuss it during the research reviews. The second one is about the challenge of generalizability. In addition to generalizability, Eisenhardt (1989) insists on building internal validity and establishing "*the why of what is happening."* While our research was exploratory and did not intend to produce a generalizable theory, we discuss in this part our results validity focusing on internal and external validity.

a. Internal validity

Internal validity is essential to overcome researchers' inherent subjectivity in the interaction with the field (Girin, original paper of 1990, republished in 2011 in the European Management Review, in English). Several means can be employed for internal validity and to establish a "distant familiarity" (Matheu, 1986). First, in the data collection process, we made sure to combine the data coming to this research, for instance, during the interview, with "cold data," i.e., data external to the research context. It is a way to mitigate a double subjectivity: the researcher's subjectivity in the field experience or the interaction with the actors through the questions asked; and the interviewees sharing their views. Second, in the data analysis, I submitted the data and their interpretation to "collective supervision" (Girin, 2011). This relies on researchers external to the field to assess the interpretation's plausibility and theoretical constructs' explicative power. In this regard, I worked on the data reviewing, processing, and analysis with my thesis supervisor. Besides, I had weekly, and monthly discussions with Ph.D. students from the IDEO research group in the research center and the consortium Exalt. As previously detailed, the research work has been the subject of regular presentations at the research center (CRG), i3, and EXALT consortium. Each time, the progress, orientations, research framing has been discussed. These controlling mechanisms formed internal peer validation mechanisms. The presentations at three academic conferences (workshop on Innovation in the annual conference of the international association of strategic Management (https://www.strategie-aims.com/groups/3), IPDMC and R&D management conference) as well as at two doctoral programs (Ph.D. colloquium of the R&D management conference) and a week-long international summer school focused on methodological approach and epistemology, provided further perspectives, questioning alternative interpretations. In other words, several researchers provided feedback or helped in the data reviewing process. Particular attention was paid to properly display the empirical evidence that motivated and underly the

contributions and findings. The model offered in the results chapter was subject to this reviewing process. It evolved through several iterations between the field and the interactions with peers. It has been presented in its first version at the R&D Management conference held in Paris (France) in June of 2019. In a modified version at the AIMS Innovation workshop held in Grenoble (France) October 2020 and at IPDMC (June 2020).

b. External validity

External validity is not about finding a proper interpretation of the "certain reconstitution of actors' behavior logic" (Girin, 2011), but rather appraising the generalizability from a case-specific context.

In our case, it is about the model applicability to a population of organizations to describe the phenomenon studied: Design capability-building, or on a more generic level, the Dynamic Capability-building?

We presented an early version of the model during a workshop with the EXALT Design lab's industrial partners. We collected in June 2019 from the practitioners' partners of this research consortium rich and insightful feedback and comments on the potential applicability of the model to the Design development within their firms.

From September to November 2020, I conducted interviews with Design managers from other organizations external to this research project. The sample was not random; we selected four companies, filling five categories: (i) a representativity of the three sectors (primary, secondary, tertiary), of (ii) various industry and (iii) dominant functions, but also of (iv) various size and (v) degrees of novelty to Design. The only two common traits between the four are the integration of Design through Design capabilities-building and the Design type we focus on: Strategic (service) Design. We present in the fifth chapter the results from this study (see Chapter 5, section III).

2. Ethical considerations

General ethical considerations include a set of rules and guidelines for the researchers to follow regarding peers and participants in the research. Thus, the first one deals with honesty and transparency. The researcher must be honest in recounting his/her work, making sure not to alter the facts, remarks, discourses, or any kind of data or results. He/she commits to displaying in full the conditions in which the study was conducted and particularly the way the data was processed with a view to accuracy. Other considerations are about the research stakeholders. The interlocutors from the field must have been treated respectfully, including informing them of the ongoing research and their potential role in it, which necessitates their volunteer agreement, in other words, their consent. They must be offered the ability to refuse to participate. If they agree to be participants, the data collected from their participation must be confidential, which prevents it from being used for any other purpose than the research

presented. Indeed, the raw data collected is for the sole purpose of the research and should not be communicated to external parties in any way, or used out of context, especially not ad hominem, which could put participants in an uncomfortable position.

In light of this review of essential ethical guidelines (Garsten, 2011), I clearly disclose my dual status of employee and researcher and be transparent about my investigation topic. To do so, the participants in the interviews were systematically provided a document. I formally explained the context and the purpose of the research and their right to renounce their participation at any time. It spelled out the type of data collected and how the data is processed and set out the exchanges' confidentiality. I tried not to be too specific about the precise focus of the investigation and the main orientations to prevent it from influencing the actors; however, I encouraged them to ask for more information if they wanted to and willingly answered any inquiry regarding the research. It is worth noting that I did not face any participation refusals.

I paid close attention to preserving people's anonymity, especially in the descriptions presented in research documents. When they explicitly asked not to be linked to particular elements of interest in their discourses. However, one may argue that the anonymity of certain participants in the studies is impossible. Indeed, when the field of investigation is disclosed, anyone can trace back the name corresponding to the position at a certain time. This is one of the limitations of being transparent on the field description. This limitation directly implies the managers associated with the study, such as Head of Innovation, Head of Strategy, or CDO.

Enfin, the research was not constrained by commissioned or third-party alteration of the results nor by financial obligations that could be considered as a source of conflicting interests.

Chapter Four

The first chapter presents the organization's ongoing transformation and the context in which interest in Design rose. In this chapter, we start by recounting the history of Design integration and development at the organizational level through a chronological perspective. Then we consider Design at the team level. Eventually, we zoom on two emblematic projects involving Design, explaining why they are interested in understanding design integration in the organization. Thus, we present where designers and Design resources are located in the firm, i.e., the Design organization at MAIF in 2020 and its main evolutions since the past years.

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I. History of Design integration at MAIF (2008 – 2020): Design at the organizational level

A. Design integration (2008 – 2018)

B. Design development (2018- 2020)

C. Questions raised from the analysis of Design integration at MAIF

II. The in-house Design organization: focus on the four Design teams

A. Design within the Innovation team

B. Design at the Digital Factory

C. Design in the Experience team

D. The I.T. Design team

E. Common Design Tools among the teams

III. Design integration within projects

A. An emblematic project of the Innovation team involving the DF: Leisure Sailing

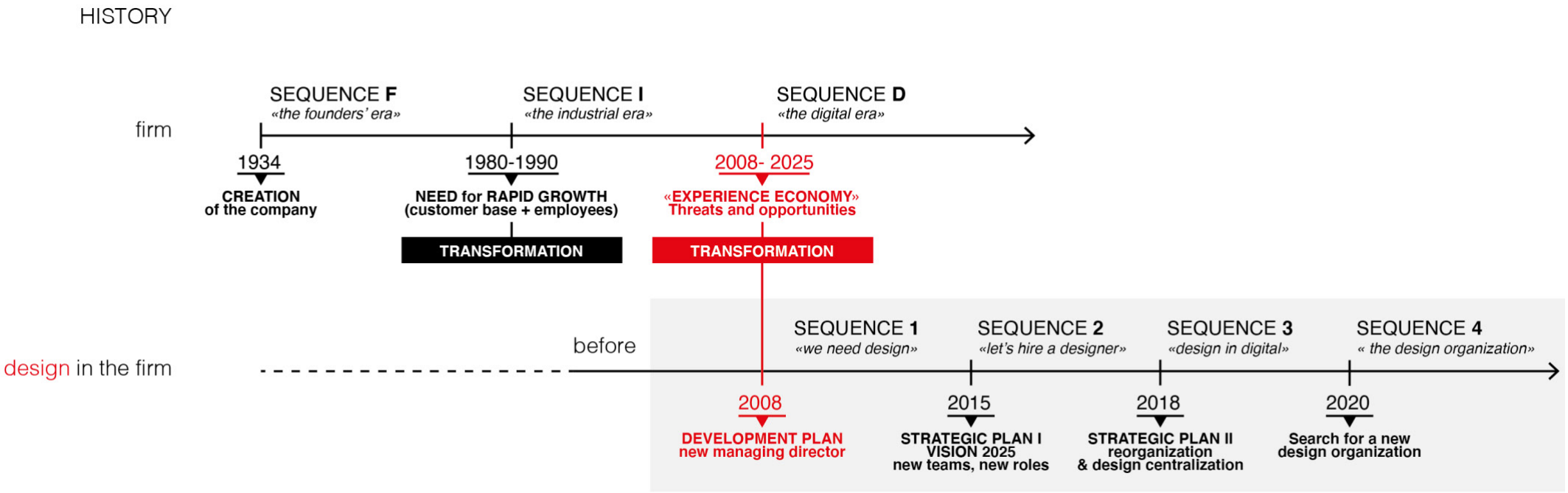
B. An extreme case of Design integration in an Experience project: A new claim management model

I. History of Design integration at MAIF (2008 – 2020): Design at the organizational level

Design is first considered to support the Innovation strategy; then, it supports the Digital transformation strategy. We delineate four turning points in MAIF Design history outlining four sequences: first, Design discovery as of 2008, the "we need Design" period; then follows the hiring of pioneering designers starting from 2015, the "let's hire a designer" period; and eventually the reunification of designers within the newly created Digital department, that adds to the Chief Digital Officer the title of Chief Design Officer, the "Design in digital" period. Very recently, at the beginning of the year (2020), the CDO started working on a new Design strategy for the organization to complement the Digital strategy and advocated for the creation of a new Design team within the I.T. division, i.e., outside the Digital department.

It took seven years (2008-2015) from the first experimentation assimilated to Design, the Design integration decision. However, as the Head of Strategy summarizes it: *"It took a while before Design integration, but the idea of Design... is old."*

Figure 30 - Design History in the firm



A. Design integration (2008 – 2018)

Design spread starting its appearance in the first strategic plan (2015-2018). This part exposes how Design has been integrated into this first strategic plan and how it has developed since.

1. Design discovery: "we need Design" (2008 - 2015)

In 2008, an Innovation team was created as part of the new Strategy division. This division is in charge of strategic planning and counts almost fifteen missions, such as business intelligence, internal communication, partnerships, strategic studies, or prospective thinking. Previously, the innovation strategy was dealt with by consultants monitored by the CEO. The newly appointed Head of Strategy (HS) posted a job description to recruit a Head of Innovation (HI). The objective is to form and execute the Innovation strategy. The appointed HI has a decisive role in discovering Design and its integration with the first recruitment of designers. The HS's Design awareness grows as the Innovation strategy unfolds. He later plays a key role in convincing his peers and the managing director of ratifying the decision for Design integration.

a. A "creative thinker" appointed as the first Head of Innovation

The first Head of Innovation defines himself as a "creative thinker" more comfortable with creative and vision work than control or steering activities. Even though he spent ten years in a Legal department operating risk assessment and seven years in commercial development, working on customer segmentation, new products, and market exploration, he showed proactivity, curiosity, open-mindedness, and a quest for continuous improvement. He states:

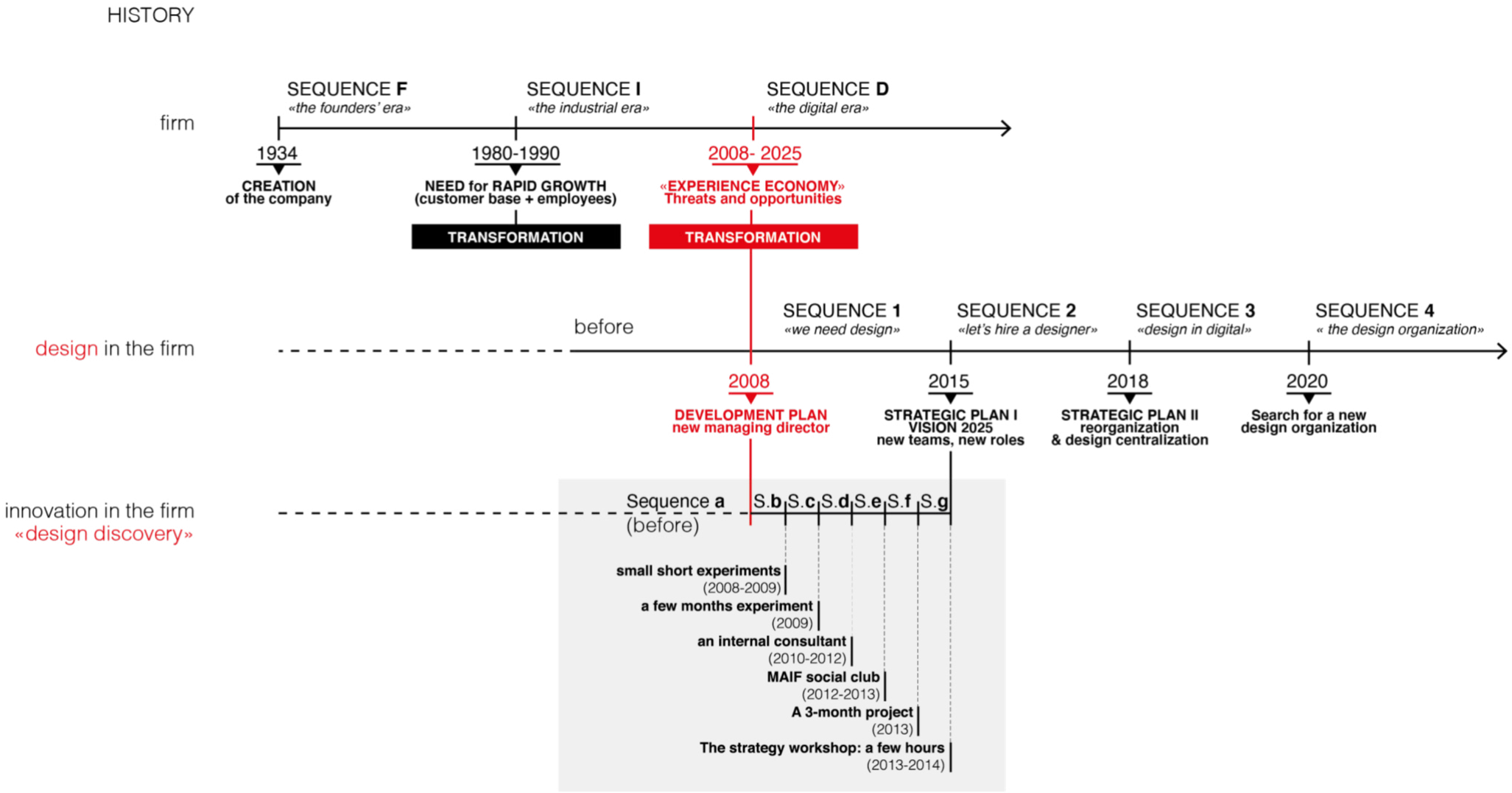
> " As soon as I am on a job, I shape it in my way, even when I join an existing position, I transform it most of the time. I sort out what I refuse and the things I believe in, convictions that I try to implement."

He mentions several subjects he explored proactively out of curiosity or intuitions, which later became useful later in new jobs. For instance, while working for the commercial development, he formulated a strategy that he activated a few years later as HI:

> "I've been working, without really being asked, on a tribal and community strategy: sort of 'How could we imagine enriching the customer relationship by providing branded non-commercial content ?' And so, it foreshadowed the MAIF Social club creation I led, almost 5 to 10 years later, so there you go(…) It made sense to me, because it was in line with everything I've had in my head for years."

Therefore, he considered the job of HI as an opportunity to express his traits of curiosity. We highlight in Figure 31 below six sub-sequences of Design Discovery that he initiated.

Figure 31 – Design discovery in the organization in 6 sequences



b. Sequence “b” [6]: starting somewhere from scratch with small short experiments (2008-2009)

The first sequence begins in 2008 when the HI role is created. Newly appointed, he presented, without success, a roadmap proposal to the board of Directors asking for dedicated resources. Thus, he looked for sponsors within the organization and started reaching to people he knows and builds small experiments with some acquaintances, as he recalls:

> “The fact that I had a good network in the company really helped. The first thing I did, was one-off demonstrations. I knew very well the manager from a call center, I asked him to join an experimentation and he said, «Okay, let's go.» So, I pushed several topics to three call centers, and we worked on continuous improvement. And it's working really well, there is plenty of ideas. That's the first demonstration I've ever made.”

The experiments lead to implementing a peer-to-peer tool that collects ideas to stimulate continuous improvement. It is well received by participants and stayed up for months but remains at the experiment level.

HI and his manager (HS) both agree on a precise positioning: the challenge is not to create a genius team capable of generating ideas and then developing them on behalf of the rest of the organization; but rather to change the culture, the way existing teams operate and the working conditions to foster creativity and reactivate the organization’s latent innovation capability. To do so, HI suggests implementing participatory approaches.

> “It was a kind of fantasy that was more or less a reality that MAIF actually had a capacity for innovation for a while and lost it and so what makes that ? What are the conditions that would allow it to regain its capacity for innovation?”

> “very quickly, in the context of innovation, we said to ourselves we have a job to do, it's to put in place working methods that are [...] participatory, [/...] about co-construction. ”

c. Sequence “c”[7] : a new experiment of a few months (2009)

After focusing on front-line employees' interactions with customers through the call centers' experiments, HI looks for other teams willing to test new approaches. He meets with several managers until he finds one that agrees to work with him on one specific subject: people suffering from dependency. It seems to be a pressing need for many customers and a legitimate topic to address as a human-centered insurer providing insurance products related to accidents and injuries. He finds a sponsor, convinces HS and the sponsor to embark on external experts from various disciplines (such as medical workers), builds a proper multidisciplinary team, and invites volunteers to join the project team. He aims to approach the topic that has been investigated in the past but abandoned differently with a

[6] Cf Figure 31
[7] Cf Figure 31

fresh eye. The HS intervened to work out logistical matters so that external parties are granted access onsite and to the workshops. This is the first time that external experts were brought in. HI struggled with the facilitation of the work of the multidisciplinary project team:

> "he was convinced that putting fifteen different skills with different points of view on the same subject; the collective production would be more powerful. It seems pretty obvious now, but it wasn't at that time. But he faced limits regarding the way to run such meetings/workshops, the animation and the production techniques."

The eight people of the project team worked nine months following the methodology he built. When presented with the result of the work, the board of Directors assesses the topic as a low priority regardless of their appreciation of the effort put into experimentation. HI faces a new dead end.
HI considers the experiments with the call centers, then the project, as learning opportunities. However, they generated frustration. He decides with HS to change the approach once again.

d. Sequence "d" [8]: becoming an internal consultant (2010-2012)

In light of the difficulties faced in leading multidisciplinary workshops, HI spends some time learning more about various innovation approaches, including Design Thinking. For weeks he digs into books, online material and signs up for training programs on problem-solving techniques and creative techniques. He ends up working on a new idea. He builds an internal consulting offer dedicated to managers and project managers. He offers his expertise on the methods and techniques he just learned to prepare and facilitate problem-solving workshops and synthesize their results. With HS's help, he looks for a place to host these workshops and arrange it at the lowest costs. The "*café des marronniers*" is born not far from the headquarters. HI presents this internal consulting offer as a service provided to help managers and project managers to improve their practices or solutions:

> "We make a value proposition that is slightly different from before, we offer to help them to generate ideas, to improve a process, to share more efficient practices and solutions, to solve a problem, anything, and we explain that we can accompany them in from the problem framing to the knowledge production and generation of ideas and that we have set up a place."

It is a huge success: he accompanied twenty-five projects in the first two years. Each workshop takes, on average, two weeks from the initial demand to the final delivery. After two years, he decides to transfer this service to the training programs team part of the H.R. division, i.e., "the corporate academy," and moves on to a new project. In 2020, eight years later, employees can still book the space ('café des marronniers'), with or without the help of a workshop facilitator from the H.R. division. In line with this experiment, a similar facility -an "innovation lab"- facilitation of workshops in a dedicated space was created in the headquarters by the same H.R. team.

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[8] Cf Figure 31

e. Sequence “e” [9]: a new bet, the MAIF social club (2012-2013)

Building on this success of a space dedicated to innovation for employees, HI and HS explore the idea of dedicating a space to onboard customers. Inspired by the trend in the retail sector, they decide to work on a concept store. They invite the Head of Marketing and the Head of Distribution to join them. The board of Directors backs up the idea. The stakes are high, as is the required investment. The business objective behind the concept store is to increase the Brand Value, matching insurance with “positive emotions” and enriching the customer relationship:

> "Insurance is boring. Nobody cares about insurance. You have to create positive emotions to attract people. Now, we're lucky to have the ability to create positive emotions in insurance because we've built ourselves up in statutory fields that are the bearers of positive emotions: the fields of Education, culture, sport, leisure activities; those things can be nice. It's interesting for a brand to go and enrich its relationship outside its core business, to create positive emotions.”

Also, this physical space in the center of Paris is seen as an opportunity to build a real-life experimentation lab where employees could meet customers and potential future clients in a context that has nothing to do with the traditional retail agencies. This neutral context is suited to test people's interest in products or services that may or may not lead to insurance products. This is in line with the Innovation strategy of diversification. Hence, the idea of ‘MAIF Social Club’ emerged in 2012, the location was found in 2013, then a Design agency worked on the project with HS and HI until its effective launch in 2016.

f. Sequence “f” [10]: A project reveals the necessity of a change (2013)

From this experience, HI starts a new project, i.e., improving the practices of risk assessment to quote insurance policies of places owned by charities, municipalities, or sports clubs. This risk assessment was handmade and of unequal quality. He finds two sponsors for a three-month digital tool project that improves the risk assessment quality and eases the process while conveying a modern image to the customer. He obtained a dedicated budget from the board of Directors. Usually, projects last more than a year following a linear process. Several teams work successively on each sequence; a three-month time frame from the initial problem statement to implementing the solution has never been achieved at MAIF. Therefore, this project represents an innovative way of working. He gathered a multidisciplinary team that meets in workshops at the “café des marronniers” and follows a Design thinking approach. At the end of the three months, the solution is implemented. While the employees widely approval of the new tool, the customer satisfaction, and the brand value improvement, the board

[9] Cf Figure 31
[10] Cf Figure 31

of directors' reaction is discordant: they are skeptical about the scalability of the process as the HS states:

> "I remember that moment clearly. It was a difficult moment for me, because I realized the magnitude of what had been done, and at the same time that this «magic feel» was completely untouchable as a way of doing things; because... they (the project team) came to the managing director and in front of the head of departments to say 'we (people from various departments) worked together and it was great' and everyone looked at each other and said «but you guys have been asked to work that way (transversally) for 25 years; why weren't you doing it earlier ?'... So, there was this kind of discrepancy, between a managing director who was expecting concrete results and a conviction that we, the Head of Innovation and I in particular, were convinced that innovation was beforehand about a cultural change and new methods, and that we were going to get the results, but not right away."

What was considered by the duo (HI and HS) as a breakthrough and a significant achievement regarding the innovation method and approach was only considered as granted by the board of Directors who do not appreciate the cultural changes and the development of new practices required. This reveals a gap in expectations. The duo realizes they needed to train many people on innovation practices to reach what was already falsely considered a current standard (cross-functional collaboration). At the same time, they had to develop innovation and new services as expected by the board of Directors. This awareness called for a change in the Innovation strategy: they have to build a dedicated taskforce in charge of developing new products and services. This happens while the executives are working on the new strategic plan, which appears to be a good timing.

g. Sequence "g" [11]: the "right" moment to set the foundations of innovation (2013-2014)

In Summer 2014, HI was invited to a three-day workshop dedicated to building the New Strategic plan, including the Innovation strategy. The workshop includes approximately fifty people, the board of Directors, and twenty managers, such as HS. A consultant facilitated it. During that workshop, the groundwork initiated by HI during the previous years was at last put in motion. He recalls this moment as a turning show the innovation foundation :

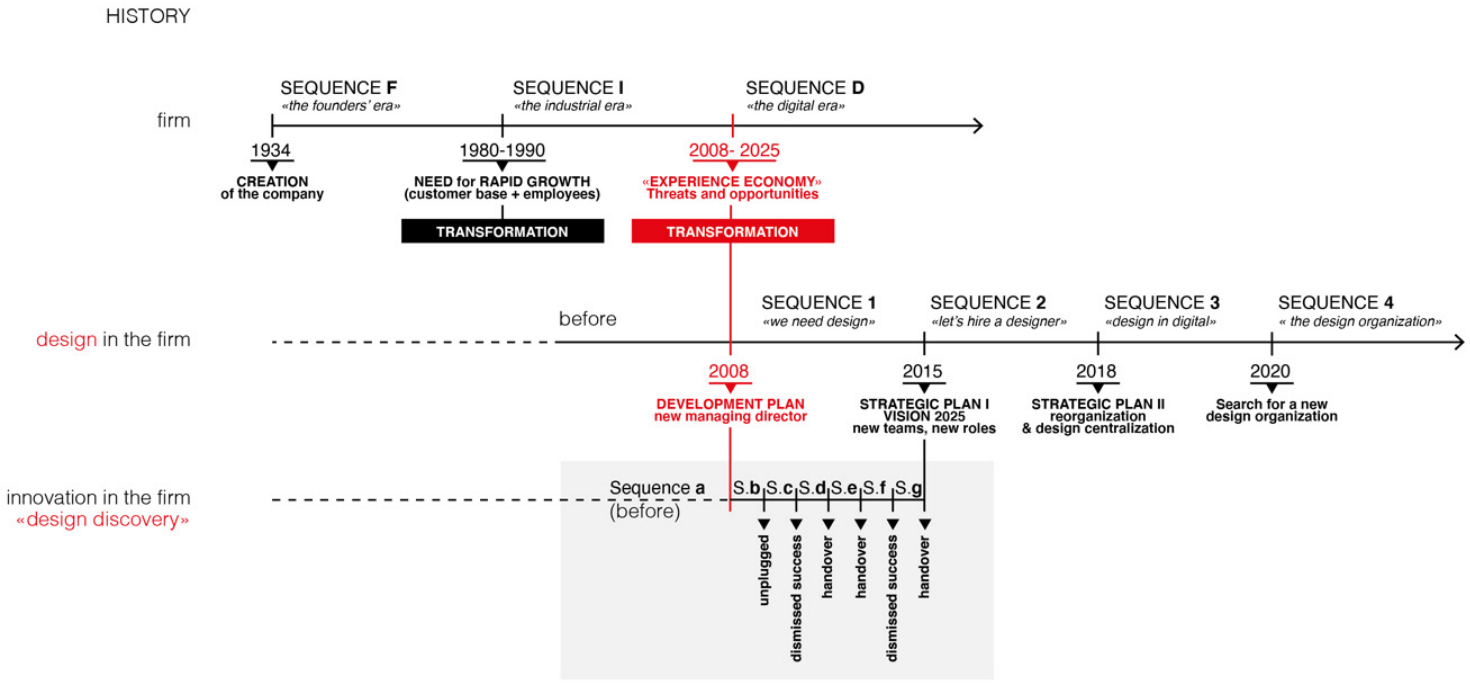
> "I remember very well the precise moment when my boss calls me. We're going to make people work on the role of innovation (as part of the strategic plan). This is happening right now. Now, I recall it because it was huge, you feel like you're going through something. You say to yourself you've been working on the thing for seven years, and now your boss says, «It's now or never.» So, I finally have the opportunity to push ideas that I've had for years."

He shares his ideas and insights with the group, and the Innovation strategy he envisioned is integrated into the strategic plan. Resources are allocated to the execution of this Innovation strategy, including a substantial budget and a dedicated team. This is a considerable evolution since the first denial of resources in 2008. HS works on the team organization chart. In this new team, he suggests hiring the first designer. HI left his position right before the completion of the Innovation team staffing. He

[11] Cf figure 31

explains that the pressure he felt and the pressing expectations for short-term proofs of value creation were exhausting and ill-suited to innovative approaches that take time. For instance, he said that he had to report twice a month to the board of Directors while being in the process of recruiting the team, which made him spend more time preparing the bi-weekly presentation than doing anything else. Nevertheless, he played a crucial role in Design discovery and the process of Design integration. Figure 32 below summarizes the results of each HI's initiatives.

Figure 32 - Chronology of sequences in Design discovery, focusing on the way each sequence was terminated



h. Design in the 2015 Strategic plan

Before the 2015 strategic plan and by digging into the organization's archival data (official internal communications, decision records, and summaries from the board of Directors' committees), I traced back the first occurrences of the word "Design" to September 2012 when an external partner approached HI to offer him to take part in an innovation program involving companies, students, and consultants:

"The concept is as follows:

- MAIF chooses an innovation theme that a working group, made up of students from the top schools and universities, will explore. It is possible to involve partnering companies in the working group. The work is conducted on a proprietary methodology led by our consultants. No financial contribution was requested.

For MAIF, the theme could be "Design" (in the sense of customer experience) in the service sector with a focus on its use regarding the experience of the policyholders, in particular the use of the after-sales service at the time of managing the claim, the reinforcement of the attachment to the brand: How can the experience that can only be lived by the members be valued by prospects?

Through the implementation of a "Design approach," the project would attempt to add value to what is not seen:

- Finding the means to materialize what makes the brand's strength, i.e., its ability to hold its engagements to its customers.

- Convert these resources into action levers to enhance the value of the brand in pre-sales and serve the development towards new targets." (Extract from the archives: a top management committee report of 2012)

Hence, Design is associated with "customer experience" and is clearly established as something of use in the service sector. It is considered beneficial to materialize and enhance the brand value to improve customer experience and reach new targets.

The second occurrence of the word we spotted is a few months later during a presentation of the HI to the board of Directors, where he promotes Design as a valuable method to develop and test innovation:

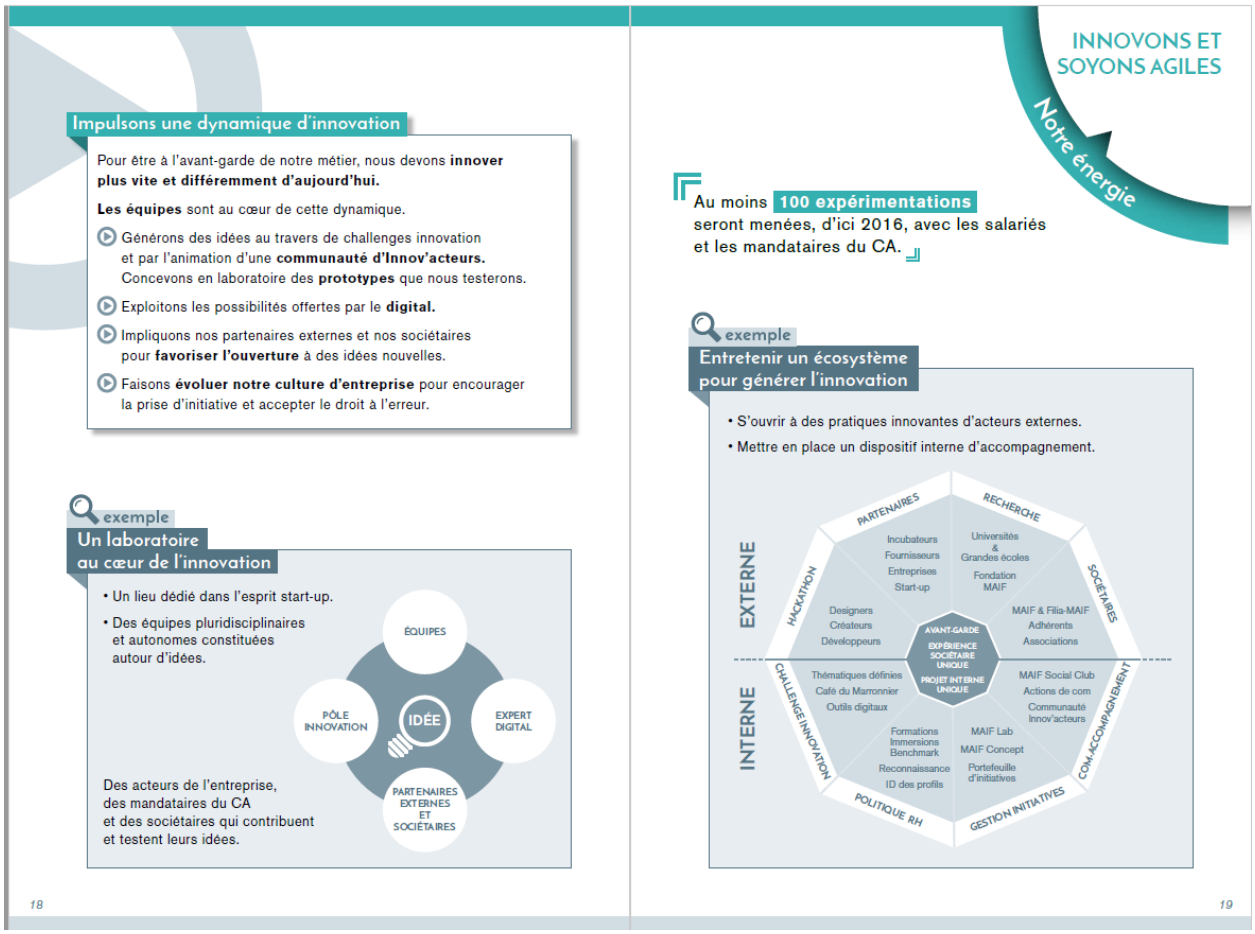
"A Design method to analyze, specify and test the future solution through scenarios."

Even though the HI did not mention those two events during our interview, however, he recalled changing his mind on Design and starting advocating to the board of Directors for its adoption after coming across the "Design" topic on several occasions:

"I thought about Design, in a very French vision of Design, that is to say, a thing of aesthetic, not at all for usability or else. I discovered Design because I'm extra curious. So, when I start working on innovation projects, I inevitably come across Design very early on. Also, I'm part of innovation communities. I meet with peers working in large organizations, and at that time, Design and culture are often two things we talk about. I soon realize Design is something to go for and start discussing it with (the Head of Strategy)."

The next occurrence was in 2015, in the first strategic plan that explicitly referred to designers as critical stakeholders in support of the innovation approach. The strategy relies on building "a community of individuals dedicated to the generation of ideas, prototyping, and testing," "a greater involvement of members [customers and end-users] and external partners" in the innovation approach, "a willingness to change the culture to encourage initiative and the right to make mistakes," a place dedicated to innovation "in the start-up spirit" as well as the creation of "multidisciplinary and autonomous teams built around ideas." One can argue that these mentions relate to Design and that, consequently, it is at the core of the Innovation strategy as of early 2015.

Figure 33 – Excerpt on the Innovation strategy from the strategic plan of 2015



2. Hiring designers and creating a team: "let's hire a designer" (2015 - 2017)

HS speaks about hiring the first designer as "the first conscious managerial act of Design at MAIF." The first Design job created is for a service designer within the Innovation team in 2015; then two more in the Digital Factory team in 2016 (a UX designer and a U.I. designer); one year later, in 2017, one experience designer job is created in the Digital team, to work on the experience company mission. Below, we will go through these steps.

a. The first designer at the Innovation team (2015)

The collaboration with a retail Design agency to Design the concept store is a turning point both for HS and HI, if not the company. The duo calls a French professional organization dedicated to promoting Design for help to write the call for tenders, select the agency, and work out the details of this first-ever Design commissioning.

Coincidentally, digging into the agency's work, HS discovers that the selected Design agency's CEO and founder curates a WebTV dedicated to promoting Design in a comic tone. He browsed through

the WebTV video clips and recalled one in particular that he found a bit zany: it called out for Design(ers) promotion at the CEO level in big companies. He says:

> "I grew an interest for the work of the founder of the retail Design agency, who in addition to being a quite a character, produced a lot of videos [...] I had subscribed to his YouTube channel [...] and one day there was a video [...] in which, so it's completely insane, of course, but, he was in a tree and he was saying «this is the happiest day of my life, because there's - I don't know who, I don't remember the name he cited - who became the CEO of a company ... [he] is a designer, and I'm convinced that all companies need to have designers in the board of Directors, because x, because y ...». ...it doesn't matter; it was an important episode, ...I matured on the subject at that time because I thought, «Well, this guy's got some things to say, and I ended up watching the whole thing."

Thus, when HI was tasked with defining the Innovation team suggested hiring a designer, the HS was on the same page. While convinced by the participatory innovation methods' value that brings together members from within and outside the firm, HI acknowledges the difficulties in facilitating these interactions and catalyzing such a heterogeneous team. In his research and training on innovation, he learned that designers could handle such a mission. HI is looking for efficient ways to respond to a pressing need. He thus calls upon a designer in a catalyst role.

This suggested hiring raised many questions among the Board of Directors and was supported by HS. Consequently, when the Chief Digital Officer expressed a need for designers a few months later, the board of Directors was prepared.

b. The first designers at the Digital Factory (2016)

In parallel with the Innovation team creation and following the launch of the websites and the App two years ago, in 2015, changes are undertaken in the three teams in charge of the internet distribution channel: the one within the Development department and those at the I.T. division in charge of technical development and project leadership. The three teams have difficulties working together, leading to conflicts and delays in the projects as one team manager recalls:

> "There were problems of scope, especially between the technical and the project leading guys, the roles were unclear and so were the referent people to work with and contact depending on the subjects. People didn't really know who to talk to."

The underperformance related to the collaboration issues raises a red flag. A new work organization has been set up: gathering the three teams in the same space to increase their interactions and facilitate collaboration. They are asked to co-create their future shared space and a new project management model. This was the foundation of the Digital Factory (DF) :

> "They told us "well, you co-construct, throughout 2015, the layout of the space with your teams, your modes of relationship, you change your modes of relationship, so that we create a Digital Factory." So, in the beginning, it wasn't called the "Digital Factory," [...] [but] the «Internet entity,» and then the word "Digital Factory" came very naturally during the year, in the third, fourth quarter of 2015."

In the fourth quarter of 2015, the managing director announces the three teams will merge into one at the new space's unveiling. However, this merger and geographical proximity are not enough, and silos remain :

> "So, there was this regrouping of all these entities in the same division. The fun part is, when you enter this space, back in early 2016, you had, (hesitation) you had an open space where you had all the technicians, an open space where you had all the project managers, and an open space where you had all the experts in the trade, so there was the regrouping, it was a physical regrouping, but only virtual, because in effect people hadn't mixed."

To take down the organization silos that persisted, the teams start working on a new project management model. They move from a linear and sequential model to an Agile model that relies on fundamental principles such as small multidisciplinary teams, transparency of information, empowerment thanks to clearly defined roles, great proximity with the end-user, and a test and learn approach that leads to shorter development cycles. This is fostered by the "the web-based model" as described by the DF manager:

> "The Digital Factory is the first Agile core of the MAIF Group and drives this transformation of the organization around the product and business owner/developer diptych in a company built around the notion of product. Let me explain. This followed a transformation of the project mode in service companies, managed in a very linear V-shaped manner, with very specific and precise specifications. And so that's a legacy of the 20th century, to move towards a much more Agile and web-based model, because it's the world of the web that brought this culture. It is organized around successive iteration cycles to find in the user's hands quickly, the feedback should allow us to continuously improve the product. And so this Digital Factory has been built to meet the challenges of digital transformation, the challenges of agility and the challenges of a new way of working in a company, a new experience for employees: multidisciplinary teams located in a shared work environment, clearly defined roles, a principle of autonomy and empowerment of team members, visual information management, and a central place for these Design professions which have historically made their appearance in innovation and the MAIF Group's Internet teams."

The job descriptions of the team members are transformed to fit the new roles of the Agile model. The DF manager describes the year 2016 as "really problematic and chaotic, but rich": the D.F. counts sixty-two people, including twenty-eight external consultants. It is divided into four groups: web analytics, traffic acquisition and performance, production, and user experience, for which UX and U.I. designers are required. It is part of the Marketing department, within the Operations division.
The previous teams have to join the four groups, and for some people, it means discovering a new job and acquiring new skills. This requires retraining, as the manager explains it :

> "An individual managerial and H.R. close accompaniment proves to be necessary for the team members, especially the ones in career change who are discovering a new profession for which they have only followed a few days of training. With, on top of that, a particular difficulty linked to default choices that later prove to be unsuitable, and people who do not recognize themselves at all in their new profession."

Undertaking UX and U.I. Design tasks are one of the new roles. For such people moving to a designer job, a three-week training in a Design school is offered. The manager recalls:

> "There's a natural mutation that took place on the part of people. People who were project managers naturally transferred to the position of Product Owner. On the other hand, people who became designers are essentially people who were before in the trade part. And they've all been trained on the Agile method; everybody has been followed up by an external coach. And on the Design part, all the people went to do three weeks of training at a digital Design school. [...] Well, the

> courses were more or less easy to follow depending on the person. But some people went into this profession because they saw no other evident choice, even though they weren't necessarily made for it. So, there was a little more support needed for them. There were people, notably one person in the UX Design department, who recently transferred to the Product Owner position because he didn't feel too comfortable in the UX department. He now feels way better being a Product Owner. So, there is, in terms of management, a support system that is set up, as the evolution progresses, to try to position people according to their appetite and their skills."

At the end of this accelerated training, some decided to quit the Design role and become a Product Owner. The newly trained internal designers encounter some difficulties in doing the Design work, so the manager decides to hire two senior designers, one UX and one U.I., acting as referent and coaches. In November of 2016, the first senior UX designer is recruited from a digital agency with the active support of the CDO (Chief Digital Officer). The designer recalls:

> "When I met with one of my to-be-teammate who was in reconversion, she tells me with no detours about the difficulties for them to find themselves turned into UX designers overnight, without a long training, without really knowing much about this job and without really knowing the outlines of it. And how helpless they felt in front of what they were asked to do, so I said to myself, I could help these people. It became my job."

A consultancy helps with the definition of the new roles, methods, and new project management model. They provide training before moving to coach the team in the development of the new products or features. At present (2020), they help other teams set the Agile approach's implementation across the organization.

Four years later (2020), the Digital Factory is a team organized according to Agile founding principles: multidisciplinary team "squads" working on dedicated products or features.

> "As of now, if you go to the Digital Factory, I dare you to say where are the technicians, where are the Product Owners and where are the Design people, because people are grouped by squad and grouped by product platforms. So, in the open space we have four project platforms, so people work together, and we have don't have any location problems anymore. So, this mutation from the Internet to the Digital Factory, was a long way, but it happened. I must say we had a very good Agile coach that actively contributed to create a bond between all these people." (quote from the D.F. manager, in 2017)

Hence in 2015, Design is set out as a critical enabler in the Digital strategy. The CDO points out Design as an enabler for a better user experience in presentations to the board of Directors:

> "It was part of the Digital strategy from very early on, that is to say that from March 2015, when I present the strategy to the directors and the Managing Director, this is clearly stated that Design is at the heart of our proposal and our model, [...] I think that at the time, apart from (the Head of Strategy) (pause), I am not sure that this is a subject that is part of the concerns of the operational staff and the board of Directors; because we're in service, we're in insurance and Design is still very much related to the world of hardware and product and not that much to the world of service." (interview with the CDO in 2018 about that period)

The CDO's awareness of Design comes from his previous work experience and knowledge of the digital economy. As he explained it in the following excerpt, he is convinced Design played a key role in the *digital native companies'* success (i.e., the companies whose business activities rely on digital technologies) and saw it as a core capability to integrate as parts of the necessary digital transformation:

> "The particularity of the (…) digital economy, is about software, (…) rules of value creation are utterly different from those of the physical world, and that's specific, I would say, to the internet infrastructure, the power of computer

processing, that's a new law of economics. (...) that's for the back-office (pause). But over the top, the subject is the simplicity of the user journey while browsing the interfaces. It's the ability to capture real-time data on user behavior to improve the company's value proposition. In a nutshell, there's a tech topic, there's a data-driven topic, there's a User eXperience topic.

Those three ingredients are systematically mastered by the outsiders who attack one market after another, and for an insurer, I think the use case that marks the most is Tesla. It's Tesla because it's actually a car manufacturer, working on a smartphone on four wheels; it's basically a box that comes from the digital world and that, in an industry as complex as the automotive, is going to succeed in redesigning a mobility and driving experience. (…) It speaks to us because we're a damage insurer, so (…) all of a sudden the car is more of a dashboard, an interface, and if (the company) doesn't master the interface, it loses the direct relationship (...) that is currently its strength, and therefore the B to C positioning would be threatened and called into question, then fundamentally, the whole economic model could be smashed." (interview with the CDO in 2018 about that period)

He insists on the threat to the current business model of losing the direct relationship to the customer, which is core to the competitive advantage, if the firm doesn't tackle User Experience, Data, and Tech issues.

c. A designer for the Experience Company mission (2017)

The company already has a strong "customer focus" due to its mutualist model and its values. This "customer focus" is not only proudly claimed by the board of Directors and internal employees but as well recognized by competitors in the sector based on the results of the annual "Customer Relationship Podium" national ranking run by external parties. The company distinguished itself from its competitors over the last fifteen years in the French insurance sector's customer relationship ranking by maintaining the first place and regularly appearing among the top three in the French multi-sector ranking. However, the gap with the competitors' scores was narrowing, and the board of Directors sees this as an early warning sign to pay attention to. Moreover, they acknowledge that this first does not prevent customers from sometimes having poor experiences. They noticed a gap in the satisfaction expressed by most customers that serve as a reference and the employees' experience as MAIF customers. This paradox moves the focus from customer satisfaction to understanding the experience they live resulting in the launch of a mission dedicated to the customer experience improvement:

"We stumbled on the paradox of a rather exceptional and recognized customer relationship that was not consistent with the experience that many of us (employees) had. Besides, an employee is probably more patient than the average customer because he/she is familiar with the company and its shortcomings. Despite that, we lived, well, I didn't have many disasters in my life, but I had one or two, and I thought it was a rough path, I had to deal with children becoming customers on their own, things like that, and the experiences were really bad.

So, we said to ourselves (the board of directors), "there's a real subject in experience, and for that subject too, we need skills, UX in the sense of the digital user experience (browsing on the website and so on), but also as User Experience in general beyond the digital channel." So, that's when we launched or convinced the managing director to launch a program called the Experience company mission, also named UX company. I think that's what it was called at the time. And we convinced everyone that there was a subject and that in order to deal with this subject, there was also a need for Design skills, either Interface Design or User journey Design." (interview with HS)

The topic of User Experience is initially approached through the digital lens. Many projects are launched so that the digital interfaces meet the new "standards" and customers' expectations, as the CDO states:

> "Twenty years ago, you might have agreed to wait five minutes on the phone, you could wait in line for twenty minutes, but that's over, and whether we like it or not, today you want to be able to track the delivery of your package, be delivered in 24 to 48 hours, even five days before Christmas, it seems normal, being able to book a hotel room online and have access to photos, that's just the basics, paying for a taxi ride without having to take out cash, well yeah it's just normal. It wasn't five or six years ago. And why are industries today shaking on their foundations? because they neglect their users."

However, to raise the board of Directors' awareness of the User experience value, the CDO commissions a learning expedition in the Silicon Valley, where they met with several major players, including Google, Dropbox, and some insurtech start-ups considered as UX leaders. The CDO underlines the role this learning expedition played in connecting user experience with Design:

> "We [the Board of Directors and some additional participants from the executive committee] are going on a learning expedition in 2016, in San Francisco, and there is not a single company where we don't realize how vital Design is.
>
> We've met Dropbox, Google, Metromile, insurtech start-ups, we've met with Slack employees, we've met IOT companies, we've met an investment fund called Andreessen Horowitz, we've met the valley in all its different faces, and there's not a place where we haven't felt the importance of Design and user experience. [...] Not only in the products they offer, not only in the value proposition but also in the working environments and the corporate culture."

The learning expedition raised awareness on the employee experience in the workplace as well. Therefore, in addition to exogenous motivations, such as establishing new customer relationship standards, there are endogenous motivations, i.e., the board of Directors' desire to transform existing managerial practices and the company culture to foster innovation and enhance employees' wellbeing as recounted by the CDO:

> "Speaking of user-experience [...], an open-space at DropBox is not the same thing as an open-space at La Defense (one of Paris central business district), and we don't say «Well, they have a good taste,» no, in fact it was planned, it was well thought about and designed. And it always starts the same way, with state of the art user research, that captures the needs, the irritants, the strength and weaknesses of the user's experience and then they work on the improvement."

Those exogenous and endogenous motivations led to the decision to allocate resources, upon the CDO proposal, to work on the experience of customers, employees, and, more generally, any stakeholders. The topic of experience is no longer an operational preoccupation but a strategic orientation. The CDO insists on adopting a systemic approach to treat user experience transversally, beyond the digital channel. It leads to creating the "Experience Company mission" in March 2017, under the digital transformation scope. I am hired as a designer and Design innovation catalyst one month later in this mission, reporting to the CDO. The first months are dedicated to elaborating a vision and raising awareness of the User Experience company-wide. The following excerpt from the presentation of the mission to the executive committee synthesizes the objectives pursued:

> "The major and first priority in 2017 is based on our ability to change the corporate culture as a whole by aligning all stakeholders (headquarters - network - customer representatives - managers - employees) around a new ambition, a new battle: the "Experience Company." We shall clearly define it, deploy the first bricks, and put the teams in a position to Design to set the Experience company in motion."

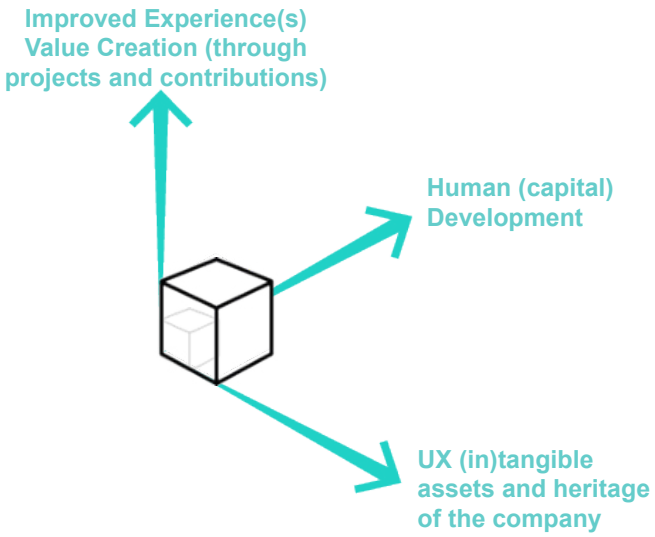
The Experience mission roadmap has three objectives: (1) to raise awareness and train employees on "user experience," specifically focusing on the upskilling of project teams, (2) to formulate an "Experience strategy" and then to work on its implementation (this includes for instance dedicated KPIs), (3) to contribute to MAIF key stakeholders experience improvement, delivering solutions and demonstrating the impact. The latter is divided into three types of projects:

- the correction projects (i.e., aiming for the improvement of what is already in place, in the short term by the identification and implementation of quick wins)
- the innovation projects (i.e., the transformation of existing solutions, services, and products in the medium term)
- the anticipation projects (i.e., prospective actions and exploration projects to shape a longer-term vision).

Four key stakeholders are identified: the customers, the employees, the suppliers, and the customers elected as representatives. The latter is a mutual companies specificity. Customer representatives are tasked with defending their interests while facilitating the firm's communication and development. They are approximately seven hundred and take part in the governance.

I contribute to the three objectives as a catalyst: (i) the upskilling of employees on experience Design, through keynotes, communication, training; (ii) projects, bringing in the Design competency; (iii) the Experience strategy formulation and any related material helping to achieve the mission's goals or the development of the organization's experience related intangible assets. I built the following chart (Figure 34) to synthesizes the mission's objectives :

Figure 34 - Design contribution to the Experience company model



Experience Design, as opposed to services or digital products, is a relatively new field of application for Design beyond the specific case of the studied firm.

3. Reuniting Design teams in a digital department serving the Digital strategy (2018)

In 2018, a specific team dedicated to experience was created within the Digital team that turned into a department (see Figure 35). This team included the CDO, one project manager, and myself. At that time, designers have been hired at the Innovation team working on new offers and services. The Digital Factory was working on the digital channel of interaction with customers.

As in many cases, the second strategic plan leads to a reorganization. As part of the 2018 reorganization, the three Design teams (innovation, DF, and experience) are reunited within the "Digital department" that belongs to the Strategy division. The following organization charts (Figure 36) highlight the changes in 2018 compared to the structure in 2017.

Figure 35 - organization chart describing the organization in early 2017

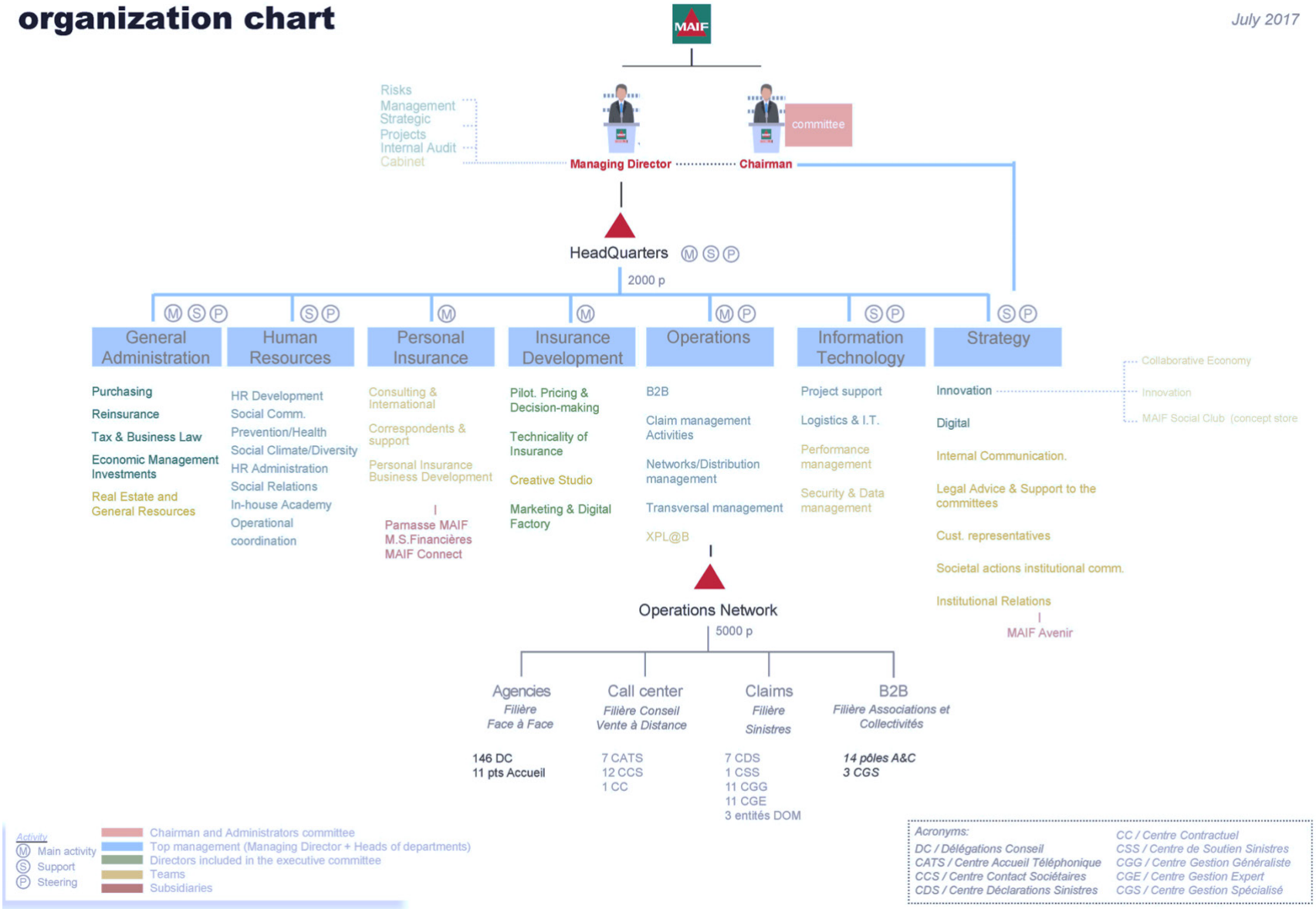
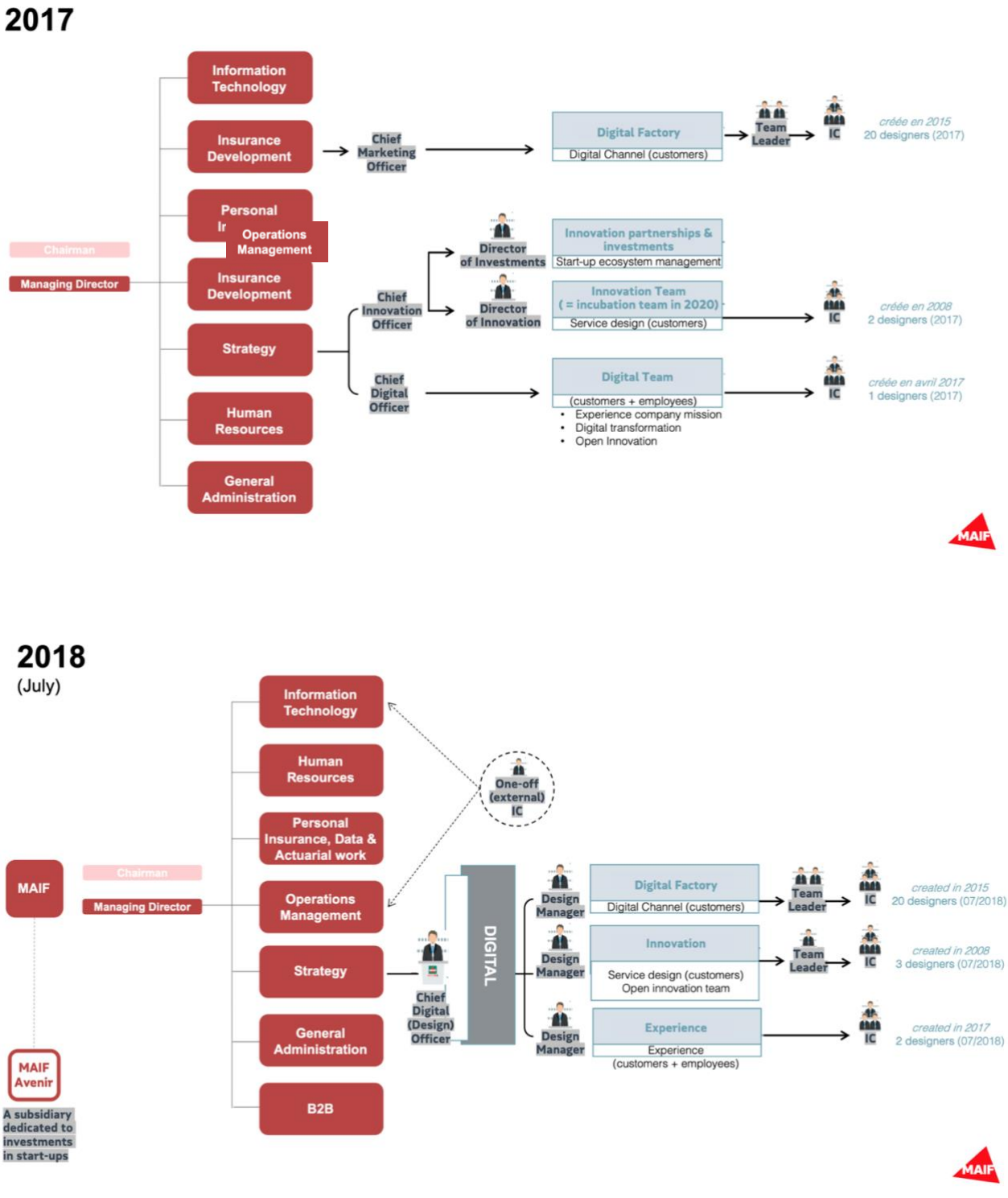


Figure 36 - The Design organization at MAIF and the changes in the 2018 reorganization

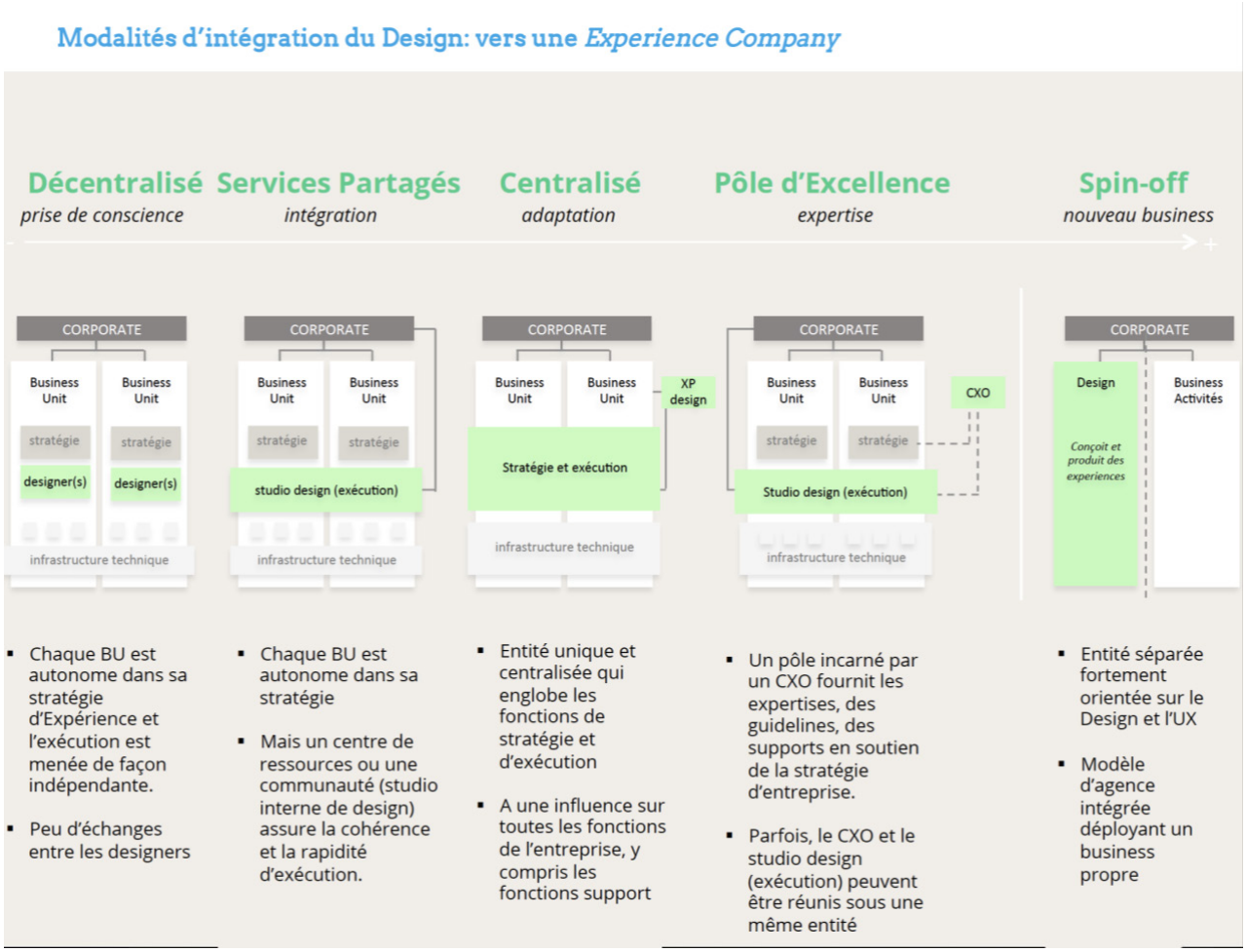
(I.C. in the following figures stands for Individual Contributors)



a. From a decentralized to a centralized Design organization

Following designers' progressive hiring, there are in the beginning of 2018 a dozen designers in the Digital Factory, three in the Innovation team, and one in the Experience Company mission. These designers spread in existing teams from various divisions (Operations for the DF and Strategy for Innovation and Experience) are gathered in the Digital department headed by the CDO. This Deign reorganization is discussed at the annual summer prospective meeting of the Directors board in July 2017. Five types of in-house Design organizations are proposed (adapting a typology developed by a consultant) (see Figure 37).

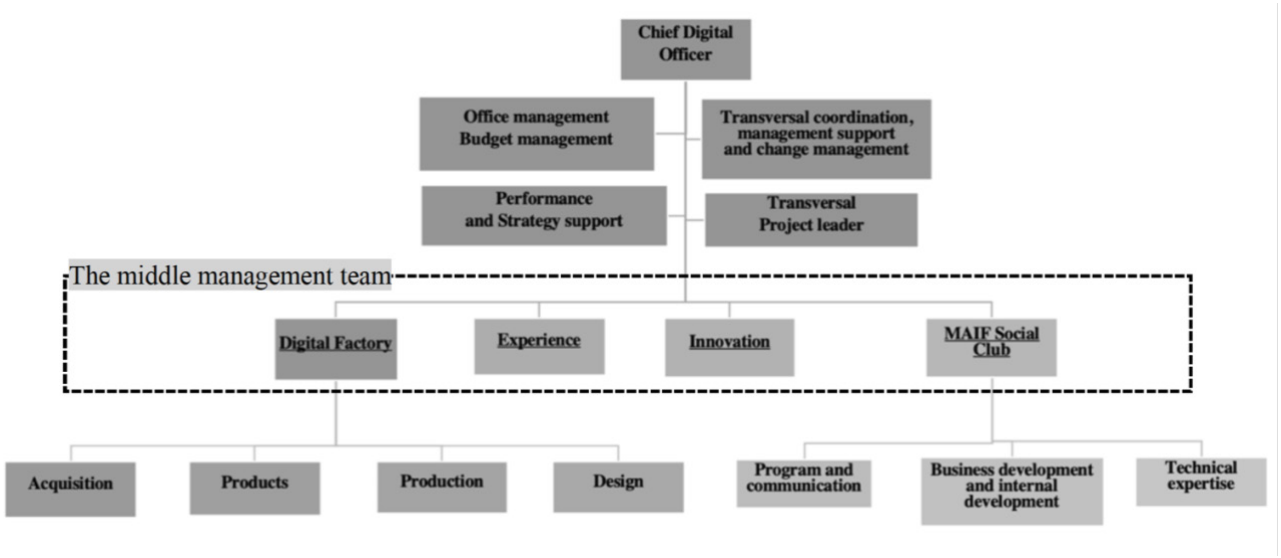
Figure 37 – Models for Design embedded in organizations (adapted from "Digital Organization models" by Bennet Harvey, for Accenture)



The centralized model (in the middle) is chosen; it leads to a centralization of Design resources in a department and having designers work on transversal projects and projects for several Business Units. A small team around the CDO facilitates the collaboration with other departments.

The newly Digital department brings together nearly 150 people in the organization displayed in the following figure (Figure 38) as of July 2018.

Figure 38 -Organization chart of the Digital department (part of the Strategy division



The Digital department middle management team is in charge of aligning the teams' strategies and roadmaps to support the Digital strategy and establish transversality. Before this centralization, the teams did not collaborate much and lacked visibility on their roadmaps that could benefit from joint efforts.

In this organization, each team presents its most recent or striking projects or strategy updates to the others in a half-day event organized four times a year, opening the way for discussions and suggestions. A general performance report is shared along with updates on the company strategy and the Digital strategy. The Digital strategy became the Design teams' main driver: their objectives are focused on the Digital channel development and the customer experience improvement across channels.

b. Additional changes to designers' teams

The reorganization resulted in several changes across the teams.

Previously under the Innovation team's scope, the concept store becomes an autonomous team in the Digital department. It is considered a new channel of interaction with customers. The concept store team does not have any designer attached but works closely with the designers from the Innovation and the Experience teams.

As a result of the DF annexation to the Strategy division rather than the Operation division, the team is no longer primarily driven by insurance products' support but instead by the Digital Strategy. In other words, the DF performance is no longer measured in terms of projects' delivery, but with the same metrics that are used to measure the quality of service-delivery to customers (e.g., the response rate to customers phone calls in call centers) and the customer's satisfaction. A subgroup of "Product Owners" is created. A senior designer previously working for a broadcasting company is hired as a

Design manager for the subgroup in charge of "UX/UI Design," he is the only Design manager in the organization with a Design background.

As each team has a newly appointed Design manager, a Chief Experience Officer is appointed to lead the Experience team. She has no previous experience with Design, but she was part of the experience mission's steering committee as the team manager in charge of customer representatives after being in the H.R. division.

A Design manager within the Innovation team was appointed: he was part of the experiment about the digital tool developed in three months. He has been working in the company for a bit more than a decade and has been the I.T. division's correspondent for the digital transformation. He was chosen for his Digital expertise, which allows the team's missions to be reoriented to serve the digital and Design strategy led by the Chief Digital Officer.

B. Design development (2018- 2020)

Since the period of Design discovery in 2008, the designers' headcount grew substantially. New jobs were posted and job descriptions updated, leading to new hires and training. First serving the Digital strategy because the digital channel has become a channel on its own, taking over on the historical one through phone calls. In 2019, for the first time, the number of customer interactions on the websites (more than 12M visits) surpassed the number of incoming calls (11.7 customer calls). Digital interfaces (websites, tools, and apps) are now fully part of the employees' and customers' daily lives. During the covid-19 crisis, the company managed to maintain most of its activity remotely, partly thanks to previous work on cultural evolutions and the implementation of new tools as part of the digital transformation, but also thanks to a modernized I.T. infrastructure that enabled to deliver in record times the necessary hardware and software equipment to people that lacked the last bit of it. The board of Directors started assessing Digital performance as equally important to the historical channel of interactions (i.e., call centers, agencies, customer services). In 2020, the Digital strategy focused on developing and maintaining this newly established digital channel in coordination with the historical ones while helping the ongoing I.T. working on the data and tech expertise. The Chief Digital Officer is working on a new Design organization and the definition of a proper Design strategy to combine with the Digital strategy.

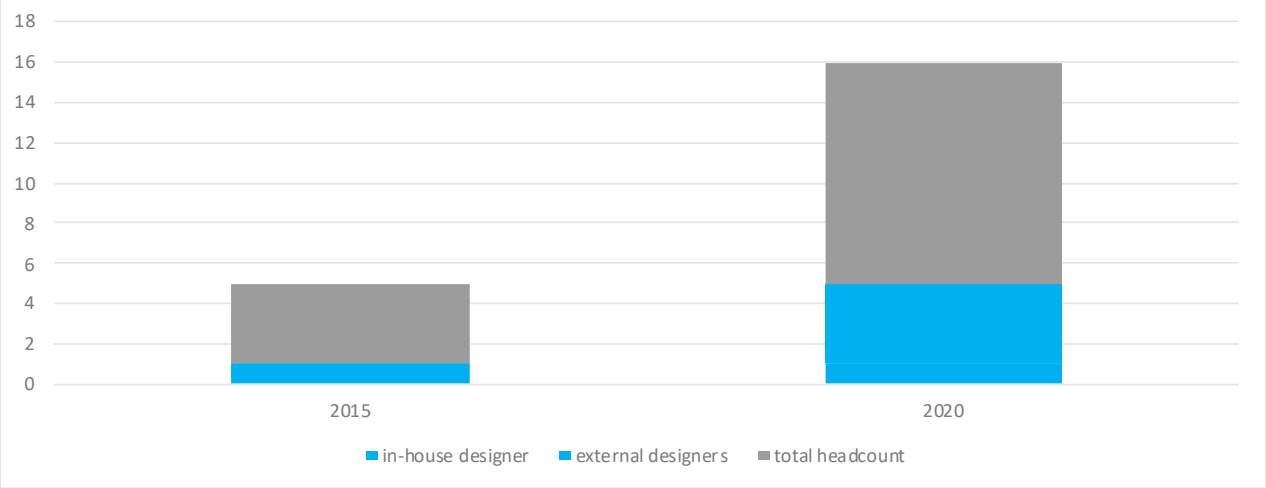
1. 2015-2020: From 0 to over 50 designers

In 2020, the company employed fifty designers, whereas there was none in early 2015. Twenty are in-house designers on permanent contracts, and thirty are freelance designers with fixed-term

contracts to absorb the workload. The designers are unequally distributed in the teams. We present in the following the evolution per team.

In July 2018, the Innovation team inherited from the Innovation Department created in 2008 comprised nine people, three externals. One designer (the first at the firm level) has been hired in 2015. In early 2020, the team counts sixteen people, including five designers (one in-house and three freelances). Figure 39 shows (with the blue bottom part of the bars) the growth of the number of designers involved between 2015 and 2020.

Figure 39 - Graph representing the evolutions of designers' headcounts assigned to the Innovation team.



The DF headcount doubled in four years: from 65 in 2015 to almost 125 people in 2017 and 130 in 2020. Seventy-one are external experts. The Web Analytics and the Traffic Acquisition sub-group remained more or less the same in size. The User Experience sub-group, where the designers are, has almost doubled, moving from 20 to 38 people. Therefore, the sub-group was divided into two: the Design sub-group and the Product Owner sub-group. The Technical Production sub-group doubled as well but mainly with freelance experts. The graphs below (Figure 40) illustrate the DF team's growth and (Figure 41) the distribution per sub-group in 2017.

Figure 40 - Graph representing the evolutions of headcounts assigned to the Digital Factory.

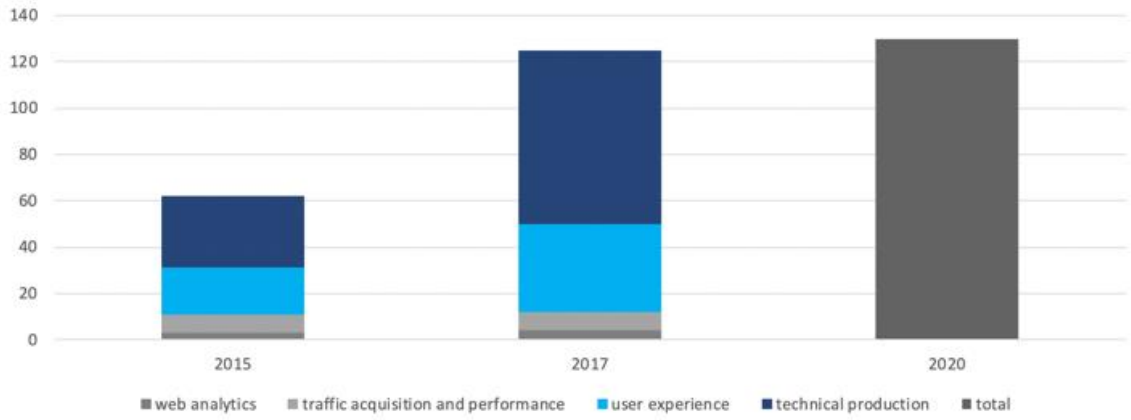
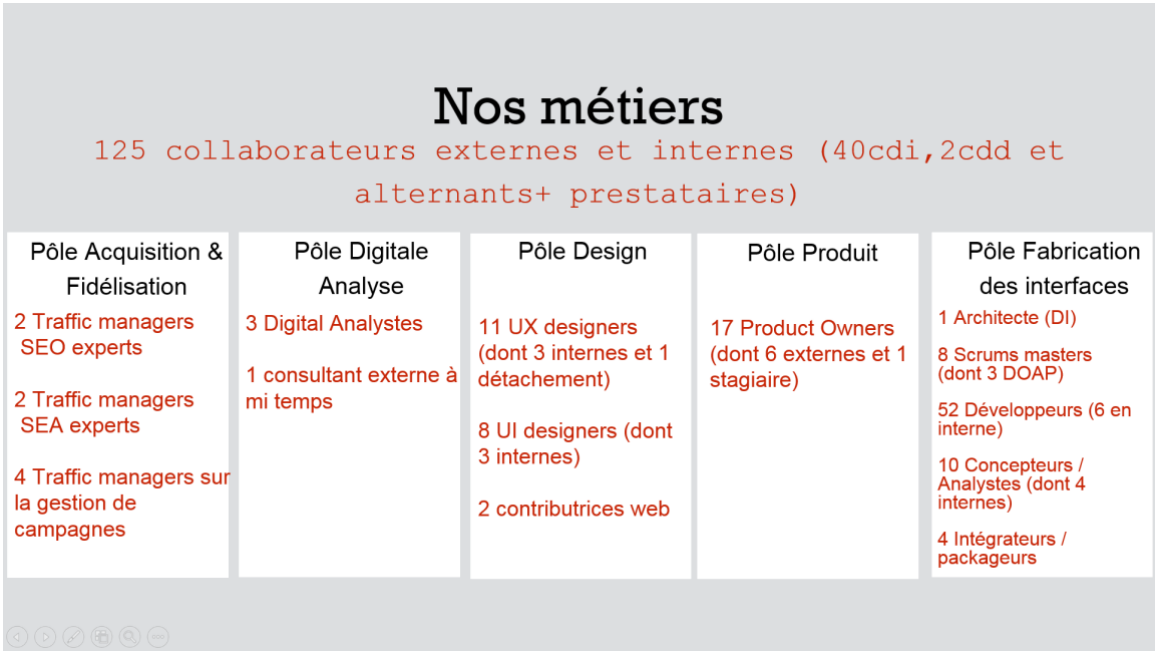
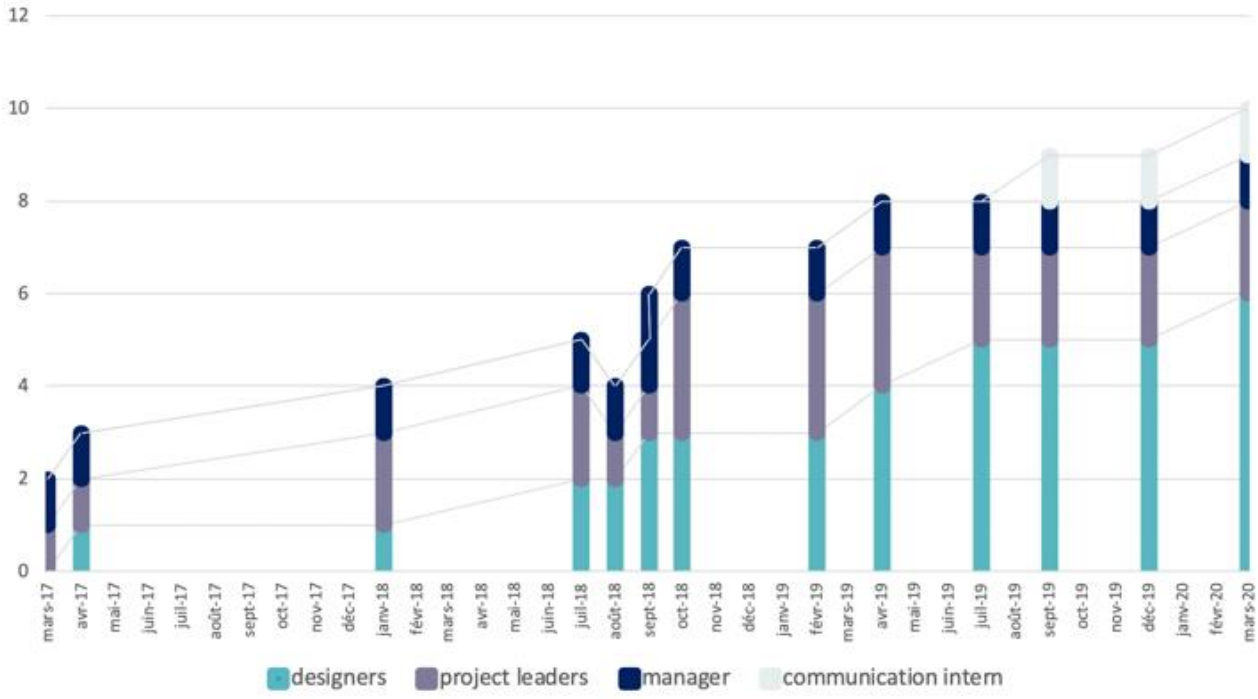


Figure 41 - Detailed distribution of headcount per sub-group in the Digital Factory team in 2017 (slide from a deck used to present de team)



The Experience team also evolved significantly between mid-2018 and 2020. A designer joins the team at the beginning of 2020, reaching ten people, including six designers. The graph below (Figure 42) draws the experience team composition's evolution between 2017 and 2020.

Figure 42 - Graph representing the evolutions of headcounts assigned to the Experience team.



In the last quarter of 2019, the CDO started advocating for creating a new team within the I.T. division to work on the employee digital workplace. This new team, created in January 2020 in symmetry of the DF, counts seven new designers.

2. Three phases of Design development

As a recap, in the following, we present the three phases of Design development within MAIF.

a. Emergence phase and the Design teams

Design is primarily brought in by the Head of Innovation and integrated to facilitate multidisciplinary workshops. Then, designers are hired in the Digital Factory to help with the prototyping and wireframes in digital product projects. Finally, the Head of Strategy envisions Design as a new set of methods to develop new products and services.

Design enters the organization in five ways:

- Through a concept store project in which an external Design agency is embarked to help create a new place that does not resemble any of the company's locations to build.
- Through the spread of Design Thinking used by external consultants in project teams and internal non-Design teams for continuous improvement purposes.
- Through the need for Service Design techniques to help with multidisciplinary project teams, participatory approach, prototyping, and participation in innovation projects.
- Through UX/UI Design, in the Agile development or digital products' improvement within the Digital Factory.
- Through the focus on customer Experience beyond the customer relationship to cover the workplace's employee experience and the customer representatives' experience.

There are three key sponsors to Design integration: the Head of Innovation, the Head of Strategy (part of the board of Directors), and the Chief Digital Officer (part of the executive committee). The three of them continuously work on convincing their peers, the board of Directors (the Heads of divisions), and the executive committee (the Heads of key departments) of the potential and value of Design. The Managing Director sponsorship appears to be decisive and facilitates access to resources and teams.

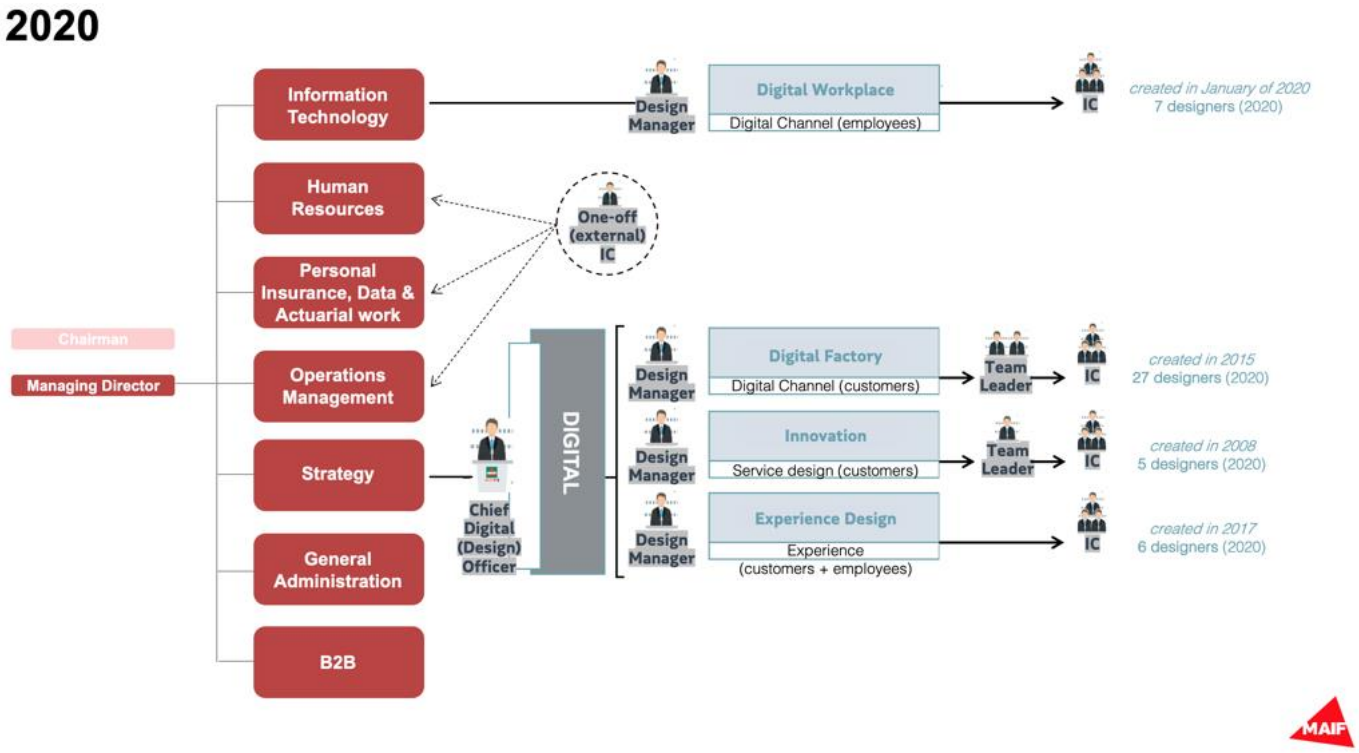
b. Consolidation phase and the Design guild

The consolidation phase, i.e., Design use, follows a phase focused on convincing the organization to integrate Design and the first designers hiring. As Design spread across projects in the organization, the need for designers grows. The more hired or commissioned designers, the more projects integrate Design. An increasing number of freelance designers are regularly commissioned by project teams and departments outside of the Digital department. For instance, several departments from

the H.R. division and others from the Operations division discovered Design with the Experience team or the Innovation team. They decided to launch their own projects afterward. Design developed organically; on top of the four Design teams that the organization counted in 2020, there are several individual contributors and peripheral practitioners (graphic, motion, and video Design work). They are united within a community of practice. The Design jobs are related to digital products (UI/UX), innovation (service Design), experience (service Design extreme scope).

The following chart (Figure 43) displays the Design organization in place in 2020.

Figure 43 - The Design organization chart as of 2020



In October 2018, the CDO asked the most senior designer, i.e., the DF Design manager, to create a "Design guild," i.e., a community of practice dedicated to Design. The aim is dual: first, the co-construction of the Design function at MAIF and second, the in-house designers' skills continuous improvement (e.g., thanks to peer-to-peer training, best practices sharing, mentoring) whether they are designers by training, retraining, or freelancing.

Several communities of practice, labeled as «guild» at MAIF, are created, e.g., there are a Tech guild and a Developer guild for I.T. experts. In addition to designers from the three Design teams in the Digital department, the "Design guild" gathers individuals working for the I.T., the Operation and the H.R. divisions, and graphic and motion designers from the "Studio" which is the internal communication agency working on print, video, and online content and performing editing and graphic work. Hence, the "Design guild" brings together in-house designers and external designers

commissioned on ongoing projects and Design-compatible experts such as ergonomists, Brand and Visual Identity managers, representing a total of sixty members in early 2020.

The Design Guild exists through several means :

- an online discussion space (dedicated discussion groups on the company's team messaging tool)
- joint transversal projects: mapping of Design skills, Design Systems, etc.
- times for sharing: conferences, meetings, lunches, workshops, etc.
- a common «policy»: for the sourcing of designers and service providers
- a monthly newsletter
- twice a month events
- dedicated financial resources.

Table 11 synthesizes the guild's objectives and what has been done in 2019.

Table 11 - The Design guild objectives at MAIF

The goals: "why the guild exists."	Key actions linked to the objectives: "what has been done."
To improve the way designers work, build on the collective strengths and the share of best practices.	On the discussion channels dedicated to the Guild, one is reserved to "WAYWO" that stands for "What Are You Working On ?" regularly, designers posts preview of their work and the methods they use. New tools and resources are shared and discussed on various discussion channels.
To implement new tools and harmonize our practices to gain speed and quality.	The Guild participated in the development and the launch of several repositories, including the Design system, to establish shared practices. (through several workshops)
To accompany the deployment of Design and experience tools for MAIF.	The Design System and the MAIF signature are two examples of tools efficiently promoted within the Guild.
To develop and maintain a top-notch business benchmark and a Design watch on practices and trends.	Several volunteer designers organized conferences and testimonies on Design at MAIF and offered practical training or experimentation workshops. A dedicated digital channel has been created to share articles, videos, and any sort of material sourced externally as part of benchmarking practices. As some financial resources were allocated to the Guild, it allowed for sponsoring a Design conference organized in Paris and Nantes that part of the group attended. The others benefitted from feedbacks and material shared online by attendees.
To reference and boost Design skills in the company, to develop our knowledge of Design at MAIF.	The Guild created a Design Skill repository to help designers assess their skills and be integrated into the H.R. skills repository. The Guild co-created with a dedicated H.R. team of the Design job descriptions to be integrated into the company repository. The explication of Design job descriptions led to the definition of a career path for designers. This contributes to the recognition of Design as a function of the organization.
To facilitate access to Design in projects (help with freelancers' sourcing, support, facilitate internal recruitment, give access to dedicated resources).	The freelance designers are invited to join the Guild and designers from the Guild to help project teams in the hiring and onboarding process and follow-up. A project dedicated to Make or Buy tackled the management level established the strategy by Design job type regarding the balance between in-house Design resources versus external resource allocation.

Once positioned in the organization and the resources stabilized, the risk for Design is to be ephemeral following a managerial fad that can be avoided by entering the institutionalization phase.

c. Towards the institutionalization phase

The Design Guild contributes to Design institutionalization because it works on the development of Design on a transversal level beyond individual contributions. However, as long as Design is not included in the official Human Resources repository, it is hard for teams to hire or commission designers because no grid exists to specify the need or assess the qualifications required for a work or a position. Past the hiring, the lack of adequate job descriptions and organization standards remain a challenge for Design managers, unequipped to monitor and foster designers' skills development. Design integration in the official Human Resources repository seems essential for Design and designers' growth in the organization. The recognition of Design as a function also means being able to explicit Design jobs and align heterogeneous individual Design practices at the community of practice level to bring unity and consistency. Non-Design teams ask designers and Design managers for more legibility.

→ A new function in the HR base

As Design jobs did not exist in the H.R. system when the first designers were hired, the H.R. representatives chose an alternative job description that seemed to be the closest: « pre-decisional analysts.»

From a new role to new job descriptions

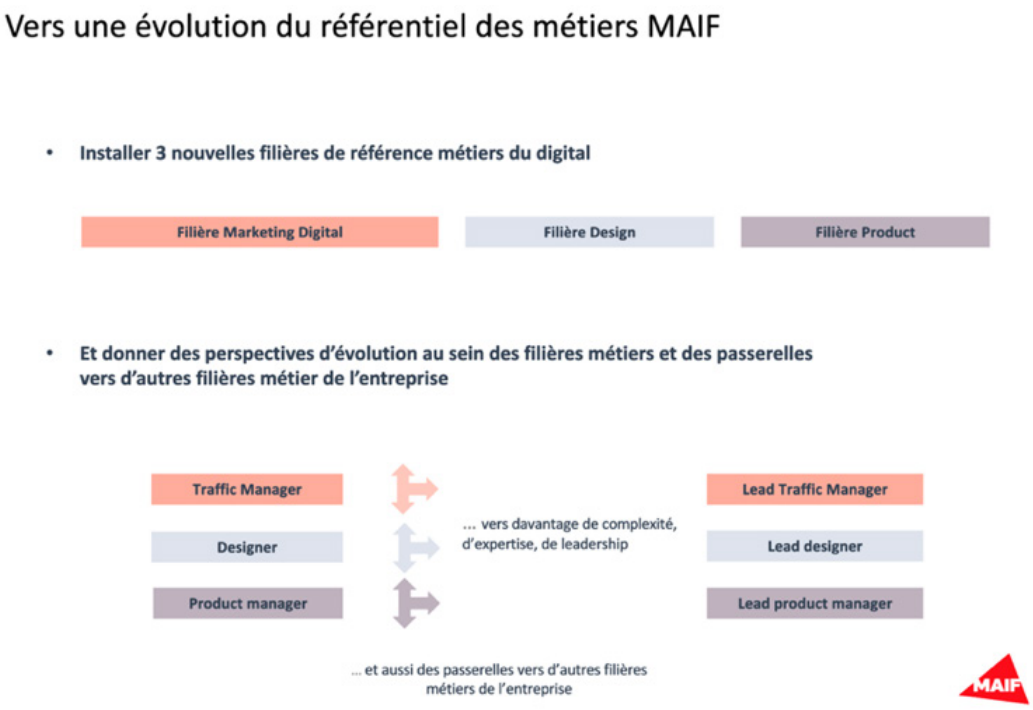
Design was considered a role consistent with conducting research that led to recommendations towards a decision. While "pre-decisional analysts" may be the closest one to Design found at the time, it provides no information regarding the actual job (to be) done, nor the differences between the in-house designers' expertise. The competency grid that corresponds to this job description has nothing to do with Design activities.

Consequently, Design managers have no grid to use to assess people's skills in their teams, nor identify the need for complementary profiles to hire. Another consequence is the absence of a career path for designers in the organization. Once hired, the designer is not part of the existing H.R. system of skills reviews that open the way to evolutions. Therefore, the team in charge of training in the H.R. division does not provide any designers' track. This lack of a reference is also detrimental to hiring; it leads to very heterogeneous criteria, dependent on the individual in charge of recruiting and proves to be very difficult for non-designers to spot differences between profiles with very different backgrounds qualifications. The increase in designers hiring called for a clarification of the Design jobs and establishing a dedicated common repository to refer to. This repository would be of use to the designers' managers and the H.R. teams.

Mid-2019, the CDO mandates the DF Design manager, a project manager from the Digital department, and an external innovation agency to draft a design competencies cartography. A small group of designers from the various Design teams contribute to this project. The H.R. division works

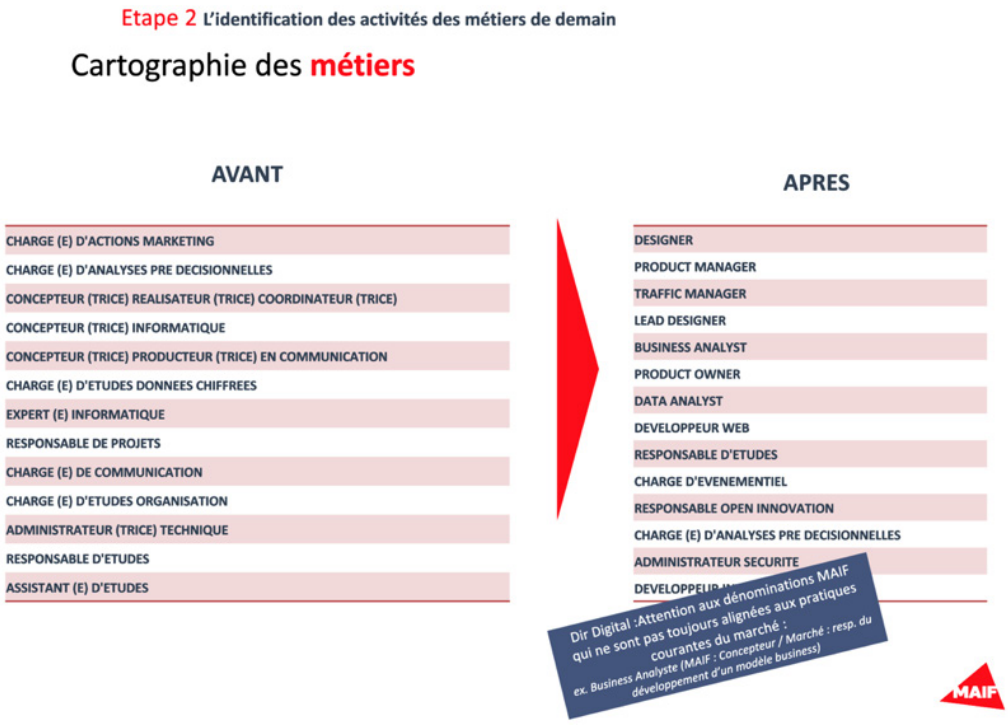
with the CDO to create the "Design function" and two other new Digital-related functions: Product Ownership and Digital Marketing (traffic manager). They define a first career pathway with two levels of evolutions: designers start as individual contributors before becoming Lead designers, as the following figure (Figure 44) illustrates:

Figure 44 - Slide from the H.R. showing the template for a career path of the new digital functions (July 2020)



The job title will, as of the new job description, displays the word "designer" or "Design." (Figure 45)

Figure 45 - Slide showing the title before and after the project (HR presentation July 2020)



Aside from the operational needs of defining these new functions, the CDO sees the recognition of those functions as a necessary response of the firm in light of its environmental changes. Each new function (Design, digital marketing, and product ownership) is linked to various business imperatives such as the ability to include data in the new product development, the customer-centricity, the implementation of new customer experience standards, and the need for new practices to boost innovation projects providing new project management structure or new methods and practices.

The intricate cartography of Design competences

Mapping designers' skills was not an easy task. It resulted in a spreadsheet that classifies three layers of skills: a general mindset, transversal skills, and a distinctive skill set proper to each Design job. The first layer is the shared foundation to describe the desirable soft skills any employee working in the Digital Department should demonstrate. It includes the necessity of being at ease with the context and acquiring sufficient knowledge on the insurance business and the firm strategy. It defines criteria for efficient collaboration and communication.

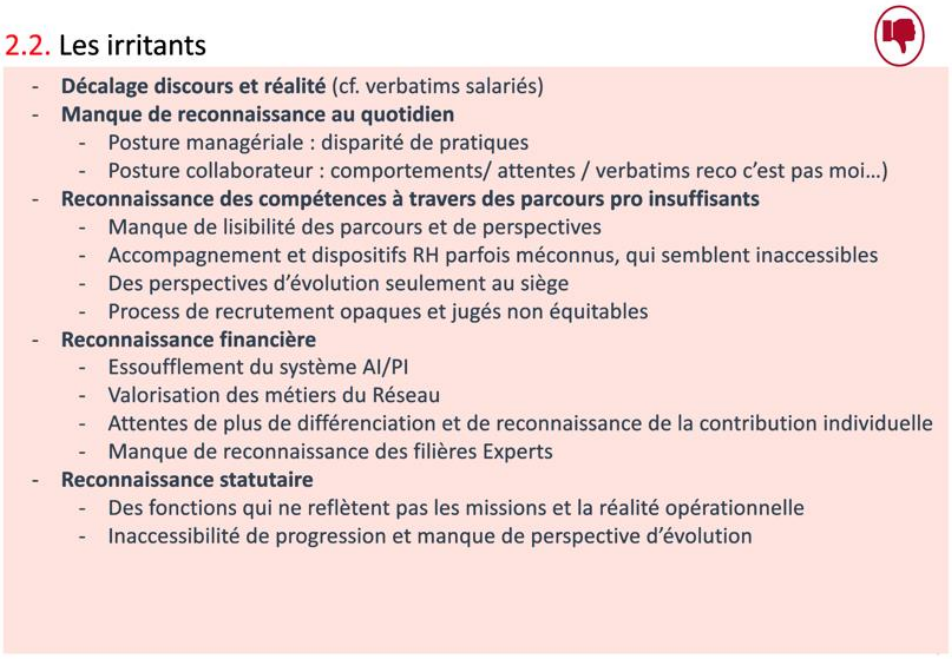
The second layer relies on the foundations and encompasses both the soft and the hard skills any designer should master. It defines the Design attitudes (e.g., empathy, curiosity, creativity, diplomacy, proactivity), but also the knowledge of the methodology to conduct analysis and test. It also defines general knowledge of the various jobs related to Design activities and the ability to handle requirements in a project.

The last layer is specific to the Design specialty: UX designer, UI designer, Content designer, and Service designer. It depends on the job: the UX designer and Service designer share some standard features, while the Content designer and UI designer differ significantly. The grid dedicated to UX designers is the most advanced since it covers various levels of expertise for the same job: from junior to senior and additional non-mandatory skills some designers have. As the designers from the Innovation team and the Experience team are service designers, they share the same grid. However, despite a similar educational background, they do not work on the same type of projects and fields of problems. Further work on the skillset grid could take this into account.

Challenges and implications

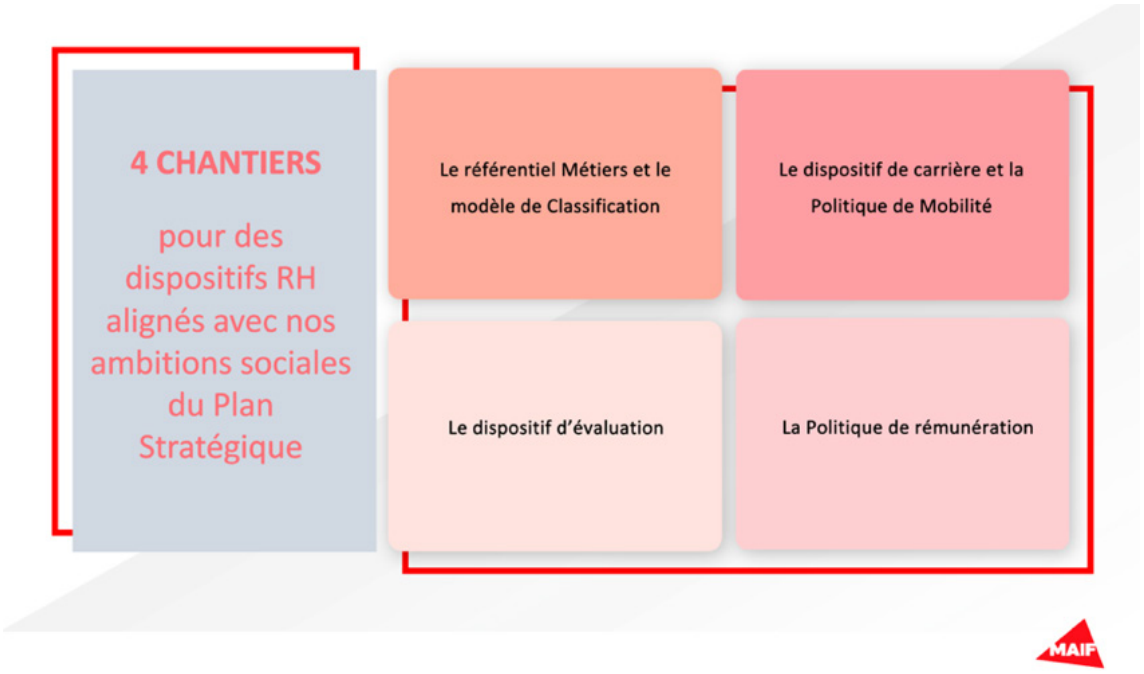
The work on the Design jobs descriptions triggered a more comprehensive update of the H.R. databases and system. One of the main motivations was based on employees' feedback in the quarterly questionnaire assessing employee satisfaction. In recent years, the survey evidenced a need for "recognition" that called for "job titles in line with the actual job," "better skills recognition," and "opportunities for growth and evolution." The following figures (Figure 46 and 47) show the most frequent pain points identified:

Figure 46 – A slide showing the synthesis of the pain points identified in the feedback from employees that motivated the job repository update (July 2020)



An H.R. team has been working on updating the system's foundations (including categorizing the reference and the H.R. processes). The production of new job descriptions for the H.R. database is the first part of a four-fold work that includes revising the career and mobility pathways, the evaluation and performance review system, and the salary grid compensation policy. The overall general update of the H.R. system and database has facilitated the integration of the Design function.

Figure 47 - A slide showing the four-fold work the H.R. division engaged in (July 2020)



The H.R. division will negotiate the new system and related conditions with the employees' representatives organizations as of early 202. The Design repository is already in use in the Design teams but should be officially in place by then. At that time, the job descriptions will be updated. It may call for new dedicated Design management practices such as Design performance reviews, designers' skills assessments, new hiring practices, or else.

→ Definition of a Make or Buy strategy for Design

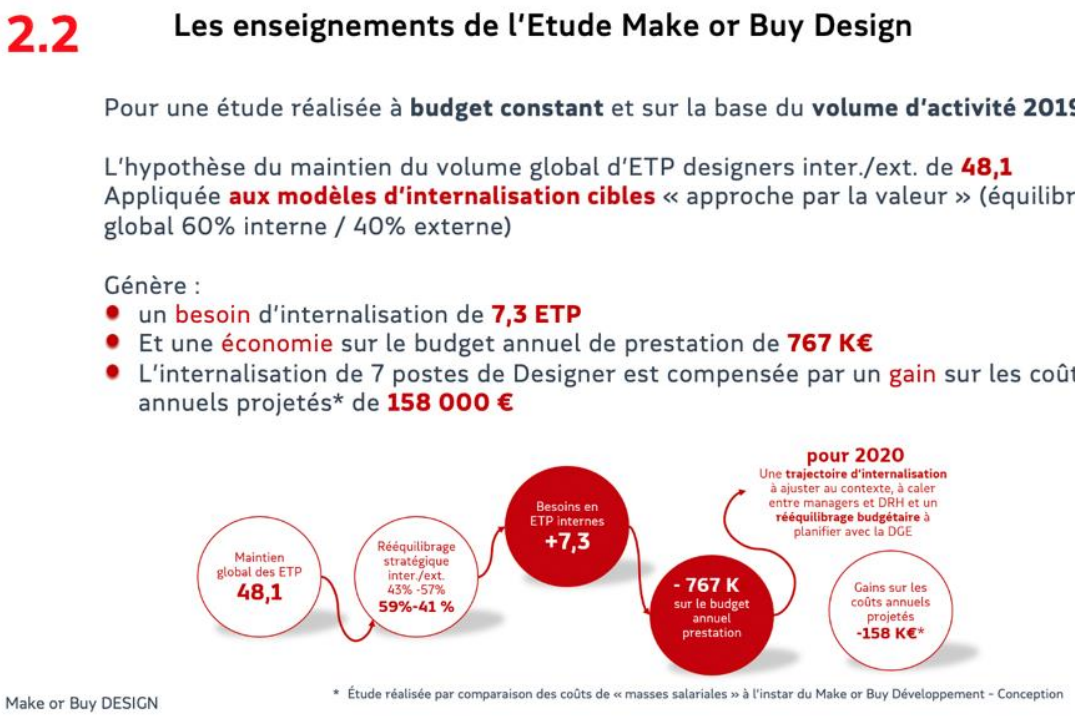
In the previous phases, the decisions about hiring in-house designers or contracting with freelance designers were driven by the Design teams' activities growth, to absorb exceeding work, and integrate Design in as many projects as possible when opportunities presented themselves. This resulted in teams with more external than internal contributors. A study was conducted in 2019 to ascertain the optimal Make or Buy ratio for Design at MAIF, i.e., the percentage of work undertaken by in-house designers versus external designers. It also specifies the type of work conducted by internal teams versus external teams, weighing each option's pros and cons. The objective of the study is formulated in the report as:

> "The 'Make or Buy' strategy aims to guide the choices of internalization/outsourcing of staff in each of the teams, establishing a global approach for MAIF and on all the perimeters considered of Design activities (excluding the creative studio for the Design sector)."

A similar study was undertaken in 2018 by the I.T. division for developers working on the I.T. infrastructure maintenance. The objective was to determine the level of expertise required in-house, not to depend on external parties, while having enough help to absorb the workload. A similar Make or Buy study has been launched for the Data Scientists.

An external consultancy worked for two months with the Design teams' managers to calculate the current ratio of externalization of Design activities. They collectively discussed the pros and cons, the needs of each Design team and worked out a recommended ratio. To reach the newly established ratio, several decisions were to be made, such as hiring in-house designers by the end of 2020 (three in the I.T. team, four in the Digital Factory). In April 2020, the Make or Buy study for Design recommendations was discussed and approved by the Board of Directors. It contributed to the creation of the I.T. Design team. This is a key milestone for Design institutionalization because it gives visibility on the financial and human resources needed for Design activities; thus, it aligns with managing resource allocation within the organization. In other words, top management can now consider Design in the same way as essential recurring work on the I.T. infrastructures or Operations maintenance when distributing resources. It is no longer a fluctuating side budget. Figure 48 shows the main conclusions from the study.

Figure 48 - Extract from the Make or Buy for Design study report



→ A new mission

On the 7th of July of 2020, the CDO launched a new mission, i.e., the "Design At Scale," with the objective of increasing the Design impact and value created. After developing and growing, the Design teams have to stabilize and optimize their functioning. This email from the Chief Digital Officer for the Design managers lays out the motivations behind this new mission:

> "Good morning everyone,
>
> As you know, Design has occupied a special position at MAIF for several years with a clearly identified role to play in the strategic plan (a key ingredient in our search for singularity). It is a business practice that is now structured (around 50 designers united in a guild) and tools and methods that are being installed in our daily practices (the Design system, the experience signature and user-centered Design methods).
>
> We took another step forward this spring with the Make Or Buy project, which established this new discipline, in addition to the 7 new in-house positions in the I.T. division. The creation of the designers' blog, a remarkable grassroot initiative, that demonstrates a level of maturity and commitment that we can collectively be proud of.
>
> But we still have a long way to go to reach the standards of the digital world, and there are still many internal obstacles. They are cultural, often due to outdated processes and a lack of understanding and knowledge of in-house Design (some people in a few departments still associate Design with Roche-Bobois furniture 🤦‍♀️).
>
> However, as we know it in this group, Design as much as technology constitutes for MAIF a decisive competitive advantage if mastered and systematized. I would therefore like to move forward and "scale up" this discipline in the coming months by relying on all the teams of the Digital department and the Design [community of practice=] guild.
>
> The first objectives that I assign to this mission are the following:

- Formalize and measure the strategic contribution of Design within MAIF.

- Update and harmonize the Design process focusing on discovery & delivery

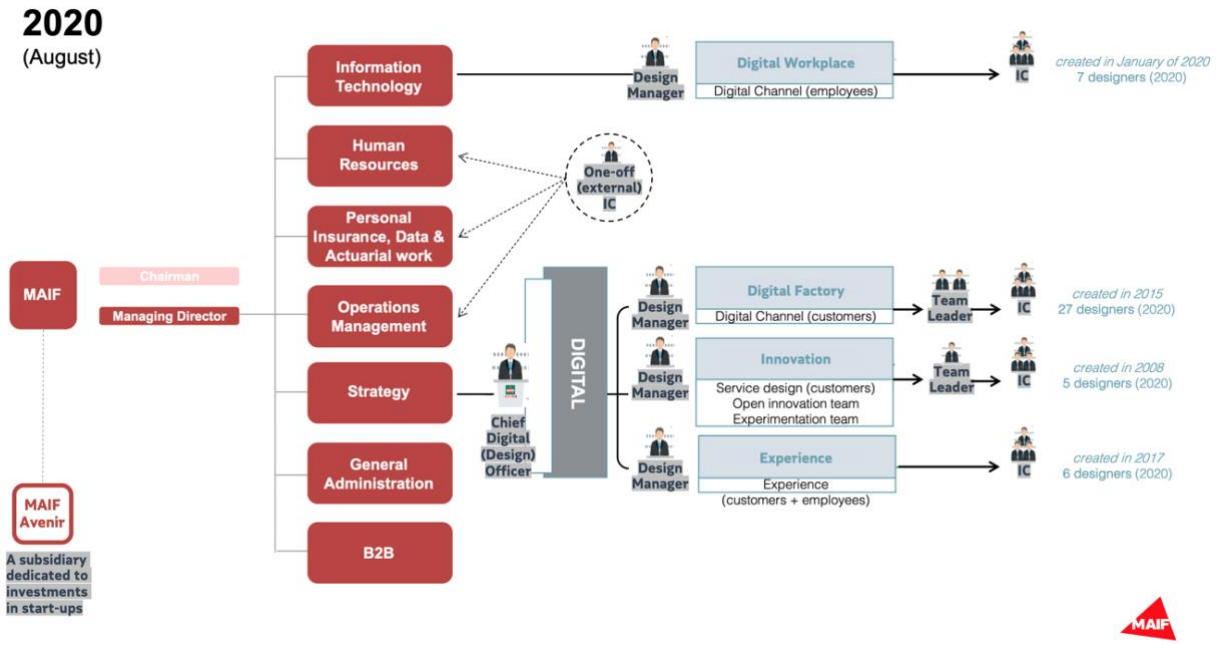
- Organizing and evidencing the Design function and achievements (HR grids of reference, communication, training paths, etc.).

[…] I'll end with this quote from Andreesen Horowitz, which sums up the challenge for the coming months: «Now - in the decade of Design - the interface no longer reflects the code; rather, the code reflects the Design. We expect better, we deserve better, we demand better... it's no longer optional to have good Design."

This mission questions the existing Design organization's limitations (we will present in part two for each team) and explores avenues for further development. It leads to the specification of some changes in the Design organization that should occur by the end of the year. It will include a Design Operations Officer in charge of *"the set of operations that make it possible to structure and harmonize Design practices at the MAIF"* (according to the new job description written in July 2020). His/Her role will be (i) to help the formalization and documentation of in-house Design tools to create a shared repository, (ii) to work on the MAIF new designer hiring and onboarding process, (iii) to define Design standards and procedures such as (e.g., the user panel recruitment process, the legal procedures such as consent collection for user study participation, and Design ethical considerations), (iv) to build an in-house training track for designers and last (v) to promote tools the standard Design tools built by the various Design teams.

The following chart (Figure 49) shows the Design organization at the end of this research scope:

Figure 49 – Simplified organization chart showing Design organization in August 2020



C. Questions raised from the analysis of Design integration at MAIF

The analysis of the integration and the development of Design within MAIF resulted in generic questions and issues that could be of interest for any organization adopting Design: (i) discrepancies in internal stakeholders' Design understandings, (ii) Design without designers, (iii) the specificities of Design compared to existing innovation approaches and (iv) the relation between human centricity, participatory methods, and Design.

1. Why is Design so challenging to explain?

Despite the development of Design within the organization, reluctance and misconceptions towards Design persist in some internal stakeholders' minds who keep associating Design with aesthetics. Furthermore, we identified ten in-house acceptations of the word "Design" that coexist: we analyzed the verbatim collected during interactions between designers and internal stakeholders and interviews in 2018 and 2019 (cf Table 12 for a synthesis).

The most recent definition that the CDO presented to the board of Directors in 2020 is a mix of those various acceptations :

> "Design includes the iterative construction activities of user journeys, interfaces, experiences, activities in which the end-user is placed at the center, to maximize product adoption and desirability."

Table 12 - The ten acceptations of Design coexisting at MAIF

	Acceptation	Description	Verbatim
1	**Design as a catalyst to help multidisciplinary teams work together to reach a specific goal**	In this view, the Design practitioner acts as a mediator at the crossroads of several disciplines. The designer is not an expert of the subject he is working on, but rather an expert of the way of working on the issue. To do so, the designer navigates between the user orientation (needs and habits), the business orientation (balancing objectives and potential ROI with costs), and a good knowledge of technology (including the tools).	"I think that in-house designers [...] must know how to manage usage, be user-centric above all else and also know how to manage business and tech tools very well, and it's essential [...] all in-house designers know how to manage all three. Because you have to know how to understand a user, his practices and his needs, as well as how to transform them into an opportunity for the company, but you also have to know how to bring new tools for the company to know how to generate a quick ROI on them." (from one of the innovation designers) "For me, Design is the combination of several disciplines that are as many social sciences as highly technical professions, professions that are very much related to business and professions that are also more related to visual representation. Each Design, each designer has slightly stronger components, with slightly higher notches in each of the disciplines, but for me, the basis is to know how to be the mediator of all that." (from one of the designers from the Digital Factory)
2	**Design as a set of skills to adopt a new way of looking at things as a trigger for proactive reflexivity and continuous improvement.**	In this view, Design is accessible to anyone able to look at things differently. This vision, mainly defended by the Head of Strategy, is in line with Brown's stance on Design (2008) that states that "Design is too important to be left to designers." This view is famous because it promotes Design thinking to make Design accessible to a general audience.	"The Design is a pair of glasses that allows one to see the world and its issues to adapt it to the eyes of the beholder to make it more acceptable/accessible and sharper." (one of the innovation designers) "make this intellectual gesture natural, spontaneous" (from the Head of Strategy) "For me, a working relationship or the answer to a professional phone call can be a gesture that is linked to experience and that obliges you to put yourself in a process between quotation marks of Design thinking." "bring Design skills to MAIF, which we did through the arrivals of designers and then introduce inoculate this prism or these glasses to as many people as possible to look at this subject with a little bit of height of vision." "I'm convinced that we need Design and that it applies to any function in the company, whether you're an accountant or a gardener or a lawyer, I think everyone can take ownership of the subject and profit from the approach, without necessarily becoming a designer." "For me, Design is associated with the notion of progress."
3	**Design is about creating something new.**	In this view Design is not only about continuous improvement as previously defined; it is also about radical change and creating entirely new products, services or experiences. The experience of the first Head of Innovation (that was working on educating teams on continuous improvement, developing an innovation capability company-wide while building an expert taskforce for innovation to create new products and services.) and the following quotes insist on the need for novelty and change.	"That doesn't mean that we shouldn't create things that users can't imagine themselves. That's why I said earlier that there's this notion of progress that combines both the continuous improvement of what we do and the ability to create new things." (from the Head of Strategy) "I would like us to have 30% of Design resources deployed on a given product, being used for continuous improvement, to deal with all the user feedback that we have on the courses, the difficulties they have on their courses, and keep the remaining 70% to foster the creation of novelty, new features." (from the general manager of the Digital Factory
4	**Design as a guarantee of user-orientation for product success.**	In this view, Design is seen as a specific practice to involve real users in authentic contexts. Design is for a user-centered	"We need to prevent people from looking at innovation the way we did it in the 90s when you designed a product without ever talking to a real user and saying, 'here we are, we know what's good for you, and we sell it to you, you buy it, and that's it." (from the Head of Strategy)

		conception; it is about creating a product or service that will provide the best experience for the end-user."	"We have finally understood that we are no longer a company that produces insurance contracts, but instead a company that meets user needs." (from the Head of Strategy) "Design ensures a systematic user orientation and (reflexivity) to think about the best way to proceed, «what I am doing here, does it make sense? will there be a use for it? and how can I improve on a daily basis what I make available to my users, my Internet users?" (from the general manager of the Digital Factory)
5	**Design is about improving people's life and facing complexity.**	In this view, Design is the ability to imagine a better world and to address complexity.	"Design is there to help individuals to support and adapt to the world around them. It's the eternal debate: we want to fit people into boxes rather than adapting boxes to people." (from one of the innovation designers) "For me, Design is about making complicated things accessible, understandable, clear, and responsive. Design exists to allow people to grasp complexity, so Design exists because perfection doesn't exist. It also allows you to sublimate something, to make it aesthetically pleasing, and therefore attractive, to go to the Designated (well-designed) object (interface, service, thing) when you wouldn't go to it in the first place." (from one of the people in charge of public affairs)
6	**Design as an activity aimed at building stuff.**	In this view, Design is understood as the verb 'Designing.'	"The Design of objects or services with a central intention: that they serve human beings by responding to their current problems while anticipating future ones." (from a project manager in the Digital department) "They are know-how and methods that make it possible to build things for oneself or for others." (from a project manager from the corporate training team)
7	**Design as a new way of doing things, quite similar to existing practices but nonetheless different.**	In this view, Design is seen as a method of innovation that has commonalities and differences from others	"This new way of doing things, I would say, it draws out all the trajectories that we have on all the products, [...] the project approaches [...] everything else that we have been doing but in a different way. We still have a margin of progress on that." (from the general manager of the Digital Factory)
8	**Design as a toolbox and a set of techniques.**	In this view, Design is restricted to one tool, e.g., a user journey or a set of tools or techniques, e.g., brainstorming techniques for ideation activities.	"Design is the adaptation of the tool to the man." "Design is the global vision of the interface and the related journey." "Design is about guaranteeing the coherence of a journey with the needs, the habits and the operating procedures of the workforce." "For me, Design is a set of techniques and tools made available to an organization or a team; to respond to a certain number of constraints, or objectives of use, which go in the direction either of an improvement in daily life or in the direction of a breakthrough, a creation, an innovation which will produce progress."
9	**Design as a function.**	In this view, Design is seen as a group of jobs that refers to a specific set of skills, practices, and values recognized in the HR function repository.	"Design is a function in charge of Designing interfaces, experiences, services, and products."
10	**Design as a practice deeply anchored in the context in which it operates and constantly evolving to adapt to the situation at stakes.**	In this view, Design is seen as an evolving process rather than as a rigid method or a group of tools.	"The designer must know how to adapt to the context and build his approach to measure, being able to take the necessary distance for each new project to adapt and improve his practice. Meta-cognition is an important skill in this profile, more than aesthetics. It's about: «If you had to do it again, what would you do differently, which are exactly the questions I'm asking today, when we receive providers because power is a bit like meta-cognition, that is to say being able to reflect on what we do and having enough distance to say well, that's how it was, but if I had to do it again, I wouldn't do that, that and that again. I tell myself, that already shows an important skill in my opinion, for a UX designer." (from one of the designers of the Digital Factory) "The contribution of Design to MAIF is precisely to force everyone to change their glasses, in view of what we do every day, whether it be in our work relations or our way of understanding the subjects" (from the Head of Strategy)

2. Does no designers mean no Design?

Gorb and Dumas (1987) observed a phenomenon they called "silent designers." It refers to people performing activities that involve Design without specific Design knowledge nor the use of explicit Design resources or policies to guide them:

> "Design activity pervades organizations and that it is dispersed, interactive and frequently undertaken by people who would not recognize that their job involves Design."

MAIF is no exception. In fact, pioneers' work at creating the company involved a Design activity; so does the work of some project managers and managers that I met over this research. Those people practice Design in the broader sense of Simon (1996) (*"devising courses of action aimed at changing existing situations into preferred ones")* unconsciously adopting Design attitudes (Michlewski, 2008) (such as the empathy towards customers and identification of their needs, or the ability to create value through exploration and to keep an open mind). This questions the preexistence of Design as a latent practice in the organization before 2008 that we identified as the starting point of Design integration. This uncertainty related to the starting point of Design integration sheds light on the ambiguity of the concept and the necessity of defining what it means.

For us, the integration of Design means having internal or external designers working on projects. However, one of MAIF's mottos for Design integration was: *"as everyone is a user, then everyone can be a designer."* Some of the designers at MAIF, especially in the DF, became designers after a two-week training and moved into a Design job. On the other hand, some freshly hired designers have industrial Design backgrounds which are different from their current Design job. Hence, if designers presence suggests Design integration, the characterization of designers has to be specified. A clarification of the concepts of Design integration and designers is necessary to assess the Design novelty degree in the organization.

3. What are the specificities of Design compared to existing innovation approaches that may lead to frictions with the current team?

While designers and dedicated Design team are new in the organization, teams have been working for years on Product and Service Development and the continuous improvement of services. We reflect on Design differences and value regarding existing teams used to deal with the same boundaries and norms. This questions the Design scope and the relationships with existing innovation approaches. Indeed, the Design rise and promotion across the organization create frictions and sometimes frustrations, as evidenced by recurring quotes from members previously in charge of innovation activities :

"We did not wait for you to work on continuous improvement."

"We don't really get how what you do is different from what we've been doing for years."

"We don't need you; Design is the new trending topic, but it will pass."

Indeed, members of the "Excellence in Customer Relationship" team process data from verbatims and monitor indicators of satisfaction rates and service performance delivery; and members of the "Customer Relationship Laboratory" team welcome front-line employees for a few months in a dedicated space to work on Operations processes continuous improvement.

The Digital Factory manager expresses this tension between Design and previous development practices, saying that they share the same underlying principles, but that Design is different:

"If my I.T. colleagues were hearing me say that we could no longer work without Design, they would say 'yes, but wait, when we were developing something, we were also interested in user feedback. They were, Yes and no, not in the same way, because often it was users from headquarters who took the options for users evolving in very different contexts, which has nothing to do with it!"

This question of Design positioning in regard to existing teams an innovation approaches applies specifically to the human centeredness related practices that seem close to Design attitudes and activities.

4. Is there a difference between a human-centered organization or a participatory approach and a Design approach?

MAIF employees and customers praise the organization's human-centeredness as a singularity. Several questions then come to the mind such as: what is the difference between a human-centric company without Design capabilities and a human-centric company with Design capabilities? Are human-centered organizations more prone to Design integration?

The Head of Strategy links in his discourse the human-centricity with the organization's innovation capability arguing it relies on the customers and employees proximity.

In the same way, Design is considered by some internal stakeholders as equivalent to participatory co-construction approaches. Since MAIF is working on Design integration on top of existing co-creation practices and builds on a high involvement of customers for the organization's continuous improvement, one can wonder about Design input and distinctive features.

Furthermore, one recurring quote in the Digital team regarding the Experience company mission and the digital transformation was:

"If we do our job properly, the department will disappear in the near future."

In other words, the success of the Design, the Digital and the Innovation teams corresponds to new practices, new skills and new values widely embedded in the company. If those teams are supposed to disappear once their goals reached, this means that the organization would be Design-savvy.

II. The in-house Design organization: focus on the four Design teams

After exposing the Design integration of Design and its organization at the firm level, we will zoom in the following at the team level in order to describe the current Design organization in place at MAIF. It is based on data collected from interviews and a questionnaire. The interviewees include the Design teams managers and some designers. The first part of the interview consisted in a free discussion time of about one hour. Then, a grid organized into five parts was used to structure the interviews: (i) the team composition and aim and primary stakeholders description, (ii) the expertise, (iii) its activities including (iv) the projects (i.e., the roadmap for 2020 and the portfolio of past projects) and eventually (v) the challenges encountered that need to be tackled and the main progress targeted. The activities include both recurring and one-off activities, which means the team processes and rituals and the involvement in regular external partnerships and external communities. Regarding the expertise, we investigated the artifacts and specific tools the teams developed to support their activities (e.g., the toolbox, learning materials) or the material used to raise Design awareness. In addition to the expertise, a particular focus is set on the culture and team members' knowledge and skills development over time.

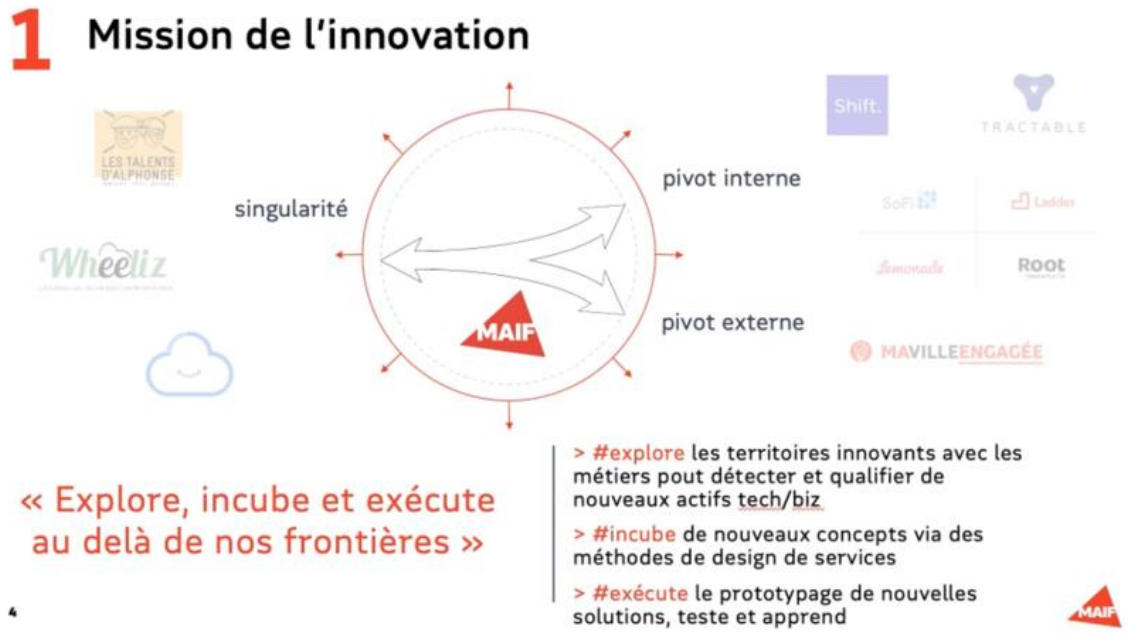
A. Design within the Innovation team

The Innovation team comprises sixteen people brought together to contribute to the diversification of the company's offer (services and products that are not directly related to insurance products) and explore new touchpoints between the organization and its clients. Nine people, including one designer, have permanent full-time contracts. The others, including three designers, are external consultants or students in apprenticeship each year, renewed regularly. A second permanent designer is joining the team before late-2020, with three other members bringing the Innovation team to 20 by the end of 2020.

Those two in-house designers are expected to accomplish 20% of the Design work conducted internally, which means 80% of the work is to be carried out by external Design consultants, either freelances or agencies.

The Innovation team contributes to two aspects of the strategic plans (i.e., the “pivot” related to new technologies and new standards integration (see Chapter 1), and the “singularity” that focuses on a strategy of differentiation rather than competition on prices). The team's role was formalized by the Head of Innovation beginning 2020 as follows: *“to Explore, to Incubate, and to Execute beyond the company boundaries.”*

Figure 50 - Slide extracted from a presentation of the team by the manager (April 2020):



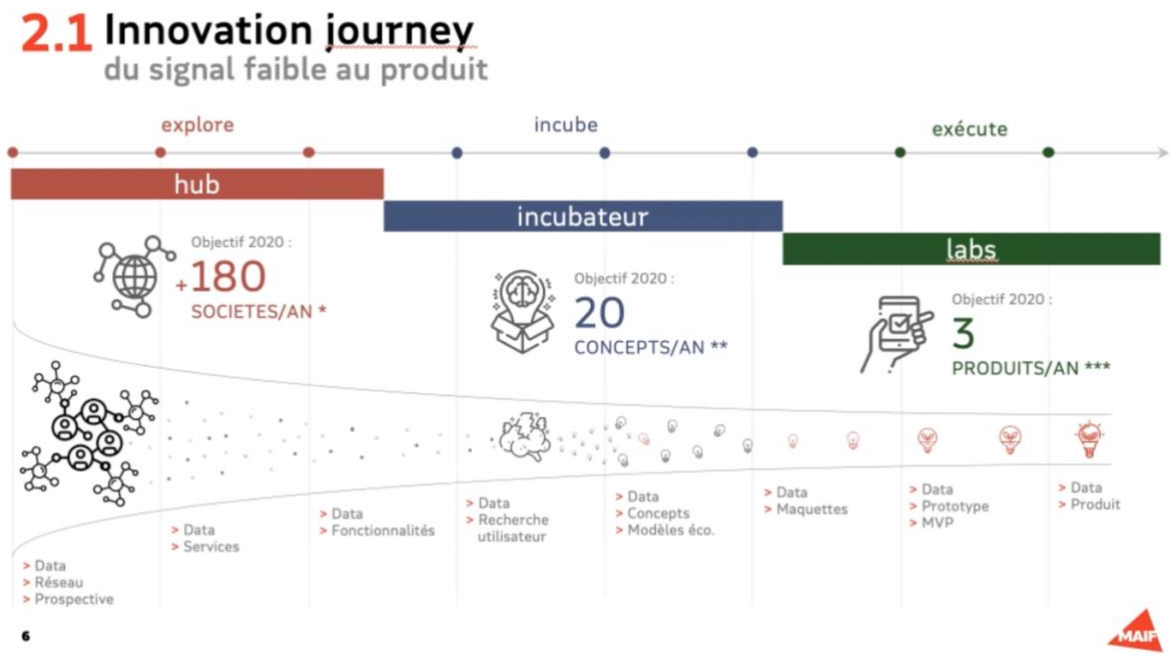
The team has therefore three roles: (1) to explore new territories (to detect and assess new opportunities) in collaboration with other departments (mainly the Marketing and the Operations division); (2) to imagine new concepts of solutions and services using a Design approach; and (3) to Design and test the prototypes corresponding to the concepts identified. In concrete terms, the team is in charge of exploring and implementing new solutions targeting the customer. For instance, during the COVID-19 crisis, the team worked in record time on the implementation of videoconferencing technology to facilitate remote claim-making and connect front-line employees with customers. Another example is a platform to connect neighbors and encourage local communities to launch local projects in favor of the environment.

1. The team composition

The Innovation team is divided into three sub-groups following a process (cf. fig. 51), starting with open innovation driven by the Hub (exploration, detection, and activation), then incubation (research, ideation, and concept development) and experimentation with the Lab (prototyping and testing). They operate from two different locations: the Hub is located in Paris whereas the Incubation and the Lab are located at the company's headquarters in Niort. The designers are grouped in the incubation sub-group.

The Innovation team reports to the Digital department attached to the Strategy division (cf Figure 36). This structure results from the July 2018 reorganization to prepare the company for the second (2019 – 2022) strategic plan.

Figure 51 - Slide presentation of the «innovation journey» drawn by the CDO and the Head of Innovation. (April 2020)



a. The Hub (Open Innovation)

The Hub created in 2018 counts the team manager, an open innovation manager, events and partnerships manager, and two project contributors. It mixes existing and newly hired members (strategic intelligence and partnerships development) (see Figure 52).

The activity is organized in three streams. First, they work on mapping, sensing and seizing new partnership opportunities. To do so, they implemented an inventory tool accessible to anybody in the organization referencing all the actual partners and potential ones with whom contacts have been initiated. Second, they organize on-demand Learning Expeditions for various departments (the executives, the board of Directors team, or transversal groups of interest) to identify best practices and new opportunities. Finally, the Hub head built a “Landing Zones,” i.e., an international network of correspondents with innovation consultants in different geographical areas (New York, Singapore, and San Francisco). They are in charge of reporting key emergent trends and novelties spotted in their territories, (new technologies, newcomers in the insurance business such as Lemonade in the United States or Zhong An in China, societal or sectoral trends, etc.). Anyone in the company can join the correspondents' monthly presentations as those are open digital events. They share reports on a digital platform accessible to anyone. Those presentations serve as inspiration entrants in projects. Their objective of is to spot weak signals and to internally raise awareness or improve the understanding of current technological trends. It is about identifying new opportunities (partnerships, developing new services) or potential threats (e.g., related to new entrants).

Each of the three sub-group has a dedicated roadmap that is shared and synchronized within the broader team. The current Head of Innovation is in charge of the management and the development of the Hub and Incubation. He is in charge of formulating and implementing the Innovation strategy in direct collaboration with the CDO to whom he reports.

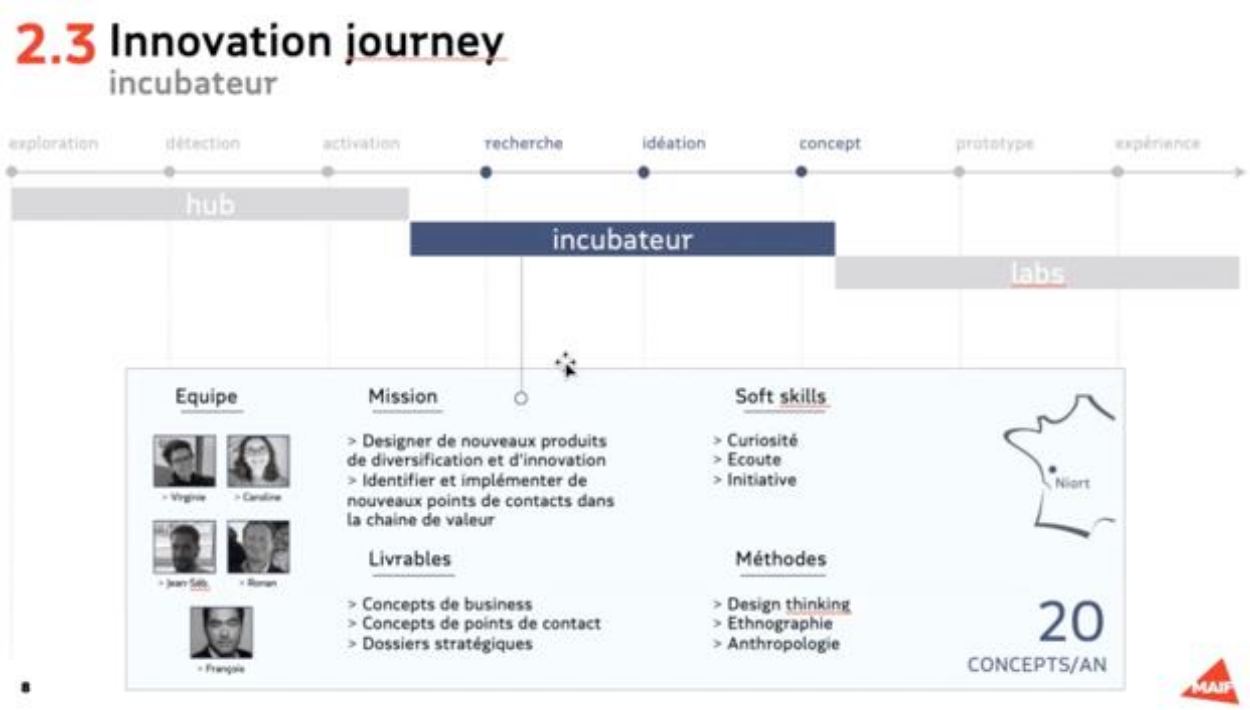
This team's annual target is to identify and contact a specified number of new companies (180 new companies in 2020). There is no designer in this sub-group.

Figure 52 - Slide presentation of the «Hub» team (extract from the team's presentation, April 2020)

b. The Incubation

The “Incubation” sub-group (see Figure 53) comprises nine people, including a service and strategy designer and four project managers. The project managers have various backgrounds and come from different departments within the company. They have been trained in Design and innovation methods by attending external training and participating in projects with the designer. On top of that, three designers and one project manager are mobilized to support the nine permanent members to help with the activities. The Incubation's role is to produce new concepts in response to the opportunities spotted by the Hub or identified in the “Strategic Marketing Plan,” the company's roadmap, or the ongoing strategic plan. The objective set for this sub-group is the number of new concepts produced annually (20 concepts for 2020).

Figure 53 - Slide presentation of the Incubation (April 2020)

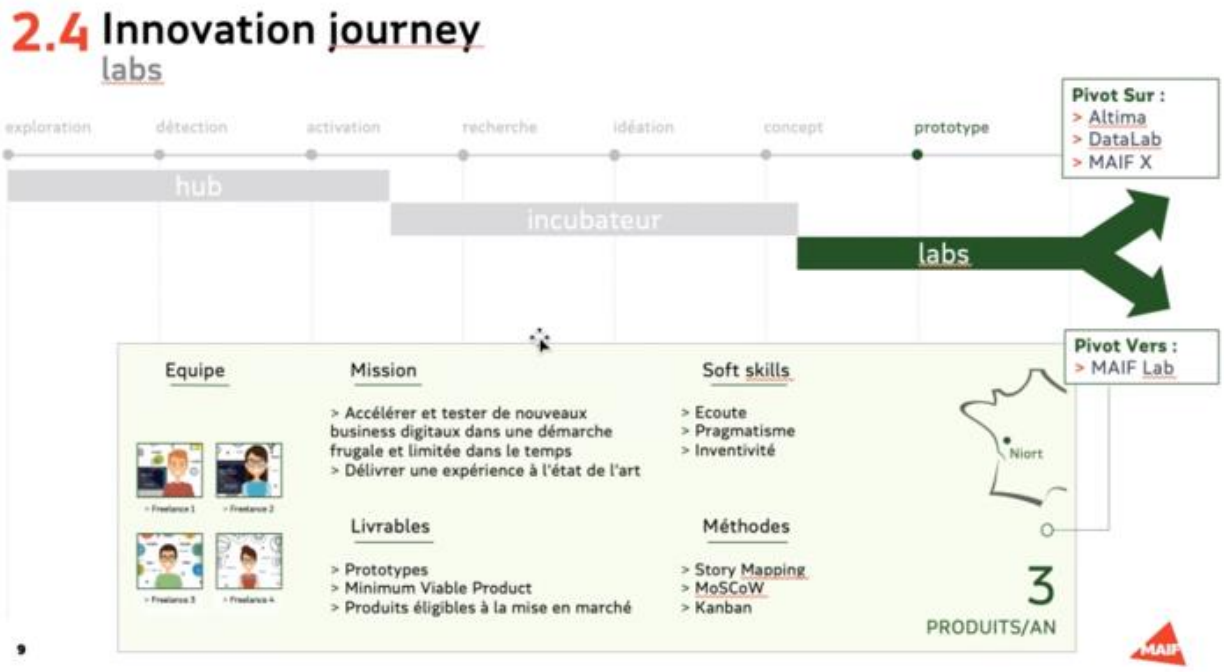


c. The Lab

The Lab has been created in 2020 and comprises four freelancers that report to the Head of Innovation (see Figure 54). Based on his previous experiences focused on product delivery, he suggested creating the Lab team to test the Incubation concepts and bring them to the market. The "MAIF Lab" serves as a laboratory to test the implementation of innovative new products before considering their definitive addition to the product portfolio. Indeed, until 2018, the implementation part has been the Innovation team weakness. It has been dealt with by Operations or Marketing teams. However, depending on the subject, the experimentation can as well be carried out by MAIF subsidiary (Altima) that offers innovative insurance products or by the Datalab (see chapter 1, section II-B-3-b), or by MAIF X in charge of the development of the service platform (see chapter 1, section II-B-3-b).

The Lab key performance indicator for 2020 is to prototype and experiment 3 new products (or service) from the 20 concepts developed by Incubation.

Figure 54 - Slide presentation of the «labs» team (extract from the team's presentation, April 2020)



2. The projects of the Innovation team: focus on the incubation sub-group

The incubation sub-group corresponds to the Innovation team before the 2018 reorganization. We focus on this subgroup because it gathers all the designers of the Innovation team.

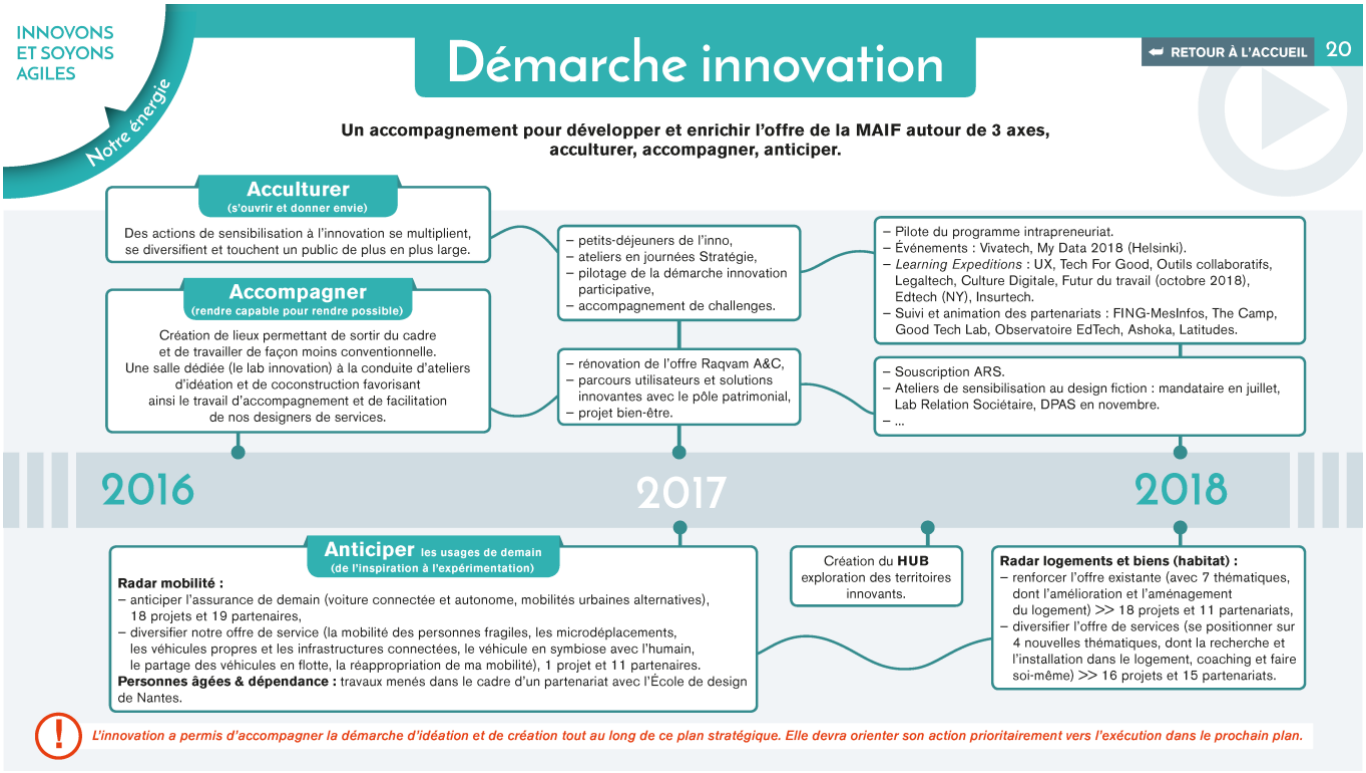
a. The activities of the Innovation team before the 2018 reorganization

The Innovation team works collaboratively on projects with teams from all company areas, mainly from Marketing, Operations, Legal, the DF and the team working on Data.

The team activity was split into three objectives (acculturate, accompany and anticipate) and four streams (focus, toolbox, portfolio, mindset).

The slide below (Figure 55) shows the team activities' evolution during the (2015-2018) strategic plan.

Figure 55 - Slide presentation of the Innovation team's actions over the period 2016 - 2018 (extract from the document presenting the assessment of the strategic plan for the same period)



They developed events to raise awareness on Design. They accompanied some project managers helping with the methodology and offering a space that the projects team use for workshops. They developed services and insurance products such as new home insurance or a new mobility offer (for car-sharing and bikes). The designers within the team worked on the Future of Home Insurance (Smart Home and IoT), the Future of Mobility (electric vehicles and bikes), and the Future of Aging.

On top of the acculturation and supporting project, a new objective for the team was added in 2017: the anticipation. It led to creating a monitoring tool, "the strategic radar" (this tool is presented later in this chapter, in this section I, part E.), and creating the Hub.

b. The incubation sub-group activities

In the incubation sub-group, designers work in pair with project managers as co-leaders on innovation programs such as the "vocal interactions" to identify potential use cases related to voice interfaces and the "climate risks," which investigates the consequences of a probable increase in large-scale climate events (see Figure 56).

Figure 56 - Presentation slides of two programs (extract from the Innovation team portfolio presentation, January 2020)

The pair acts in a complementary way. The designer sets up the project methodology and especially the user research, ideation and prototyping. The project manager identifies the internal players to be integrated. He can propose complementary methods to carry out the work (e.g., lean management, growth hacking) depending on his expertise. Then the pair carries out all the stages of the project together, from user research to prototyping.

Depending on the program, ad hoc internal partners (e.g., Marketing, Data) are added to the project team. Design agencies or freelance designers can be mobilized to support a program when the workload is greater than the capacity of the designers already mobilized. Each program can lead to several concepts.

The incubation sub-group has developed various tools to facilitate its activities:

- a strategic monitoring tool called “Strategic Radar” transferred later to the Marketing department (this tool will be presented in the section dedicated to the transversal Design features)
- a modular workspace devoted to facilitating collaboration and creativity, the “innovation lab.”
- a process for onboarding new employees in the Innovation team, including a toolbox and the formalizing of practices using a visual tool (Trello)

In addition to the innovation programs created internally, the Innovation team (not just the «incubation» subgroup) also participates in external innovation programs involving designers. For instance, the team participated in a program “CityMakers: Open innovation for the future of urban mobility” created by a third party (external accelerator NUMA) and mobilized companies from different sectors such as automotive.

3. Team’s rituals and meetings

Several regular meetings punctuate the activities of the Innovation team (reuniting the three sub-groups). There are weekly meetings (1 hour long) during which the manager and team members share information on the strategy, organizational announcements, and the progress of work, as one of the team members interviewed said:

> “ We take turns taking slots according to our progress on the various ongoing subjects, or when we want to present something in particular, then everyone says a word if there is time.”

One-day seminars are organized twice a year. They combine joint development, assessment and projection on the roadmap, and time for inspiration and monitoring, for example, on specific technologies or skills, as one of the team members points out:

> "The first seminar was very much oriented towards «new technologies.» In the morning, we were introduced to computer development (coding). In the afternoon, we became familiar with Bitcoin and Virtual Reality. The second was focused on team cohesion, getting to know each other better, and improving the way we work together."

In addition to these regular meetings, punctual (generally quarterly) workshops are organized to collect feedback on projects and programs or test new tools and experiment with new practices such as using serious game to develop empathy. The team very much appreciates the initiative. By word of mouth, the Human Resources division learned about this initiative and provided resources to assist with the workshops. Once the workshops had been tested on the Innovation team, it was suggested that they could be offered as in-house training to other teams.

The "Incubation" sub-group offers basic training in Design to the project members they join and outside of the projects. Those can be part of an event organized by the Communication teams (e.g., during the two-day quarterly event dedicated to communication on the strategic plan) or stand-alone events promoted through a dedicated page in the internal social network.

The "Incubation" sub-group presented its activities and news during innovation breakfasts welcoming anybody at the headquarters.

4. Managing the Design Team

No specific measures have been put in place concerning the development of designers' skills at the team level, as stated below:

> "On the issue of maintaining the skills of designers, we do not have a map at the moment, but there is a need for that."

Designers performance and the production quality is not assessed. A project's success is assessed with the indicators already in place in the organization, such as the customer base's growth, customer satisfaction, the economic model performance, and employee satisfaction. The team's KPI does not relate to the quality of what is produced but rather to the quantity (e.g., the number of new partners, the number of concepts produced, the number of new products).

The Head of Innovation finds designers trickier to manage compared to other experts such as developers:

> "Design is a family of competencies that is very difficult to manage."

> "Designers are a population as complex as developers. You have to be much more rigorous in your exchanges than with traditional audiences. Why is that? Because the designer has the user's permanent endorsement when developers are focused on technical and much more subjective views. It is easy to challenge someone who reports a feeling or a standpoint, but a designer rarely says, 'I think that...' he says, 'we observe that the users...' There is often a tension between the strategy as envisioned by the executive committee and the corporate strategy and the reality of the 'user' perceived by the designers; you have to set a strategy that finds a balance, a compromise between the two."
> "one of the keys is to work on appetites and to be able to match personal interests with the company's subjects, but the

model is not very viable. This is a trait shared by developers and designers: the convergence of their interests with their job; for developers, code is a passion."

In his words, despite the absence of specific processes or projects encouraging continuous learning, the team members benefit from spontaneous experience and best practices sharing. The team progresses through peer-to-peer exchanges with the pairing of young designers and project managers who are more "senior" profiles. They are still working *"on the emergence of a common culture and better collaboration."*

B. Design at the Digital Factory

The Digital Factory comprises 130 people brought together to contribute to the development of digital products and crucial touchpoints in the customer relationship. It contributes to a better distribution of the insurance products and service and the diversification through the development of new services peripheral to the existing core business. Approximately 40% of the team are permanent employees.

1. The team composition

The DF is divided into five sub-groups. One gathers all the designers, twenty-seven in total, and is in charge of designing interfaces and crafting digital products. There are UX designers (user research, information architecture, patterns of interaction, definition of the wireframes), UI (i.e., the graphic layout) and content. The sub-group dedicated to Product Owners is in charge of elaborating the product roadmaps, the product evolutions management, and driving the products delivery. The Technical Production sub-group regroups technical experts and developers in charge of the digital products architecture, technical engineering, and interface development. It includes scrum masters, an I.T. architect, many web developers, some analysts, and integrators. The two remaining sub-groups are dedicated to the performance. One to traffic acquisition and includes traffic managers in charge of the SEO[12] campaigns on the web (i.e., making sure that the website appears in a good position in a search for the company or its services), and the SEA[13] (targeting of individuals, firms or communities) and online advertisement. Their work is crucial to ensure that prospects and customers easily reach the interfaces designed and developed by the other sub-groups. The last one is dedicated to web analytics,

[12] SEO short for "Search Engine Optimization", is about increasing the visibility of a website. The aim is that the website link appears among the first results when a user make a query online. For instance, the SEO team at MAIF is in charge of ensuring that when French people type in "home insurance" in their search engine, MAIF website appears among the first the results in the page.

[13] SEA short for "Search Engine Advertising", is about online advertisement campaigns.

i.e., the interfaces use assessment; the efforts one user has to make to reach for the information he/she is looking for. The digital analysts from this sub-group report essential information through the production and update of dashboards to help the other sub-groups make better Design decisions and improve the existing interfaces in accordance with the monitored users' perception.

The DF collaborates with the main stakeholders from the I.T., the Operations, and the B2B divisions (in charge of developing new insurance offers for professionals and firms). They interact with the teams in charge of dealing with the customers' data and monitoring the customer relationship. They also collaborate with people from within the Digital department, the Communication department (that also deals with the customers through the digital channel), the Public Affairs team (that shares key changes in the legal requirements such as information about the compliance with the new data privacy regulation), the team in charge of customer representatives and the one in charge of partnerships.

They collaborate externally with some Design and Digital agencies that help with the Design process (to carry testing session, ideation, or the user research) and the digital analysis process (e.g., to stay up to date in terms of measurement techniques and technologies).

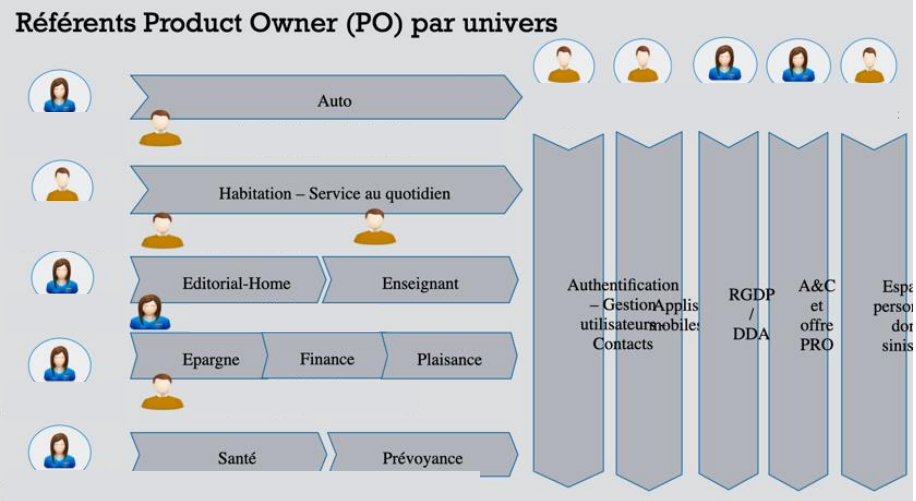
2. The projects portfolio of the team

People in the DF are project managers or contributors. In its five years of existence (2015-2020), the team contributed to fifty-three projects listed in the Project Management Programs (e.g., "POME," the Program in charge of "building an OMnichannel customer Experience").

The team roadmap is driven by the priorities defined by the Project Management Programs as well as by the Digital Strategy.

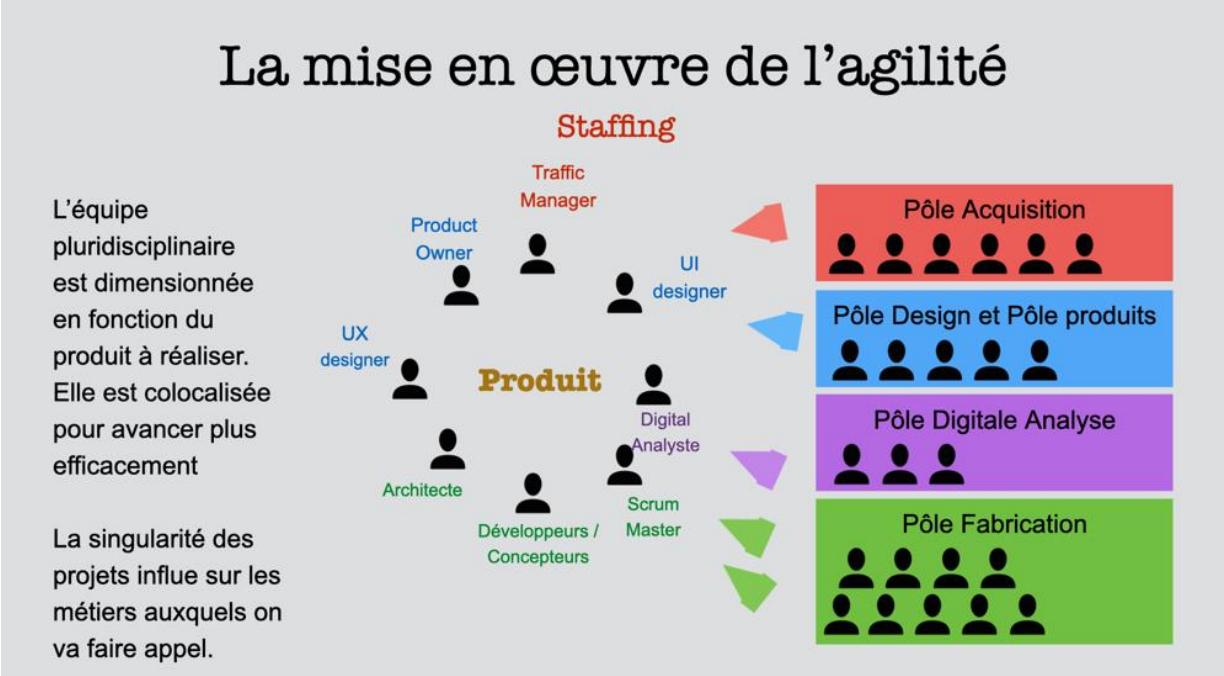
The team is organized in squads and chapters dedicated to specific products (e.g., car insurance or Home Insurance, or diversification products) along with squads dedicated to components or specific technical features common to several interfaces (e.g., the log-in/sign-in process, the data privacy). This gives rise to a matrix organization that resembles this:

Figure 57 - The Digital Factory matrix work organization



The squads are multidisciplinary teams composed of 8 to 12 people depending on the product to be built. Each one has a dedicated space where the members gather to facilitate the collaboration. A person belongs to a small number of squads, and location changes a few days a week accordingly. The following figure (Figure 58) shows the typical squad.

Figure 58 - The elementary composition of a squad at the Digital Factory



A Project management officer has been appointed to monitor the DF projects which facilitated our portfolio access. We outline six Design focus for the digital products developed within the team: core business (access to the service), I.T. update, diversification, customer experience improvement, legal compliance, and performance optimization. (see Table 13 below)

Table 13 - Digital Factory's main Design foci based on its project portfolio analysis

Design focus: **digital products for**	**The core business (access to the service)**	**The I.T. update**	**The diversification (new services)**	**The customer experience improvement**	**The legal compliance**	**The performance optimization**
% of the total projects (53)	**28%**	**13%**	**19%**	**28%**	**4%**	**8%**

3. Team's rituals and meetings

The DF's main rituals are inherited from the Agile work organization; It includes project demos (presentation of projects progress), team cockpits (attribution of projects based on volunteering), and stand-up meetings to review the activities in a short timeframe. One of the designers defines the weekly

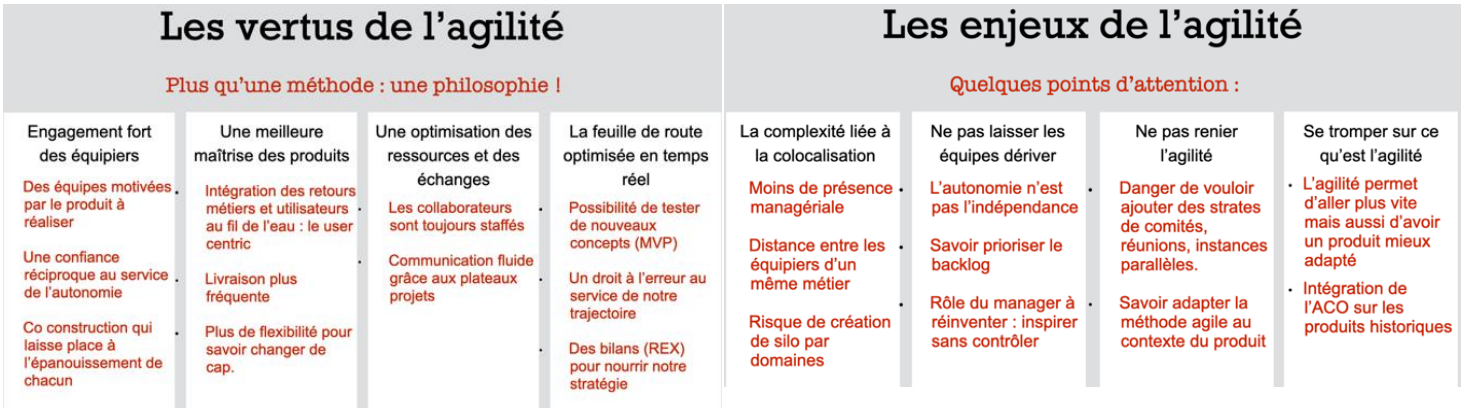
rituals of the team as follow: three hours are dedicated to the delivery on projects (i.e., presentations of the results from work), two hours are dedicated to the projects reviews with the whole Design sub-group (everyone can freely express difficulties, progress or present Design work), and two more hours are dedicated to a general meeting that gathers the five subgroups altogether for an extensive activities review. In addition to those meetings, the designers participate in project steering reviews (organized by the squads) and workshops.

The Design sub-group within the DF uses a lot of advanced tools in support of Design activities: DTP, prototyping tools (Invision, Sketch, Adobe Creative Suite), Visual Management (Trello), Collaboration tools (Slack, Microsoft Teams), Testing tools (video analysis), Creative tools (e.g., whiteboards, toolboxes, inspiration boards) resulting in the coexistence of many tools potentially preventing easy collaboration.

4. Managing the team and the Design sub-group

The DF manager underlines the benefits of the "Agile" work organization on projects (see Figure 59): it leads to a strong commitment of the teams, greater flexibility, and a reduced timeframe for product delivery while enabling resources' optimization. This work organization is the initial driver of Design integration in the team. However, it also brings challenges, such as the necessity to move from one office space to another several times a week, be co-located with the other squad members, or position the manager role regarding the squad autonomy. Another one is the multiplication of meetings for some players (one person belongs to a subgroup and one to three squads. Each of those entities has regular meetings) that can be counterproductive. Eventually, there is a lack of shared understanding of the requirements of the Agile organization that is sometimes confused with the meaning of the word Agile -related to the ability to do things quickly and in a coordinated way-. Further education is needed on this point in the company outside the Digital Factory.

Figure 59 - The strengths and challenges of the Agile organization adopted in the DF according to its manager



The Head of Design in the Digital Factory identifies challenges related to Design. The principal challenge would be the conflicts with other teams whose historical activities overlap (e.g., the debate over the length of the texts and the content with the Communication department in charge of the content displayed on the website). This connects with the confusion over the way the user's voice is taken into account. Designers and Product Owners often have conflicting viewpoints regarding the decisions to make to address the project's users requirements.

> "The problem is that nowadays when you're doing digital Design, you do your thing and say. Well, well, yeah, because I don't know if that's cool too. Cause when you put it like that, but whatever. You don't have any proof, and it's a terrible way to say it, whereas everybody, normally, should try to grow in people's direction before asking people what they like. That or it's a choice to make. A decision to make? Yes, because it affects his identity, his employability, his perimeter. On always comes back to the same problem and his volubility because it's actually OK. However, then, when you cross, it's OK. But then what does it do? If the users decide, if you are yellow or red, what's the point?"

> "The methodologies that we put in place are methodologies that turn its operating principles, decision-making autonomy to the points that come to expect the legitimacy and employability of certain people."

> "Design is beautiful. That's fashion, that's very good, but it's been 30 years with this company. And if we're here today, it's also thanks to how we've structured the decisions. Okay, I trust, and in a way, I put you in your place with its user methods to work. Right now, it's the fashion to make the user center very well apart from centering the user. Some users we've caught."

Besides, another collaboration obstacle is the heterogeneity of methods and processes adopted by individual designers because of the lack of standard guidelines and a lack of seniority. While this may be rich, it creates haziness and confuses non-designers. Furthermore, this can be detrimental to the establishment of a quality standard.

A new interface building project revealed a plurality of views among the designers: some advocate for a strict compliance with the Design System, and others wanted to pursue an uncharted practice. Another challenge relates to the moment when designers are integrated into the development of interfaces: they require to be part of the projects early in the process to be part of the thinking and decision-making beforehand, to "ally the Hand and the Head."

> "It has a job that is very, very factory, very factory. Sometimes it comes out in the relationships with others, other departments, other entities, a production line. There are many kinds of bad arguments that have just finished the conversations that one can have on the field of possibilities by saying that there are Factories to produce a thing.
>
> While they're going to tell you the exact opposite in other meetings or say Wait a minute, that's not what marked Factories that we're some kind of a factory and that we're going to be filled."

Eventually, the manager points to the difficulty of balancing in Design decisions the benefits for the company (e.g., reduced costs or workload on the call center), for the customers (customers' satisfaction), for the employee (e.g., more accessible customers interactions), and the environment (e.g., energy consumption, accessibility).

C. Design in the Experience team

As of early 2020, the Experience team comprises nine people brought together to improve the employee and the customer experience: five are junior designers, two senior project managers, an apprentice in communication, and the manager. The designers are recent graduates from two French Design schools. The others have a business background and discovered Design while it was developed at MAIF. The team has grown rapidly. A senior designer will be hired in the months to come. I have been part of this team as a Design innovation catalyst from its creation in July 2018 until December 2019.

The team has a transverse role that involves working and contributing to existing projects led by various stakeholders to address the needs of internal users (employees and customer representatives) extended to external users (prospects, customers, partners). The team has three main objectives: building and maintaining a vision of the Experience for the company, supporting project working on customers' or employees' Experience improvement, and developing an awareness and expertise on Experience in support of the transformation towards an "Experience" company. The latter has been the most important focus, but the support on the project has gradually gained more weight and currently outweighs the emphasis on awareness and upskilling. The involvement of the members has evolved from "one-shot" contributions late in projects (e.g., redesigning the correspondence with customers or a particular moment in the claim management process, the improvement of dysfunctions in an existing solution) to lengthier contributions starting earlier. They also work closer to the project managers. The latest Experience vision is the one built in 2016, and that initiated the Experience Company mission. It is outdated since the insurance services have evolved. The objective is to create a new one that could serve as a reference to measure the impact of the teams work and to serve as a decision-making tool for roadmap and priorities adjustments

1. The team composition

The team is not divided into sub-groups due to its small size. However, clear ownerships have been defined. Indeed, each project manager and designer is focused either on employee or customer experience. One of the designers works solely on space planning projects.

2. The project portfolio of the Experience team

We analyzed the portfolio of projects of the Experience team projects. The objective was to characterize the team's activity and evolution. To do so, we focused on seven characteristics of the projects: (1) the internal projects clients, (2) the projects' target (the employees, the customers, or partners), (3) the Design focus, (4) the involvement of external designer, (5) the type of projects (one-

shot intervention, integration within a project team, or project management), (6) the way the project was initiated (e.g., based on a brief from the customer, suggested by the board of Directors), (7) the nature of the output and the closure of the project (abandoned, stand-by, work in progress, delivered).
A hundred and forty-seven projects have been identified, from April 2017 until December 2019. The word "project" describes all sorts of contributions, regardless of the company's official projects enlisted in the Project Management Programs.

a. General outlook on the projects

The number of projects conducted yearly kept growing over the years (see Figure 60): forty-four in 2017; fifty in 2018; eighty in 2019 (the projects overlapping from one year to another are listed in both year, which explains the total amount of projects being superior to the sum of the number per year. Six projects continued from 2017 to 2018, nineteen between 2018 and 2019). The number of projects conducted in 2018 grew by 14% compared to 2017 and by 60% by 2019 compared to 2018.

Figure 60 -Overview of the key figures on the Experience team projects

total number of projects
147

total number of projects per year		%	nb projects /yr	% growth
2017	37	25	44	
2017-2018	6	4		
2018	25	17	50	14%
2018-2019	19	13		
2019	60	41	80	60%

projects' progress		%	2017	2018	2019
abandonned	17	12%	14%	14%	6%
delivered	92	63%	80%	68%	50%
stand-by	16	11%	2%	10%	18%
still in progress	20	14%	0%	6%	25%
handed-over	2	1%	4%	2%	0%
multi-year	25	17%	9%	34%	16%

The projects' size stayed the same over the years, except for a significant increase in the several weeks-long projects. One-third of the projects lasted for months, around 12% lasted for days in 2017 and 2018, against 17% in 2019. Eventually, one-third of the projects lasted weeks, against 6% in 2017 and 9% in 2018.

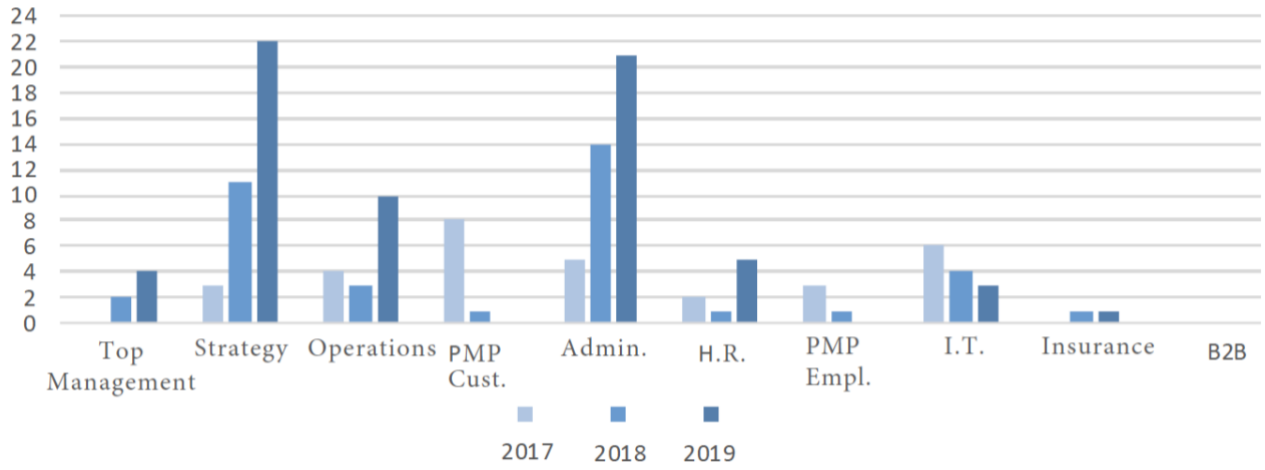
b. The team's internal clients and their loyalty

Among the seven general divisions in the firm, the team is used to work with five. In 2017, the most prominent clients were the I.T. division, the Administration division, and the PMP (Project Management Programs) dedicated to customer satisfaction, the PMP dedicated to employee satisfaction, and the H.R. division.

Since 2017, the I.T. division's projects kept decreasing, and so have the projects in collaboration with the PMPs until no more were left.

In 2019, the most significant clients were the Strategy, the Administration, and the Operations divisions (see Figure 61). More and more projects are for the H.R. division and the board of Directors.

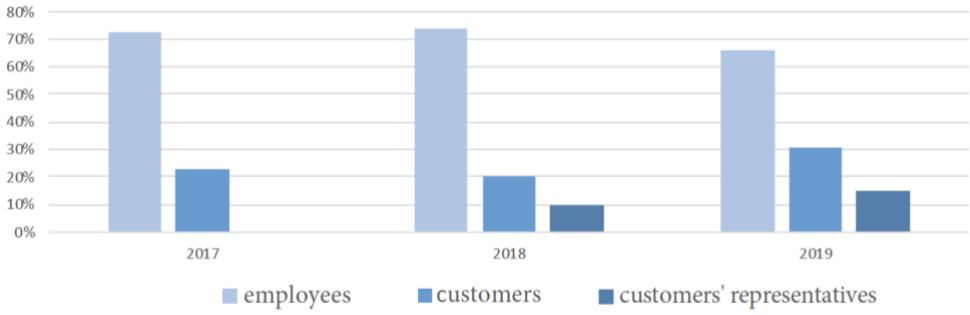
Figure 61 - Overview of the evolution of the internal clients of the team (2017 – 2019)



c. The targets

The projects targeting the employees accounted for more than 70% of the total number of projects in 2017 (see Figure 62); it represented around 65% in 2019. On the contrary, projects for customers grew by nearly 10 points in 2019. The objective that has been set is to reach 50% in the near future. The projects aimed at improving the experience of customer representatives were launched in 2018, reaching nearly 20% in 2019.

Figure 62 - Evolution of the target of projects (2017 - 2019)



d. Six Design foci

Apart from the targets, we identified six Design focus in the portfolio (i.e., the generic aim pursued by the project). The following table (Table 14) shows the distribution of the projects per Design focus during the study. The darker is the cell background, the higher is the percentage.

Table 14 – Distribution of the 147 projects per Design focus

Design focus	2017	2018	2019	Trend
Improvement of user experience (Employees, Customers)	**14%**	**26%**	**26%**	Stabilization after growth
Space Planning (Office & Retail redesign)	**7%**	**24%**	**30%**	Growth then stabilization
Direct interactions with customers	**0%**	**4%**	**10%**	Growth
Team process development	**13%**	**8%**	**10%**	Stabilization
Diffusion of Design expertise	**32%**	**32%**	**21%**	Decrease
Digital Interface	**34%**	**6%**	**3%**	Disappearing

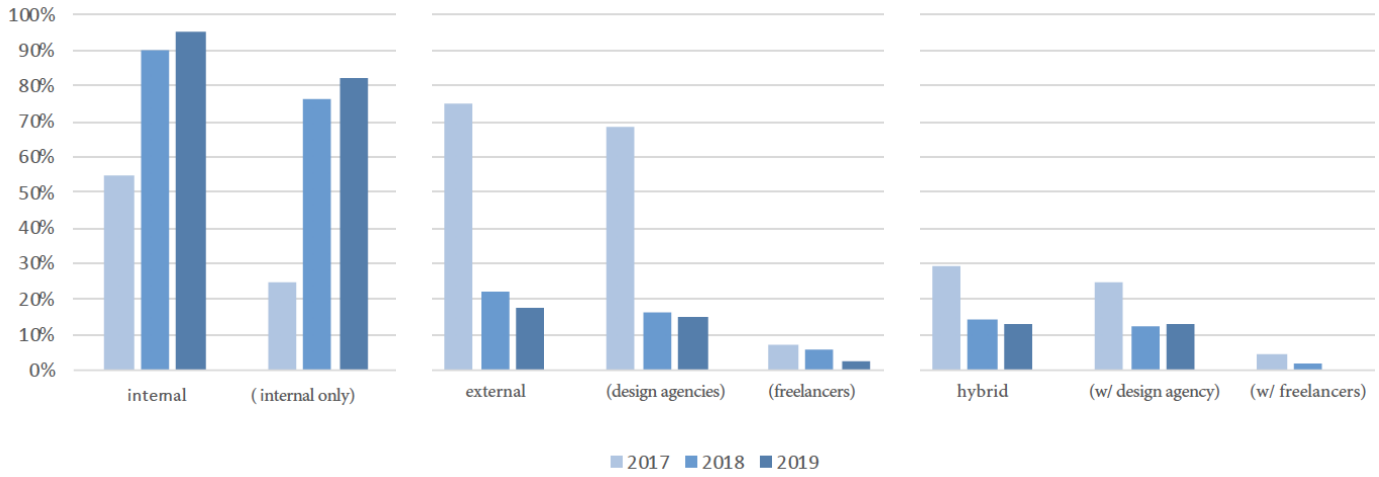
The distribution of Design focus evolved over the years. The only Design focus that seems to remain stable is team development, including the Design of tools and formalization of practices and processes used from one project to another.

In the first year, one-third of the projects were dedicated to the diffusion of Design expertise. This makes sense in light of the focus on raising awareness on Experience and offering training material to upskill teams across the organization. Another third of projects were dedicated to digital interfaces, making sense since one of the three persons working on the Experience Company mission was a digital project manager. He moved to the DF in 2018. In 2019, one-third of the projects were about space planning, against 7% in 2017. It is consistent with the fact that the team has hired a space planning designer. The second most frequent Design focus that accounts for nearly a third of the projects are improving user experience both for employees and customers, which is the team's primary objective. The projects dedicated to the diffusion of Design expertise decreased but still accounts for more than 20% of the projects. Thus, it remains a significant part of the team's activity. Last, the number of projects dedicated to direct interactions with customers (i.e., projects focusing on a single touchpoint) increased and represented 10% of the total amount of projects. This is usually an entryway to start working on the overall improvement of the user experience.

e. The Make or Buy decision

In 2017 the team had only one designer and mainly relied on external Design agencies to conduct the work (see Figure 63). As of 2018, with the team headcount's growth, the share of projects completed internally expands and exceeds 80% in 2019. Barely 15% of the projects mobilize both in-house and external designers.

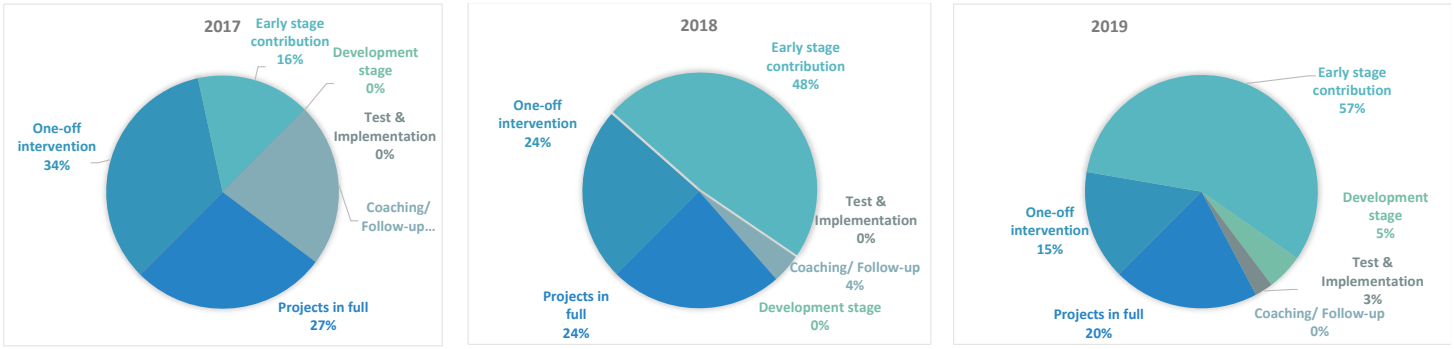
Figure 63 - Evolution of the externalization rate (2017 - 2019)

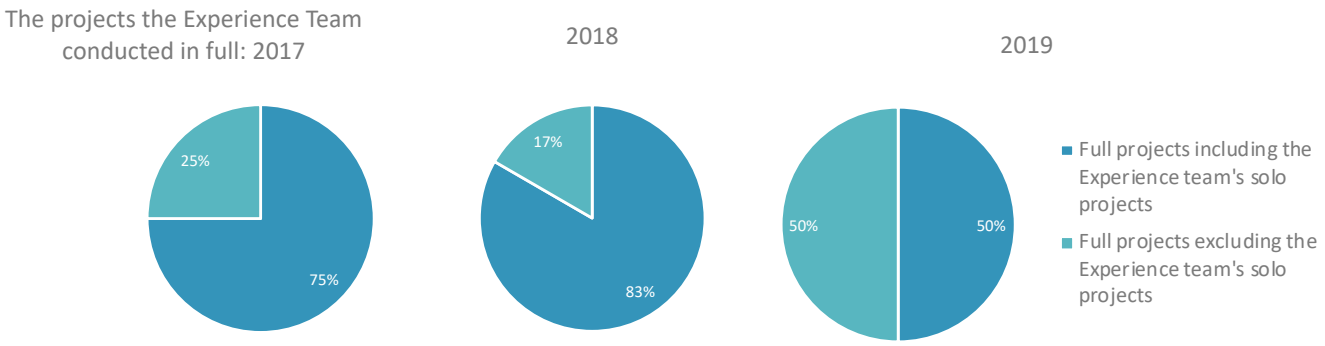


f. The type of contributions

When not asked to join as a member or a leader of a project, the Experience team can be asked to act as an external consultant. In addition to the relation to the project team, the contribution also differs. In some cases, the team participates in projects from start to end; in others, they have follow-up sessions or even unique contributions (see Figure 64). One-shot contributions and follow-up sessions on projects accounted for the majority of the team's involvement in 2017. The share of one-shot contributions dropped by half between 2017 and 2019. Follow-up sessions have entirely disappeared by 2019. Conversely, the team is increasingly called in a consulting role, early on projects, to help teams conduct user research and move to ideation. This type of project for the team represented 16% of projects in 2017 against 57% in 2019. Very few projects focus on the testing and the development parts, which are essential in Design activities. Indeed, 4% of projects mobilize the team as an external consultant, late in a project, when the solution has already been tested or in development. Lastly, while the number of projects conducted from end-to-end is slightly decreasing, 50% of those are in 2017 not initiated by the team for its development purposes, against 25% in 2017.

Figure 64 - Evolution of the projects' type (2017 - 2019)

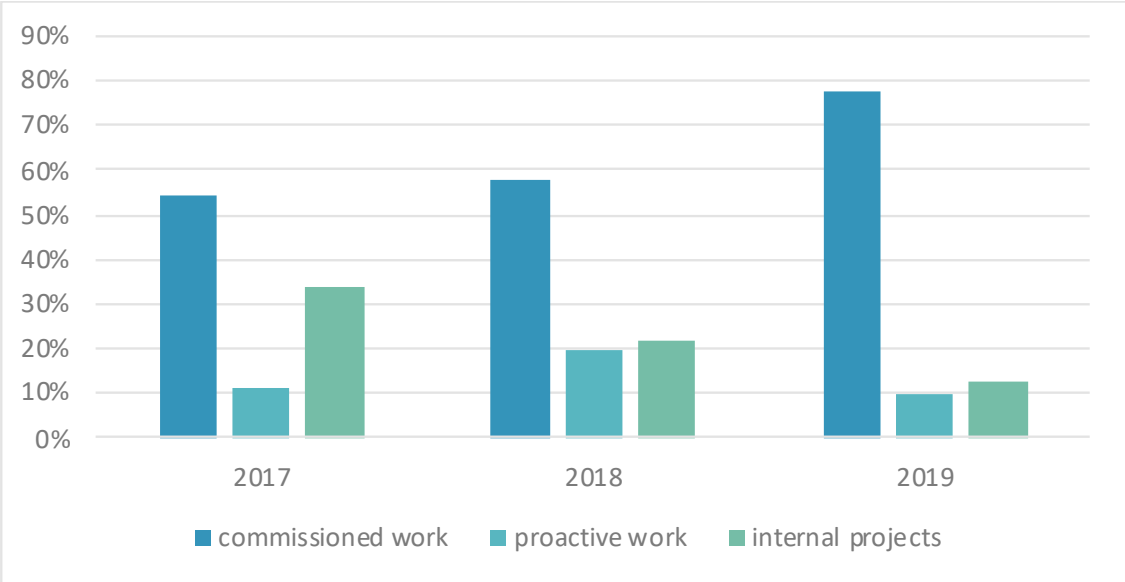




g. The project initiation

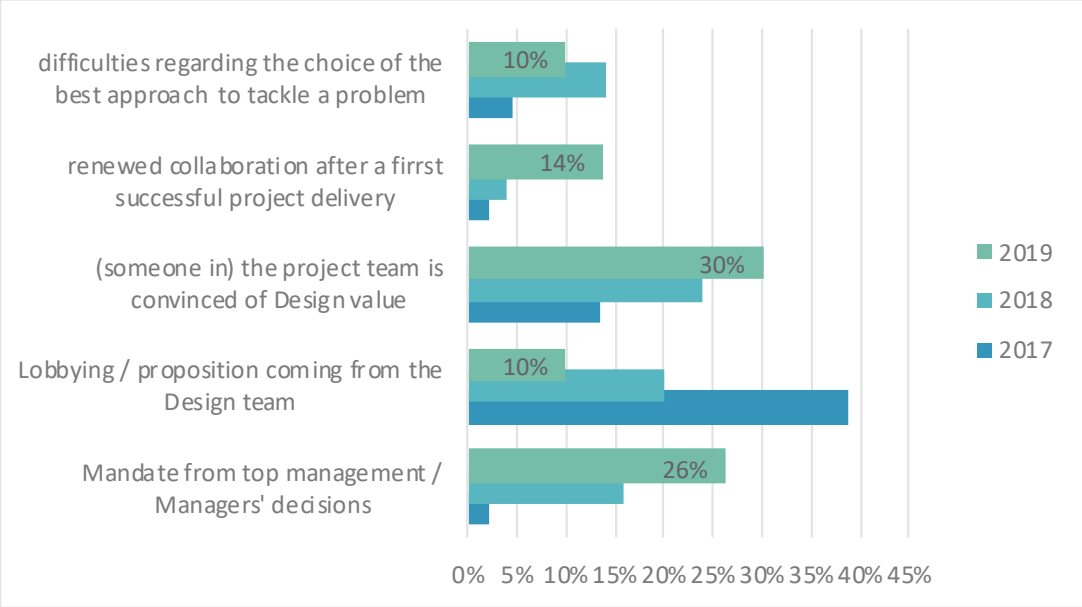
A new project for the Experience team is initiated in three ways. It can be commissioned by someone external to the team, internal, or emerge from a need in the team to improve its functioning. The latter diminished over the years, while the call for contribution on projects coming from other departments (e.g., the operation or the communication) grew by nearly 50% to reach 80% of the projects documented in the portfolio. The Experience team's proactivity, in other words, the launch of a project, fluctuated but remained meager (less than 20%, see Figure 65).

Figure 65 - Evolution of projects initiation (2017-2019)



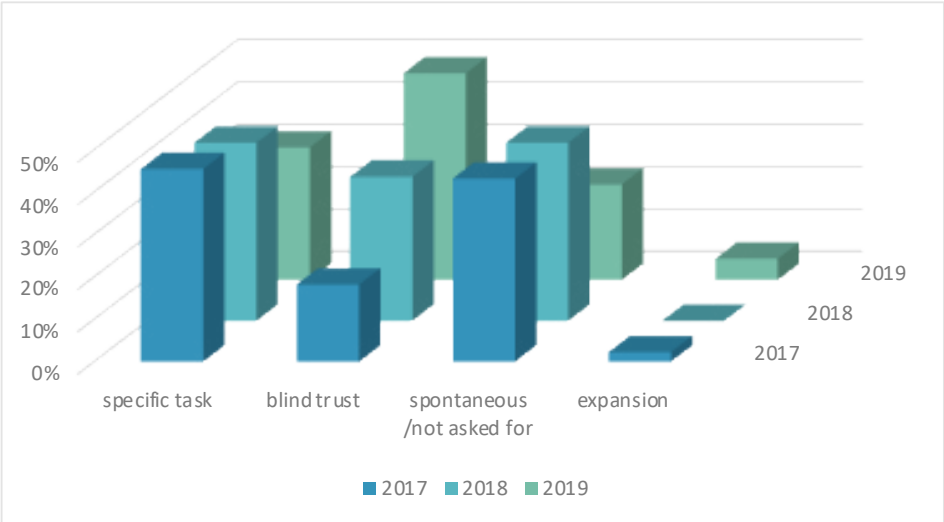
Several triggers can push a project team to onboard the experience designers on a project. It can be under the influence of the board of Directors, the CDO, or the project managers from the Experience team. It can be because the project manager is convinced by the benefit the designers can bring or a renewal of a previous successful collaboration. Eventually, the project manager can turn to the designers as a last resort after several unsuccessful attempts in tackling a problem.

Figure 66 - Motivations towards the Experience team commissioning



An increasing number of projects (almost 40% in 2019 against barely 15% in 2017) offer a considerable leeway to the Design team's contribution. We call it “blind trust.” The team is asked to join a project and is free to decide how it can best contribute and act accordingly. Sometimes designers are frustrated over a commissioned project (e.g., they feel like a reframing is necessary, but the project manager does not allow it). Thus, at the end of the project, they work with the experience project manager on initiating a new project. It may or may not be carried out in collaboration with the initial commissioner. The designers' additional work is then delivered to the initial commissioner. In that case, we call it an expansion. It falls into the category of projects on which the team acts on its own, having “carte blanche.” The number of such projects remained stable, while the projects resulting from an expansion (i.e., a rebound from a previous project) grew slightly. Many teams still call for the Experience team on a tight brief, asking for help on a specific task (see Figure 67).

Figure 67 - Evolution of the conditions of Design integration (2017 - 2019)

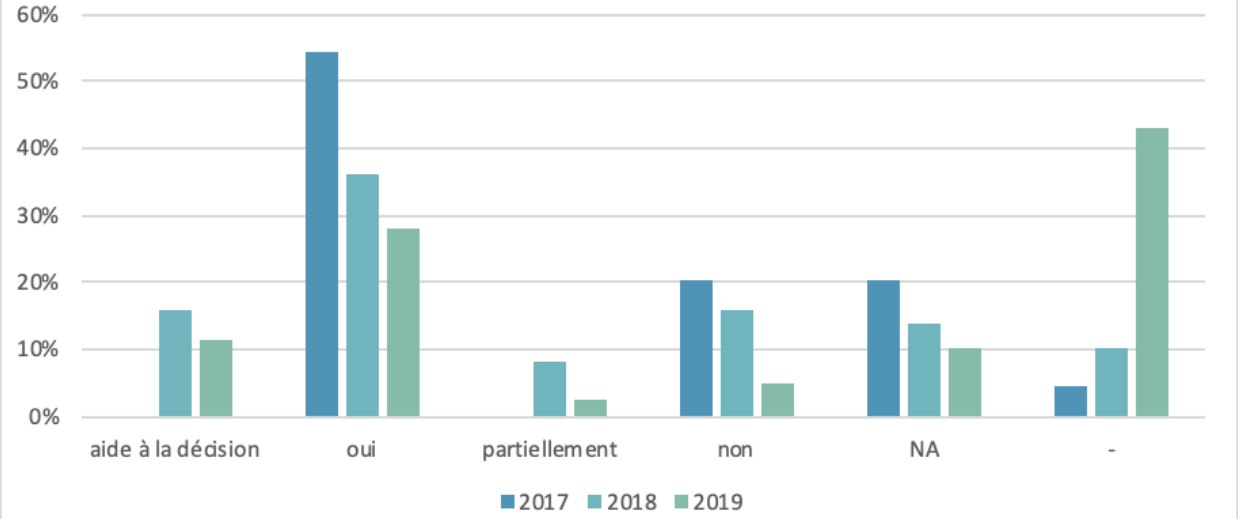


h. The output

The projects' outputs vary. Some deliverables are used as tools for decision-making, others lead to the implementation of a solution, but sometimes, the output from a project is discarded or only partially considered.

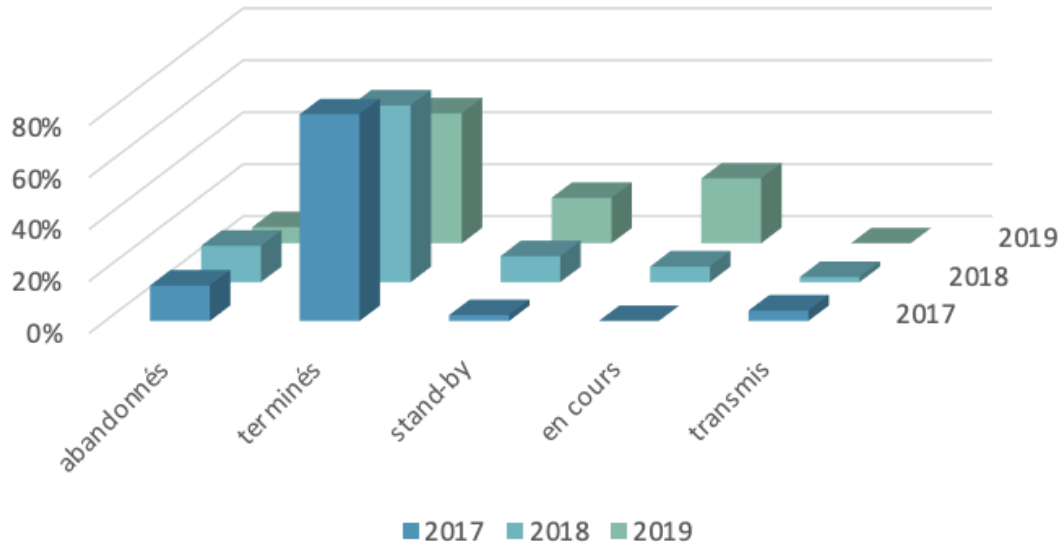
In 2017, nearly 55% of the projects led to the effective use of the team's output and immediate result; 20% of the work on the projects have been of use primarily to the team, and 20% of the contributions led to a dead end. We are unsure of the remaining 5% of the projects that are still unfinished in 2019. In 2018 and 2019, the output from projects led to an implementation of, on average, 30% of the projects, which is significantly less than in the first year. In 13% of the projects, the project team has been used the output as a tool for decision-making on average. In some cases (5% of the projects on average), the output was only partially used. In 2019, approximately 40% of the projects were ongoing; therefore, we can't identify the designers' contribution (see Figure 68).

Figure 68 - Evolution of the valorization of the team outputs (2017- 2019)



Besides, some projects are abandoned, put on hold, or handed on before producing any output. The percentage of abandoned projects decreased over the years. Conversely, an increasing part of projects is being put on hold. No projects were handed over in 2019, unlike in the preceding years. The number of delivered projects in 2019 is significantly lower than in the previous years and has been decreasing since 2017 (see Figure 69).

Figure 69 - State of projects (2017 - 2019)



3. Team's rituals and meetings

The team created several rituals. Daily, members gather for informal talks for on average thirty minutes over morning coffee. Weekly, they gather for a one-hour follow-up meeting in which everyone shares his/her progress of the week, the difficulties they got confronted with, the attribution of new subjects, and new deliverables. Once a month, they save half a day to a more extensive meeting composed of three phases. The first phase is dedicated to a review of the work; the discussion follows a model with four focuses (D.A.K.I.): what the team would like to Drop, meaning what they would like to discontinue doing, what the team would like to Add, or start doing, what they would like to Keep as is and lastly what needs to be Improved. Then, in the second part, an expert can be invited to talk about a chosen subject. Someone in the team can present some learnings from a project or an event. The content depends on recent activities and opportunities. The last part is about creativity. I initiated this ritual when I noticed that the diversity and the number of ideas generated in the projects decreased. I looked for a way to stimulate the creative abilities of the team. Based on books on creativity enhancement, I offered some exercises to the team, started creating some, and then handed over the reins to other designers. It became a ritual. In addition to the meetings, an upskilling program targeting specific skills development such as Ethnography, User Research, and Ideation techniques was initiated in early 2020 to help the designers develop their skills.

The Experience team has set a discussion group on the company chat tool (Microsoft teams). This channel of interaction allows both collective and private individual exchanges, either in writing or videocalls. It also serves as a shared online space to store and exchange all the designers' documents and productions. The Experience team uses visual management software, creative online digital tools

and databases (e.g., virtual whiteboards, toolbox, image banks, mind map builders) and CAD (Sketch-up, AutoCAD) and DTP (Adobe Creative Suite) digital solutions.

4. Evaluation of the Experience team

a. Appraisal of the Experience Company mission (2017-2018)

After one year of existence, the Experience Company mission had accompanied 23 projects for various departments targeting both employees and customers. Two hundred and fifty employees participated in training workshops the team organized and conducted. The mission members joined as a speaker various seminars, conferences, and workshops to present its activities in the headquarters and several other locations in France. The audience of those presentations involved more than seven hundred employees. They drafted a vision, a strategy, and a communication plan for Design and Experience diffusion. It released a COOC (i.e., Corporate Open Online Course) in which more than a thousand employees joined voluntarily. A survey has been conducted with the ten project managers the experience company mission used to work with, in 2017. They expressed satisfaction of 6.8 on 10. The more enthusiasts appreciated the "constructive contributions" that "opened new perspectives" and the human involvement. The others wished that the Mission had a greater availability to go deeper with them in their projects. They regret that the team was too small to be able to accompany their project thoroughly. More generally, areas for improvement include being more present in projects, more responsive, and more available. In other words, they call for more. When asked for keywords to define the mission, they say: "Constructive," "Effective," "Informative," "Sequential," "Useful," "Motivating," "Friendly," "Pleasant," "Ambitious," "Progress."

In symmetry, the Mission members express "delight" and "appreciation" for the benevolence and the commitment of internal clients. They underline the amount of work carried out and partial disappointment due to their inability to respond to some requests. They identify barriers hindering their activities (e.g., project teams asking for help too late, or activities conflicting with the role of existing teams) and areas for improvement (e.g., clarify the conditions of support on projects and hiring complementary human resources to be able to do more)

Therefore, the main challenges for the years to follow were the necessity to grow to meet the stakeholders' expectations, explicit the team's activities, and present the project members with various accompaniment options. The objective was to reduce the activities focused on building the vision and the process and grow the part dedicated to projects that create value (i.e., projects launched by and with other teams that lead to improved user experience). The following chart (Figure 70) is a retrospect model of the activities of the Experience company mission in 2017 and projections for the years to follow defined by the CDO (Figure 71)

Figure 70 - Model of the projected distribution of the team's activities over the first year and the desirable evolution in the coming years.

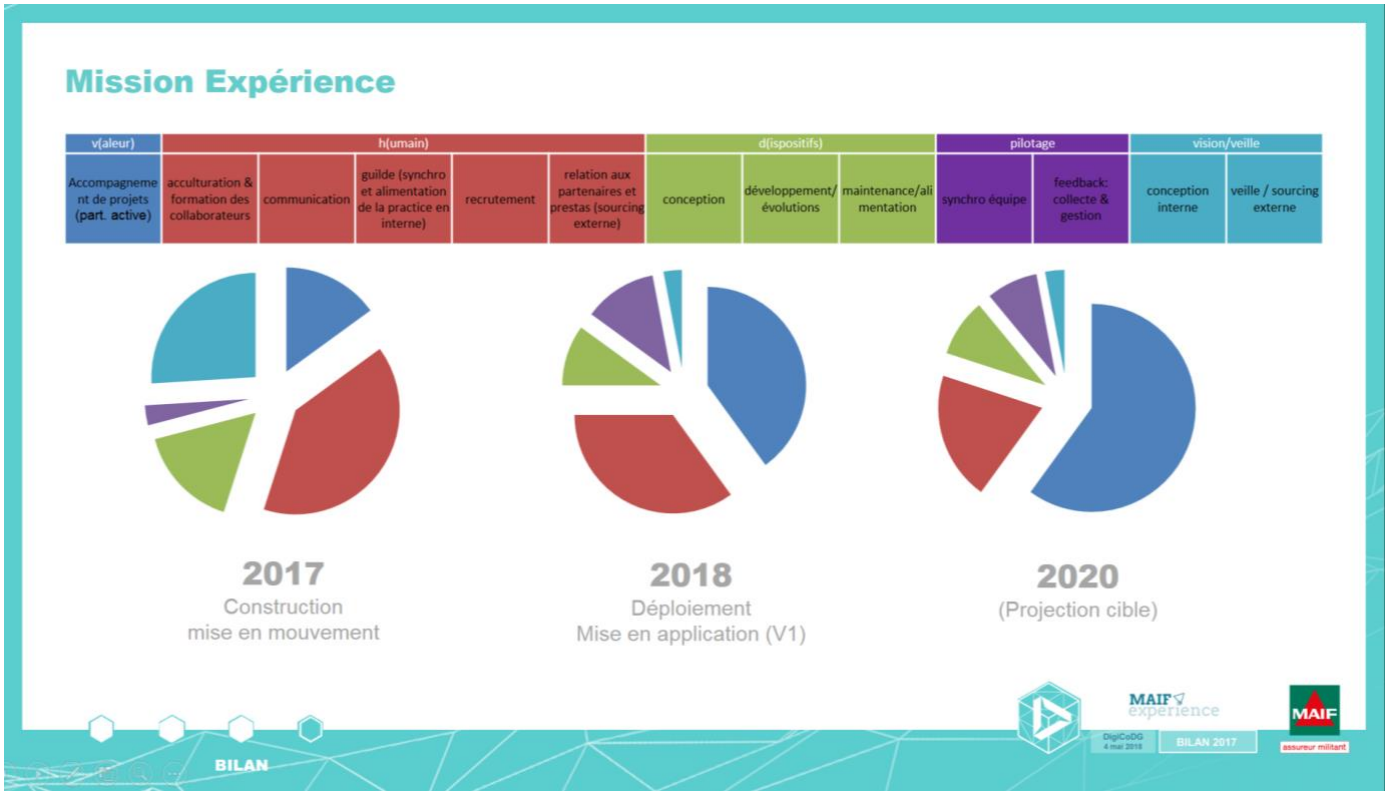
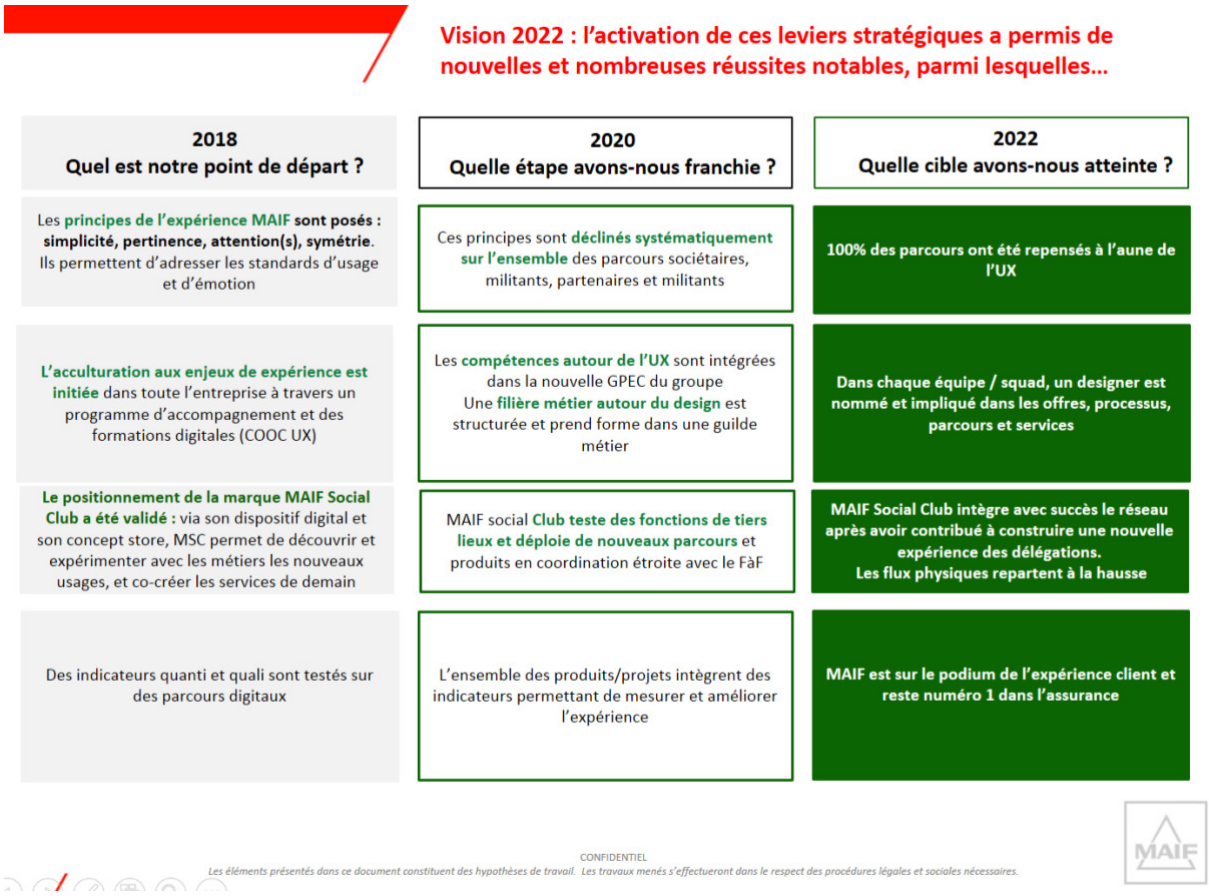


Figure 71 - The objective defined by the CDO and presented to the Board of Directors in 2017.



In parallel to the need for recruits to pursue the activities, the work on the vision led the team to draw a new organization for Design that got implemented in July 2018 and led to the transformation of the Mission into a team. Being a team means more visibility to other departments (i.e., the team appears in the organization chart) and allocating dedicated resources (financial, human, and spatial).

b. Appraisal of the Experience team (2018-2019)

One year after the Experience team launch, a discussion gathers the members, the manager, the CDO, and the Head of Strategy to assess the work conducted in the first year and the main challenges to tackle.

The Head of Strategy draws up an upbeat assessment of the overall development and progress. He insists on the fact that the team gained credibility through its contribution to projects. When presented to the board of Directors, some of those projects helped recognize the team's utility.

> "The experienced team is now installed and recognized. It has acquired credibility through its productions and its impact on projects, particularly thanks to its methodology. A milestone has been reached, in particular with subjects that are visible to the board of Directors. In other words, they see the interest of the approach and the contribution. The method has made it possible to install the approach."

He then points to several areas for improvement, insisting on two top priorities and two orientations.

> "However, there is still work to be done, including convincing individual players in the company, sometimes with a fear of competition and an abundance of work. All of this is closely linked to the cluster's service offer: positioning, choice of subjects. We need to work on the coherence and prioritization of the subjects."

The priority is to sort out difficulties in the relationship with other teams. He perceives conflicts over the scope and a lack of buy-in or commitment of specific teams that the Experience team needs to work on.

> "The competition problem is perceived as such by other teams and departments, who have questions about the team positioning.
> Another problem is the lack of support from some
> When we launch initiatives, there are different problematic postures among our interlocutors:
> - those who feel they can do without us.
> - those who do not know what we are doing or what we are in the process of doing (example: the Head of the Operations division who is not aware of an ongoing project that affects the merchandising in agencies, which are part of her scope)-
> those who play the game only partly, by doing 30% of our work, look for the «stamp» we worked with them."

The second priority is the necessity to start "choosing its battles wisely." He suggests that the effort dispersion in many projects is detrimental, and he invites the team to prioritize and stick to a few actual priorities.

> "The problem of proliferation is related to the desire to go in multiple directions and the desire to go in different areas (for example, merchandising), but we cannot be everywhere. We must learn to say no and prioritize. The observation is that sometimes the choice of subjects lacks coherence and prioritization."

He suggests the creation of the "experience signature" has been a turning point in the team's activities, arguing that it marks the end of the "acculturation phase" (focused on introducing the Design approach

and the existence of the team to other departments) and the beginning of a new phase focused on "Designing" (i.e., producing results and impacts). The move from the first phase to the second means formalizing the practice to establish a referent process (i.e., define what the team offers: the types of deliverables, the types of value proposition, the types of interaction with teams and projects, and so on.)

> "Two aspects are at stake in the dissemination of experience within the company:
> - Training and acculturation (a lot in the beginning)
> - Production on selected projects
>
> The distribution is evolving from a percentage close to 60/40 to a proportion relative to 20/80 (there is no consensus on this percentage). From the previous weight of our work in favor of the acculturation phase (60% of activities), now on we have to switch to production and implementation: 20% to maintain acculturation (to work out the mobilization and the strategy) and 80% to produce and induce the integration of the dimensions of experiences in projects. We are at a critical moment. We reach a paroxysm with the work on the experience signature, which is a step necessary to initiate the shift.
>
> As a team, you have to work on the pedagogy and the concrete operational contribution that leads to action with a strong modeling effect. We must now stick to a method and explicit it in a formal way to make the contribution simpler and more precise. (e.g., define a typical narrative framework to use in each presentation: before/during/after for the presentation of the results)."

The last orientation deals with one of the strategic tools created by the team that is perceived as too complex to use for non-design teams and needs to be made more accessible to the rest of the company.

Besides, the CDO suggested three recommendations. The first one is related to (1) the necessity to "scale the practice" to aim for a more significant impact. To do so, the team has to capitalize on transversal tools recently developed by other Design teams and join forces with the other designers in the firm. The second deals with (2) a greater focus on implementing the customer experience's improvement over the employee experience. He calls for (3) increased collaboration with the DF and the Innovation team.

The members agree with the difficulty of embarking on other project teams showing projects that did not go well and other projects in which the recommendations produced by the designers were dismissed or abandoned in part or whole. The Head of Strategy reacts to that, suggesting that it takes time to integrate this new practice and that some project teams are not inclined to work with the Design team but do so because they are asked to. Nonetheless, he states that such a situation is better than not being part of the project at all; in other words, the mere presence of designers in projects is better than nothing:

> "In 2 or 3 years, we will approach such a project efficiently, intelligently, etc. However, it takes time. In -reference to the project discussed and the project team- they did not intend to really work with us; they came and asked for our contribution to buy themselves some credibility (the user-standpoint stamp). If they come to complain about the solutions implemented soon, I'll take the records of the recommendation we made and what was done and show them the gap. In the company's life cycle, it is not excluded that it is useful despite the present frustration. It may help in avoiding such mistakes in the future. It is not as bad as if we had not participated..."

c. The Experience team appraisal (2019-2020)

Two years after the launch of the team, the CDO states that the team needs to demonstrate its value for projects:

> "We still have to show the use of the Experience team."

Indeed, several people do not understand the role of the Experience team, such as this designer from the DF said:

> "I am still unsure of the role of the Experience team in regard of what we do in my team; I do not think many people understand what it is supposed to do nor its position in the organization."

Or this quote from a project manager asked to collaborate with the team:

> "I'm not sure why we have to work with the Experience team on this project. We need to clarify their role in relation to ours in order to avoid conflict over the ownerships. At the end of this project, I solicited a meeting to review the collaboration and enlighten the position of the team for projects to come."

The deliverables on the team projects are, as the portfolio demonstrates, more focused on User Research than on participating in projects from end-to-end or implementing new solutions. As project managers are autonomous in acting on the recommendations and advice issued by the Experience team, their implementation is uncertain. It can be disregarded from the start, get lost in the project development, or simply be falsely or unsuccessful. The Experience team has a reduced impact than the other two teams moving up to the implementation. This questions the positioning of this team and activities definition.

> "Are experience designers really necessary in the company? There are already people crafting the experience and delivering the experience: the ones building digital products and the ones in the front line of services. (…) They create, make and deliver. What can an experienced designer deliver? The team is supposed to build on its mastery of the customer journey and experience mapping, which is not its current activities." (one of the managers)

5. Managing the Design team

In June 2020, I collected the feedback of the Experience team manager on the progress the team made and the remaining or new challenges to tackle in the coming year. The team's manager acknowledged some barriers and ways for improvement consistent with the doubts and appraisal of the other stakeholders. The team conflicts with others, such as the newly created ones in charge of supporting customer satisfaction (in the Operations division) and employee satisfaction (in the Human Resource Division) or the Innovation team.

> "The relationship between the team and the company is both complex and constantly changing."

> "Complex because it depends on the interlocutors, the moments, the subjects. If we note, globally, an adherence in principle to the Design process, to the approach, it induces diverse relationships."

> "Relationships are very fluid with certain professions that see the team as an ally in building adapted, innovative, and unique responses to their clients' needs."

> “the intention to carry out transversal projects within the Digital department very clearly on this project did not work (…) In fact, without rewriting the story, the designer from the Innovation team started as the project manager, which made sense since it was the way the project was launched from the start. However, the duo with one of the designers in the Experience team didn't really work out as expected, or even at all, so the Innovation team kept the lead. Which in itself is okay because it was well done. However, of course, it raises questions for the Experience team, and it raises questions on the roles of the teams and for the Design organization, and especially between the Innovation team and the Experience team...(another very similar project has been launched by one of the (Experience team) project manager, hence the question about the role of the Innovation team in relation to the role of the Experience team)”

Difficulties of interactions between the team members and internal stakeholders have been highlighted considering the transversal nature of experience projects :

> “Others, more numerous to date, are still skeptical about the team's contribution and the methods of solicitation. Some may even perceive the team as a «lesson-giver,» questioning the work and actions they have put in place. Finally, some are distrustful because they are part of a territorial logic that is not compatible with a transversal approach to the experience.”

> “Some internal clients have the feeling that the team is questioning their skills and work. This generates much frustration because, in such a situation, the identification of the points of tension and the opportunity for action do not enable the launch of a collaboration. On the contrary, it results in a rupture of the relations with the team.”

> “with some actors, it's actually complicated. It's complicated because we can't find the right articulation. I think they see us, and we probably have some responsibility in it, as lessons-givers, to say so, are the kind of people looking at the experience and their work and criticize it. I think that's how they see us. Moreover, we have a hard time convincing them to be in a real UX approach. They are still very sure about their practices, convinced that they know the user, and can think for them.”

The team manager suggests that there are some specificities related to the management of a Design team, like the need to act as a lobbyist to promote Design:

> “It's a transversal function, so there are doors to open and many relationships to build with other business units to explain the approach.”

The second one is about the specificities of the experience projects. The manager feels like she has to find leverages to motivate some designers that she defines as “creative profiles” to deliver on time and to tackle some “heavy organizational processes” instead of more “shiny projects” such as new product development. In other words, to work out the firm's legacy and focus on alleviating the administrative burden inherited from the industrialization phase.

> “We need to convince creative, autonomous or even independent profiles to work along with the cumbersome processes of large companies (e.g., meetings, collective emails, validation processes, etc.); so, we need support on these aspects to find a balance between dealing with the culture and the existing and getting the lines moving. It also requires particularly close monitoring to meet milestones and deadlines.”

She also underlines the challenge of understanding and maintaining the Design competencies of the team:

> “Design is a discipline in constant evolution, and it covers very diverse and varied realities and skills. It is difficult to find satisfactory training courses to upgrade the skills of internal profiles.”

The latter is all the more crucial since the hiring process is challenging:

> “I'm having trouble finding and bringing in experienced profiles on UX* Design. There are mainly UI profiles or product Design. Most designers have little interest in joining a large service company and a relatively new specialization on UX*.”
> *UX is used by the manager as a synonym of experience designers; it should not be understood as a reference to UX designers working on digital products.

She points to creativity and performance as two topics to dig into. Finding ways to assess and improve team performance is a pressing issue to demonstrate the team's value to skeptical colleagues. This is a challenge because it is not easy to move beyond the existing economic (growth of the customer base and contracts distributed) or marketing (customer satisfaction) KPIs to monitor the "feelings" and the emotional journey of the customers' experience:

> "Performance measurement is a short-term priority issue for the team: i.e., identifying, building, and monitoring KPIs of the performance and impact of the Design. Today it is complicated to measure the experience dimension because it is very much about feelings and emotions; it is often confused with satisfaction."

Another priority area of attention is the creativity of the team:

> "This is a subject of permanent attention and, in my opinion, a major issue in the coming months. There is a complexity in maintaining creativity in tools, methodologies, deliverables within an internal team that doesn't have to be caught up by the culture, the habits of the company, and innovation. it remains a complex ongoing challenge."

On a more positive note, she notes the team's progress in terms of work organization. The team started to use some digital tools to monitor its activities, established a visual management ritual, and created a template to frame the delivery of the results of user research studies. Besides, she insists on the growing number of projects carried as proof of the team growth.

D. The I.T. Design team

Launched in January 2020, this fourth and most recent team is dedicated to improving employees' workstations and HMI (Human Machine Interactions), in other words, the digital tools used by employees in their daily work.

1. General outlook on this new team

The team focuses primarily on the interfaces dedicated to the core business (insurance distribution and claim management), the workstation in general, the intranet, and the various dashboards. They work on projects similar to the DF's ones that are dedicated to customers. A dozen people are part of this team, mainly coming from the I.T. division. At first, the designers' jobs are filled in by internal employees retrained in Design, but seven external designers will be hired by the end of 2020. An initial roadmap was built at the launch of the entity.

The team established from its start two rituals: they build project reviews in which the teammates share and discuss their Design work and carry ninety minutes weekly meetings dedicated to the follow-up of the ongoing project and the monitoring of improvements of the workstation labeled the "Workstation Design Circle." Other thematic sessions dig into a specific topic, such as getting familiar with the Design System.

2. Words from the manager

One of the main challenges pinpointed by the team's manager deals with the background of the members. He fears most of the team's expert mindset inherited from experience in I.T. and engineering backgrounds will be hard to transform into a Design mindset. He says :

> "Coming from the I.T. division, with a strong I.T. engineering culture: we have to work on developing our flexibility and a new mindset!"

However, he relies on pairing of novice designers with freshly hired senior designers and a close managerial follow-up of skills development to tackle this issue:

> "We have a snapshot of the skills for the in-house staff (with the skill grid system built and shared in the Design guild), we have spotted training courses, and for every subject, a junior designer is accompanied by a senior designer. Generally speaking, designers go in pairs or more (without redundancy)."

The manager also discerns three main threats to the team's activities: the reluctance of some developers not convinced yet of Design contribution, the staffing that he considers a little bit tight (young and outnumbered), and too many subjects to run.

E. Common Design Tools among the teams

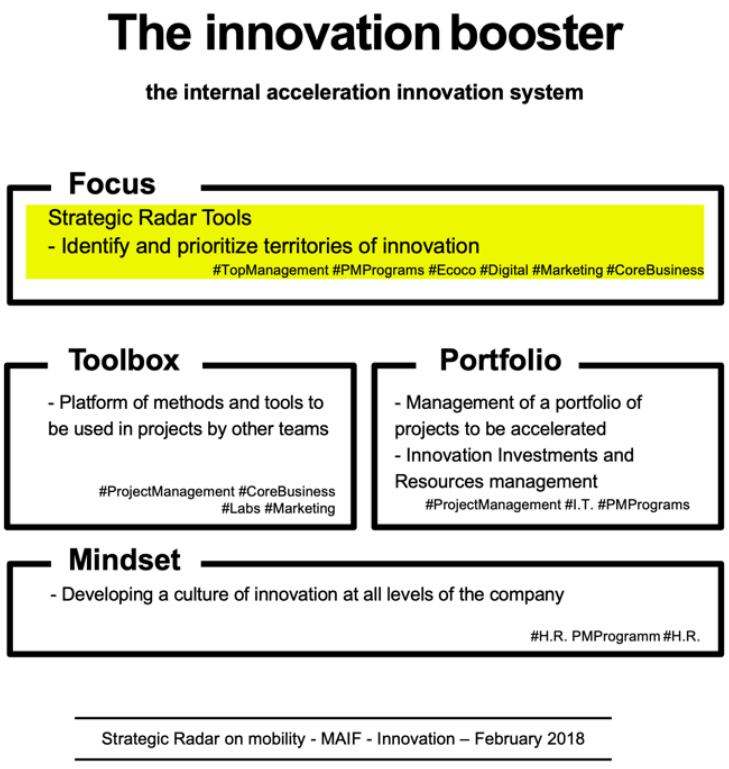
Each Design team crafted specific tools in their projects and improved the collaboration with the other (non-Design) teams on projects. They contribute to showing the value Design can bring to the firm and develop the practice and expertise. We focus in this part on three tools developed by each team: the "Strategic radar" created by the Innovation team and launched in 2018, the "Design system" developed by the Digital Factory and launched in 2019, and the "Experience strategy tools" created by the Experience Company and pursued by the Experience team respectively in 2017 and 2020.

1. The "Strategic Radar" designed by the Innovation team

In the first years of the Innovation team, the designers and project managers worked on a tool dedicated to Business Intelligence for innovation. They designed the "Strategic radar." This tool is part of a broader system (see Figure 72) built to develop the organization's innovation practice, labeled as "the innovation booster." composed of four levers to serve the Innovation team's objectives:

- to explore new territories for innovation,
- to equip project teams with tools and a methodology to innovate,
- to develop a culture of innovation company-wide,
- to build and manage a portfolio of promising projects.

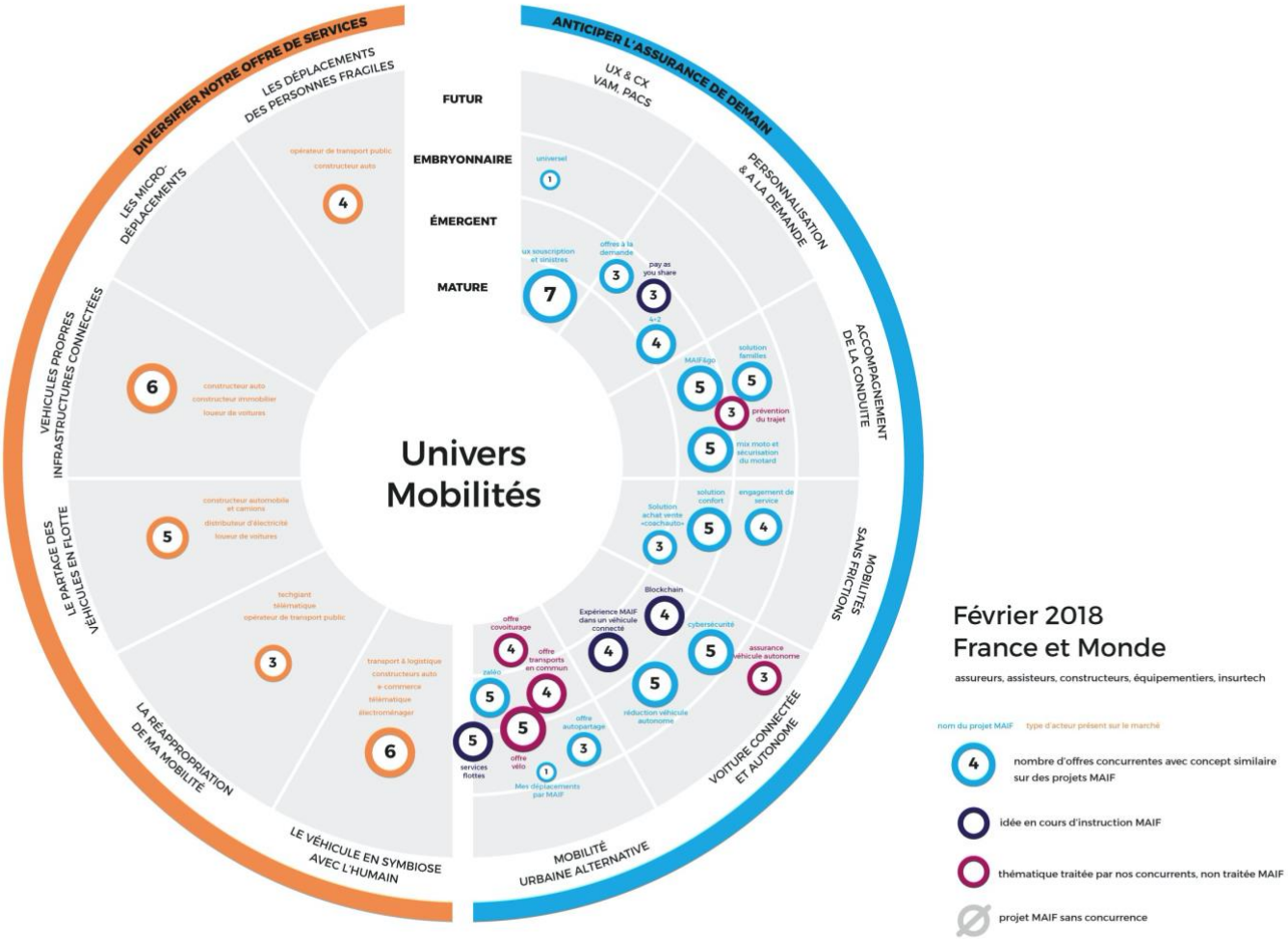
Figure 72 - Extract from slide deck on innovation activities from 2018



The “Strategic radar” (see the preview: Figure 73) aims to identify future business opportunities; help multidisciplinary teams with various roadmaps prioritize new projects; facilitate the vision between short, medium, and long term; and promote exchanges and coordination between teams. The need for such a tool emerged when the Innovation team was faced with several avenues to explore (such as Mobility, the Silver economy, or Health). It was developed by a multidisciplinary group involving incubation team members, external designers, people dedicated to SSE (Social and Solidary Economy), and others from Marketing (strategic Marketing and Business Intelligence, and New Product development) led by designers from the Innovation team. Several stakeholders have been interviewed: administrators in charge of strategic orientations and their implementation, Head of departments in charge of developing and implementing the strategy, Head of Projects and Programs, product managers, partnerships managers, and business analysts. Once developed, the leadership of the tool was transferred to the Marketing.

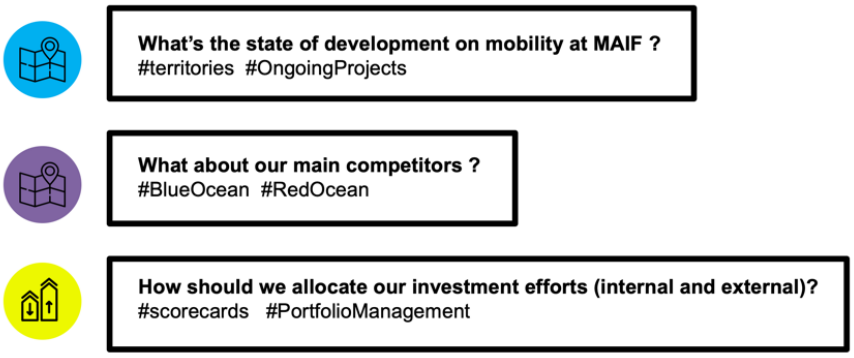
The radar distinguishes the internal and external projects in two on a specific subject: the orange side is dedicated to pursuing the diversification of offers. The blue side is dedicated to innovation for the core business.

Figure 73 - A view of the «strategic radar» related to mobility in 2018



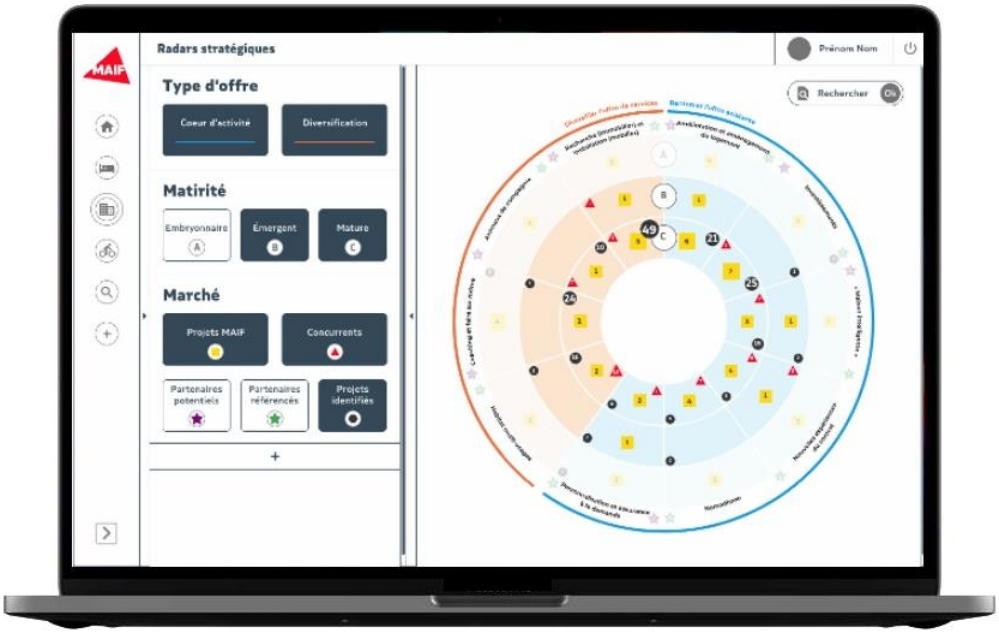
The radar displays the state of development of the subject considered at MAIF and the advance of competitors. From this radar, the Innovation or the Marketing team formulate recommendations related to the allocation of resources and investments on the subject (see Figure 74).

Figure 74 - The focus of the radar (a slide from the slide deck on strategic radar presentation from February 2018)



Initiated in 2017, in use since 2018, it is in the process of becoming a digital tool scalable and widely used. Indeed, the digital device would be connected to existing databases at use: an open-innovation database (the partners' repository developed by the Hub) and a Business Intelligence database (used widely in the company to aggregate, store and share articles, videos, and any form of pieces of news by streams of interests). Using API to connect the databases to the digital radar would enable collecting and displaying —semi-automatically— data related to the subjects explored. Consequently, the radar would dynamically update in Real-Time while being easier to read and access. It also interacts with the Project Management Program Office that manages resource project allocation for the whole company. The development and integration of the tool in existing practices followed a Design approach. Figure75 is a screenshot of a prototype of the digital radar.

Figure 75 - Mock-up of a preview from the future digital tool (10/2019)



2. The “Design system” developed and led by the Digital Factory

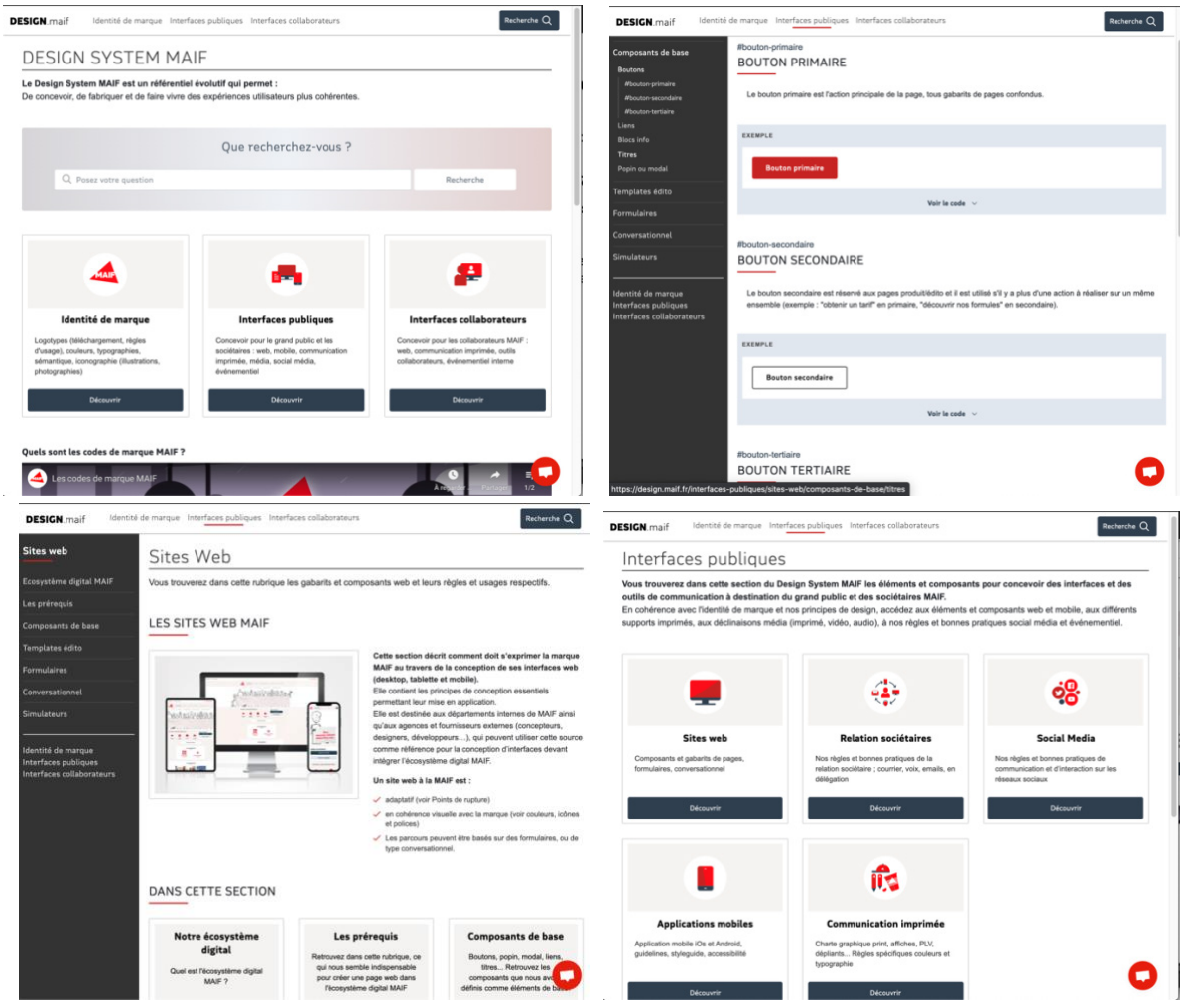
The customer experience analysis revealed a lack of coherence across the various distribution channels regarding the graphic layout, the interactions, and the content. This variety harms the quality of the customer experience and generates extra costs. Therefore, the CDO identifies the need for a “Design system,” a tool that digital native companies use to fast-track the development of a consistent experience across the various touchpoints, especially the digital ones. A Design system is in line with the company's visual identity chart that defines brand guidelines and the norms of representation, but it is not limited to guidelines. It serves as a resources repository. MAIF's Design System is an *“always up-to-date repository that allows us to Design, build, and deliver more consistent user experiences.”*
A team led by a designer from the DF developed the Design system decomposed in the digital platform to host the content, the content, and the organization to update and improve it. He recruited two people from various functions at the DF. To begin with, they conduct user research (mainly interviews) with external and internal actors. The external study (feedbacks and advice from other companies that went through the implementation of a Design system) provides them with a collection of insights and a benchmark. The internal actors, potential beneficiaries, and contributors (e.g., project managers or marketing managers) express their needs regarding such a tool. From this first round of research, they define a first version of the content. They draft an information architecture and search for an appropriate structure to host this content. They build prototypes and recruit beta-testers. This first version is used in an actual production situation. Beta-testers provide feedback on the information structure, the relevance of the content, the ease of use, and various features that enable the core team to refine the most efficient prototype and launch it. The Design system is a website that anyone can access *(https://Design.maif.fr/Design-system.html)*.

The Design system benefitted from convenient timing. The project is launched in parallel with the Design Guild. It is a transversal tool that will help the members of the Guild. It is defined as a priority, which eases the recruitment of interviewees and beta-testers. Besides, the project is launched a few months after the decision of the executive committee to update the brand identity that is 25 years old. Therefore, the delivery date for the first launch of the Design System has been aligned with the day of the unveiling of the new Brand identity. The team worked with the communication teams to make all the new Brand guidelines, document templates, and identity components accessible from the tool they are developing.
The Design system website is unveiled on the day that follows the discovery of the new Brand identity. All the employees are invited to get their new templates and necessary materials. This facilitates its promotion and adoption. It is of value for the communication teams that do not have to build a repository of their own and that had been struggling in the past with the diffusion of the guidelines and documents. However, like for any standard, the difficulty lies in searching for a balance in daily Design decisions

between the freedom required for change and the respect of the frame defined to ensure brand coherence. Actors from the Design factory argue that to test users' preferences, it is preferable to oppose a solution developed starting from a blank canvas than one originated from the Design system. This put the Design system at risk of becoming obsolete, requiring several updates. Other designers argue that the Design system exists to prevent such practice and claim the start from the Design system guidelines. The first ones say that the latter approach is biased and may lead to less innovative solutions. It is a debate over the limits in individual freedom of practice. The Design system is supposed to frame players' creativity.

The following pictures (figure 76) are previews of the Design system website.

Figure 76 - Screenshots from MAIF Design System (July 2020)



3. The Experience Design strategic tools: MAIF experience signature and principles

The Experience company mission worked on benchmark in terms of user experience. They defined four Design principles as part of the Experience Company mission: the search for simplicity and relevance, the need for attentive behavior, and the consideration of the customer experience in symmetry with the employee experience. Each principle is detailed in sub-principles. For instance, the simplicity principle invites the project teams to assess: (i) The clarity of the content (Are they using words from a common language or a technical language ?), (ii) The accessibility of the solution (Is the solution simple to access? Is it easy and effortless to navigate ? What are the barriers to approaching the company and this solution ?) and (iii) The search for efficiency (Have the steps and actions been reduced to the minimum ?) They act as a grid that can be used to define the main criteria for assessing the solutions during user tests. Program leaders use them as well to challenge and evaluate the solutions produced and as a source of inspiration for new products and services.

In addition to the experience principles, the CDO and the Head of Strategy asked the manager of the Experience team to work on the definition of MAIF "Experience signature": the features that distinguish MAIF from its competitors, which is associated with the brand in the mind of customers. As an example, Airbnb's experience signature is "building trust." The brand acts as a third party that can be trusted. They use the analogy of someone inviting a friend to the party of another friend. This person is a mutual friend that can be trusted. It refers to the saying, "the friends of my friends are my friends." The Head of Strategy and the CDO are convinced that a signature is a significant intangible asset. Furthermore, it is complementary to the work conducted on the *"raison d'être"* ("a corporate purpose") and the long-term vision. Since the strategic plan set out the ambition to reinforce MAIF's singularity, the Experience Design team has launched user research to identify the significant features that form the singularity of the MAIF experience. The first milestone of this work is to «precisely define the singularity of MAIF in the experience the customers live and the one that the company wants to offer as a signature to our audiences.» The Head of Strategy, as well as the CDO, were sponsors of the project. The entire experience Design team has been involved during the Design phase, as well as contributors from the Operations division (known as "Corporate Relations") and the Human Resources Division. An external Design agency helped discover part of the process (the user research and ideation). I supported the project manager (Experience team manager) to build the project's methodology, select the Design agency, and help in the signature's Design. The project has been officially launched at the beginning of February 2019. It has been articulated in two steps: discovery (user research, ideation, test with internal users) and delivery (creation of communication deliverables and their promotion).

This signature is used in the same way as the Design principles and distributed across the organization. One of the principal limitations of those two tools is that while they are helpful in the strategy articulation to define the orientations and guide decision-making, users in projects still find them too theoretical. Further work needs to be done on the applicability; more practice-oriented adaptation.

III. Design integration within projects: analysis of two projects

Up to 2016, new products were developed in a project mode and prioritized by the Project Management Programs. The PMP was based on the organization's structure (i.e., on the perimeters of the general seven divisions). With the digital transformation and the modernization of the company's information system, Agile project management model has been developed in parallel with the project management model in use and progressively replaces it. In this last part of the chapter, we explore two cases of designers' integration in projects. One represents the early days of the new project management emerging model and involving the Innovation and the Digital Factory. The other consists of the Experience team and is representative of the old way the majority of projects have been conducted.

We focused on the role played by designers and Design in the projects. Therefore, we investigated the following questions built as an analysis grid based on literature about Design: (1) why are designers called in on the project (Hernández et al., 2018)? (2) When are they involved (Seidel & Fixson, 2013)? (3) How do they intervene (Seidel & Fixson, 2013)? (4) What do designers do (Fayard et al., 2017)? (5) With whom do they interact (Zomerdijk and Voss, 2011)? And (6) what are the output and outcome from Design intervention, and how are they measured (Zomerdijk and Voss, 2011)? These questions were inspired by the authors cited above, who examined these questions in their research about Design (Table 15).

Table 15 - Grid of analysis of the projects

	Element	Grid of analysis of the projects
1	Why are designers called in in a project?	Hernandez et al. (2018) have identified six motivations: (1) Design to differentiate (2) Design for the introduction and adoption of innovations in the market (3) Design to transform ideas into concepts (4) Design (as) research (5) Design as a (creative, generative) thinking process (6) Design as techniques to articulate ideas and to integrate concepts, people, and functions
2	When do designers intervene in an innovation project process?	Seidel & Fixson (2013) have identified three moments: (1) Needsfinding (2) Ideation (3) Prototyping
3	How? What is the methodology used by designers?	Seidel & Fixson (2013) have identified three methods: (1) Formal vs. Informal (2) tight vs. loose (3) Team reflexivity (Flexibility regarding the method)
4	What do designers do?	Fayard et al. (2017) have identified three values of service designers: Holism, Empathy, Co-creation and three practices: Conducting Design research, Visualizing, Prototyping
5	With whom designers interact in the project?	Zomerdijk & Voss (2011) have highlighted that the development of experiential services requires cross-functional teams.
6	Measuring the output and the impact.	Zomerdijk & Voss (2011) have distinguished three situations for experiential services: (1) traditional measures (e.g., customer loyalty or satisfaction), (2) continuously or discretely measured (3) no dedicated metrics to assess the emotional components of the customer experience or the impact of investment/effort put on experiential service innovation Outcomes can be incremental changes (« finetuning,» « updating») or radical changes/novelty.

A. An emblematic project of the Innovation team involving the DF: Leisure Sailing

This project is symbolic of the Innovation team activities and displays the difficulties encountered when Design is integrated into a company that is not used to it. This project has had a significant impact on the way the Innovation team conducts projects.

It shows :

- a collaboration between experts in Marketing and in Design,
- a hybrid Design intervention strategy (i.e., a partnership between an in-house designer and an external Design agency),
- a gap between the skills acquired in the Design training and the reality in the field,
- the establishment of a virtuous circle favorable to the integration of Design and project-based learning.

1. A strategic project, the first for the newly hired designer

It is an innovation project whose objective is to develop a new service to acquire new customers: leisure sailing enthusiasts, from beginners to professionals. This project is set to create a service peripheral to the core business (i.e., that is not an insurance cover). The board of Directors commissioned this strategic project in 2015 (i.e., a project that is central to the execution of the first strategic plan in 2015 with the objective of the diversification of the company's activities and portfolio) to the Marketing department, the historical player for new product and services development. The project is sponsored by the Head of Strategic Projects, who reports to the Managing Director. In the short term, results were expected faster than the average two years it generally takes to complete a project following a linear methodology through the V cycle. Strategic projects are aiming to test the company's ability to innovate from end to end, in other words, from the identification of an opportunity to the distribution of a new offer. They have a dual role: to produce innovative solutions and contribute to the evolution of the existing project management model by experimenting with new ways.

Following the sponsor recommendation, the project manager from the Marketing department asks for the support of the Innovation team. The project team involves five people: two (including the project manager) from Marketing, one from the Business Intelligence, and two from the Innovation team (including a first freshly hired designer). This is the first project carried out with an in-house designer.

2. An emblematic project brief of the Innovation strategy

The initial brief given by the board of Directors is open and straightforward. The “universe of needs” (the category) targeted by this project is “Leisure Sailing.” The only firm requirement from the outset is framing the project team exploration to anything but insurance products and services. The main objective pursued is to build a community of customers and prospects. The project is launched when communities of interest are growing, such as the *Blablacar community (on the carpooling platform)*.

The book “L'âge de la multitude: Entreprendre et gouverner après la révolution numérique”[14], pubished by *Nicolas Colin* and *Henri Verdier in 2012* is often quoted at MAIF at that time; it features the development of digital platforms in support of communities.

A twenty-year-old insurance cover for leisure boats exists already when the project is launched. The insurance products are built based on probability calculations, which rely on the pooling of risks from a group of individuals sharing a similar need. In other words, insurance is based on evaluating a set of risks defined by the activities of a group of people. The policyholders' group size is crucial for the profitability of the product and the compensation of potential losses by a sufficient mass of contributions. The Leisure Sailing insurance product had 35,000 customers interested in the product. However, in 2017 when the service is launched, it represents less than 1% of the yachting market in France. According to the press release announcing the service launch and published the same year, France has 4 million yachtsmen and 9 million occasional water sports enthusiasts. It is a promising market, where the company has a minimal share compared to its main competitors, such as MACIF. This press extract from an article in the *Argus de l'assurance* in December 2017 shows that the firm is recognized as an emerging however knowledgeable player in the sailing market:

> “The boat show is in full swing at Paris-Expo Porte de Versailles and, among the ten or so exhibitors from the insurance sector (Macif, Axa Plaisance, ...) a newcomer is attracting attention: MAIF. For its first appearance in the aisles of this Parisian nautical show (following a first noticed incursion at the Grand Pavois de La Rochelle show in September 2016), the Niortaise mutual insurance company is brimming with ambition. Rather discreet since 1998 - the date of creation of its yachting insurance offer - MAIF has been orchestrating a profound renovation, with the result: more modularity, more guarantees, and more services for yachters and, in particular, a dedicated underwriting team of 10 employees. They complete the team already dedicated to yachting policyholders in claims management on the Rennes plateau. Although the segment remains marginal (35,000 contracts in the portfolio) within the group, it is a buoyant one.”

The project led to a new service (unrelated to the insurance business), i.e., a platform dedicated to Leisure Yachting that matches expert sailors and boat owners with novices and boat lovers. The experts and boat owners offer training and coaching sessions to sailing apprentices and boat tours and experiences. Boat owners can also use the platform to present their boats for rent. As the extract from this press article demonstrates. At the same time, the project was not intended to lead to a new boat-related insurance product or an evolution of the existing insurance product; it provided vital learnings and insights that motivated a redesign of the insurance product. The new service and the updated insurance product grew the legitimacy of the brand in this segment.

3. Analysis of the project

In the following, we present the project using our first grid of analysis.

---

[14] (literal translation) ‘The Age of the Many: Entrepreneurship and Governance after the Digital Revolution”

a. Why have designers been called in the project?

Reminder

The Innovation team sponsored is created in 2008 with the objective of internally developing projects differently (e.g., team composition and methodologies) and be more innovative. The first projects carried out innovatively (between 2008 and 2015) pose difficulties. Whereas the project members adhere to the user-centric approach, prototyping and conducting co-creation workshops with customers and employees who are experts on the subject was not accepted. This leads to hiring a designer (November 2015), the first one in the company, to lead co-creation sessions and produce prototypes.

As no insurance knowledge is required on this project focused on Designing a new service, it seems perfect as the first newly hired designer project. Besides, the willingness to test new approaches in strategic projects gives the Innovation team a "carte blanche." This provides the recruit with the opportunity to import external practices.

There are no clearly set deadlines, but the stakes are high since the board of Directors is the internal client. Considering the high expectations, the innovation duo (the designer and the project manager from the Innovation team working on this project) asks the project manager for approval to hire an external Design agency to help.

The innovation duo launches a call for tenders to recruit a Design agency as reinforcement. The designer is enthusiastic and motivated at the idea of carrying out this first project. She masters the methodology but appreciates having the opportunity to rely on an external senior Design team. Despite a five-year initial training in Design, followed by a two-year apprenticeship in a public organization, she feels her background is insufficient to carry this project. As she says:

> "I felt I was not strong enough to carry out the project and the project team alone" (i.e., being the only designer on the project).

Her decision is driven by the organization's vision of Design as limited to prototyping and workshop facilitation. She feels like she needs extra help to explicit and advocate for broader use of Design.
This decision is well received by the project team as a whole. The experience of external senior profiles feels reassuring. The designer acts as an intermediary to identify and select the call for tenders candidates. The chosen Design provider is a service Design agency whose offer includes full-day Design training for the project team (the designer had), methodological support throughout the project, and individual mentoring for each team member. The agency starts in November 2015 and proposes a methodology in line with the one initially imagined by the in-house designer.

In support of the Project Leader (PM), an external project manager is mandated. He provides logistical support to ensure a smooth-running while being responsible for the project documentation (meeting minutes, information flow) and planning (organization and preparation of meetings). This

external project manager belongs to a consulting firm mobilized to support the management of many projects. He is in charge of project planning and works closely with the PM. An external project manager usually backs up in-house project Leaders. However, the external project manager is not familiar with Design and doesn't participate in the Design training process. The designers plan the workshops and meetings and lead the main steps of the project, so the external project manager is deprived of his role.

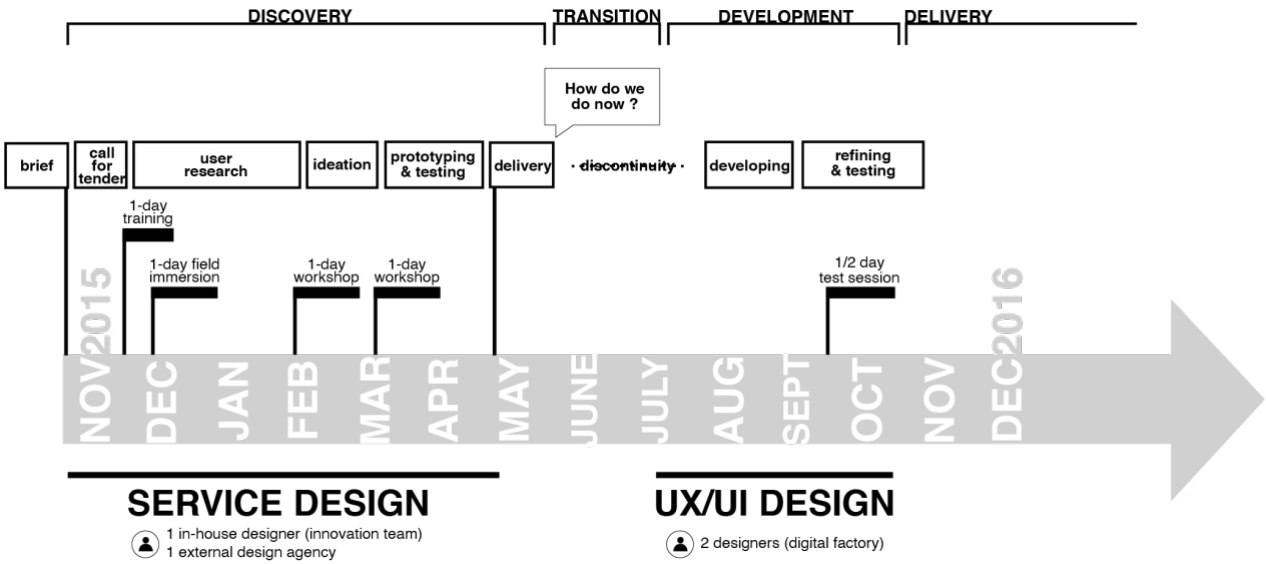
Other in-house designers and interface specialists are later mobilized to produce the service, which will be based on a website.

At the origin of the designers' solicitation, a recommendation anchored in the willingness to "do things differently." Hence, Design role is to "transform an idea into a concept," in other words, to propose a tangible or intangible product (service). The PM and team members follow the Design experts' recommendations.

b. When have the designers been involved in the project?

The service designer from the Innovation team is integrated from the start and part of the core team. A Design agency joins at the beginning of the project at the designer initiative. The project is divided into four sequences: the discovery (November 2016 – April 2016: 6 months), the transition (May 2016 – July 2016), the development (July 2016 – October 2016), then the delivery (see Figure 77).

Figure 77 – Leisure sailing project timeline



Two Design jobs are combined on the project and follow one another. Firstly, service designers produce a concept and refine it until it seems relevant, then UX/UI designers take over the manufacturing phase. The two Design teams alternate between needsfinding, ideation, and prototyping. The levels of expertise, however, differ. Design intervention is envisaged as necessary for the project, from the very beginning and throughout the entire duration of the project.

c. How? What is the methodology used by the designers?

The methodology was formalized from the start of the project as a framework set up very precisely to give the team a reference to follow.

We distinguish 6 phases in the first sequence: the formalization and sharing of the Design method (cf. below), the user research, the ideation, the prototyping, the testing, and the delivery of the final prototype. The user research is dedicated to discovering needs and trends, the constitution of an inspiration board, and problematization. The ideation targets possible solutions that respond to the identified problem, mixing collective and individual creativity. Co-creation workshops with the users allow refining the identification of the needs. The ideas produced are grouped and sorted. Then prototypes are built to test the prioritized ideas following an interaction approach (each user test leads to a new prototype, adjusted according to the results of the tests). Tests sometimes require further research to discover a new focus for improvement resulting in new ideas leading to new prototypes. At the end of these iterative cycles of prototyping and testing, the development begins. The development builds on a stabilized prototype accompanied by a use scenario and an implementation scenario. This first sequence lasts six months.

→ **Prerequisite for the Design process**

A training day is organized at the beginning of the project. It allows the project members to discover and test the methodology, providing an overview of the steps to follow and share the same language. During this day, a logbook, i.e., a document synthesizing the method and the tools used in the Design training and planning the significant steps to come, is shared with the team. The rigorous framing of the methodology provided the projects' milestones beforehand.

→ **The governance of the project**

Unlike the traditional project management mode, no steering committee to control the project's progress is imposed. Instead, an informal committee brings together the sponsor (the Head of strategic projects) and the managers of the teams involved, namely the Head of Marketing and the Head of Innovation. This informal committee meets at the project team's request when the latter wishes to share its progress or involve the committee members in decision-making.

Also, the project team has the opportunity to present the progress to the board of Directors either directly through the General Management Committee or via the Head of strategic projects.

→ **Phase 1: Research and Inspiration**

The project's founding elements are formulated in the brief: the community, the social, and solidary economy. The first phase focus is to understand the target audience: boaters.

User-research (December - January)

Two complementary approaches are used for the exploration of the needs. At the first project meeting, the PM (Project Leader) and members from the marketing present quantitative and qualitative surveys they have compiled on boating. The designers on the project (in-house and from the agency) invite the core team to complement these surveys with a field immersion to undertake an ethnographic approach. The company's headquarter offices are less than an hour away from a famous marina offering easy access to the field. The aim is to compare or confirm the learnings resulting from the analysis of the surveys through real-life experience. The designer recounts her astonishment:

> "*The PM* in charge of the project on navigation and boating, she had never been on a boat, nor set foot on a boat, but she was ready from studies to Design a new service."

They are struggling to convince their colleagues, as evidenced by this verbatim:

> "They thought the cold data studies were enough. It took a long time to convince them to go out into the field and look for stories. At first, they didn't want to come. We thought they would not come until the last moment. The night before the field trip, we received an email from the PM confirming their arrival. In the end, they came but without much conviction. They had the feeling that they were wasting a day of their time."

The team worked on an interview guide to exchange with boaters in the field. The questions in the first version produced were relatively closed questions seeking validation of hypotheses formulated from the quantitative study. The designers turned the guide into a semi-directive interview guide, leaving an important place for the interviewees' narrative and surprising discoveries:

> "We had a protocol but no more hypotheses when we moved to the field."

Immersion in the field (December 2016)

In the middle of December, the project team goes to the closest harbor and visits two colleagues who have their boats stationed there and introduce them to the world of leisure sailing. Back at the pier, the project team split into pairs goes around the quays to observe the dock facilities. The designers in each pair intercept people on the docks or in the facilities asking them about their boating experience. Although framed by a protocol and an interview grid, this opportunistic approach unsettles non-designers who are not used to it and stand back. This is what the designer recounts:

> "When the PM saw the designer from the agency intercept a yachtsman coming out of the sanitary facilities to talk, she froze. They said they were surprised that people agreed to meet like that, out of the blue, that they didn't feel assaulted and that they actually have a lot of things to say."

> "With the other designer we were in the front, our marketing colleagues stayed a few steps behind us, as you can see on the photos we took."

The team has collected pictures, interviews, and observation notes from their sea trip experience, the boats, harbor, and facilities tours by the end of the day. This produces a better understanding of the

target and the environment in which the service is due. Key learnings from this field immersion are presented to the Board of Directors.

Inspiration and co-creation workshop (end of January)

A first synthesis of the immersion outlined pain points and opportunities, from which a first co-creation workshop with customers is organized. A sociologist is invited and provides inputs to help the ideation process, such as an analogy between the evolution of the taste for yachting in France and the democratization of winter sports that engender the development of ski resorts.

> "He came for a day's workshop with members to help them get to grips with the theory, and in the afternoon with the members, we made personae on the future of sailing enthusiasts."

A dozen voluntary boat insurance policyholders selected from the customer base participate in this workshop that takes place on a barge on the Seine in the heart of Paris. The workshop objective is not to formulate ideas or solutions but rather to identify latent needs unseen in the interviews:

> "It is the first ideation. The aim is not to formulate ideas but to have a pretext for digging into identified needs. It allowed us to capture the feedback from the members, and then we created paths that resembled their habits."

Each member of the core team working on the project is invited to produce a user journey based on the insights synthesized from this interaction with customers. The team is trained in Inscape, a software similar to Adobe Illustrator but accessible in open source that allows desktop publishing. The designers recommend access to various other tools to help with the visualization everyone is asked to participate in. This is a way to force everyone in the team to reflect on the target needs by questioning, for example, the curve of emotions and the best ways to represent it.

Once again, the approach is both pedagogical and productivity-oriented. On the first visualizations, the non-designers propose solutions instead of needs and draw a journey that translates the users' representations. It does not build on the material collected from the field. A few iterations make it possible to formalize the actual user journeys anchored in the user research insights. The designer expresses that as follows:

> "We wanted them to represent the existing user journey: 'Jean Michel arrives on his boat. Then what problems does he currently encounter ? not the ones you think he encounters, the ones we noticed he encounters…"

Following the user research, the five members of the project team look for inspiration and existing solutions. They identify competitors or potential partners in an Open Innovation strategy:

> "After this journey, we crafted an inspiration board (compiling start-ups names, solutions, pictures) to explore the fields of opportunities. It was difficult for the Marketing people, so we (the Innovation team) largely contributed to compile a library of inspiration."

The designers, more comfortable with the exercise than the other three members, takes the lead once more. They insist on creating a visually good-looking mood board[15] instead of a benchmark.

> "Marketing and the members of the company came up with things that were seen and reviewed."

> "The visual side of a trendy board is instrumental in this exercise. We're trying to make a very visual and beautiful library of inspiration that makes you want to."

→ Phase 2: Ideation

Once the needs defined, the ideation phase begins. This takes place in three stages: first, another workshop with the customers, then the project team synthesis work, and finally, a meeting with the steering committee to sort out and prioritize the concepts.

Cocreation Workshop

A second ideation workshop is organized, this time at the headquarters in Niort. Almost all of the participants from the first workshop come back. Besides, a few yachting enthusiasts working at the headquarters joined. At the end of the day, seven concepts are sketched in an "ideal user journey," illustrating interactions between the stakeholders.

Synthesis and formalization

Then for each concept proposed during the workshop, a poster is designed. The poster model follows the same frame for all: a title, the presentation of the main points of contact and interactions, and a storyboard to illustrate the concept in action.

Prioritization

Posters are displayed and presented by project team members to the steering committee. Three concepts are prioritized. Everyone seemed reassured with this deliverable that shows a clear preview of what the project tends to produce. The designer recalls:

> "From the moment the team followed a tangible idea, everything changed; they started having glitter in their eyes; in other words, they were reassured. The materialization of the concepts on posters was concrete for them. The visual scenarios, along with the oral pitching, created emulation. With that, they were absolutely convinced. Having tangible renderings showed that it was progressing and that it reassured them."

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[15] A mood board is a patchwork of material (mainly images, but also samples of material, quotes, etc.). It is used to convey a general idea or feeling about a product or a service. It helps in defining the storytelling and aligning the project team on the way they envision a product or service.

→ **Phase 3: Prototyping**

The three prioritized concepts are prototyped for testing.

Business Model Workshop

Prototyping begins with a workshop dedicated to the business model generation, with the business model canvas (Osterwalder, 2010) and a partner specialized in developing business models applied to communities. The exercise feels new for the whole team:

> "It was a discovery for everyone, including the Marketing people, which was surprising. I mean, it was surprising to me, Marketing has a perfect business culture on insurance and insurance products but not on service Design. They had been working on insurance products for 15 years but not at all on digital services. They didn't know how it works any more than we did. I wasn't aware of it at the time of the project. I understood it afterward; otherwise, I would have done differently."

Prototypes

The three selected concepts are prototyped. The designers are not the only ones prototyping ideas: each person has to build a prototype.

> "Then we were prototyping each concept, and it was nice to have the Design agency because it allowed us to demonstrate that each person could make a prototype at his or her level through mentoring. It allowed the team's yachting expert to formalize his idea."

The active involvement of novices in the formalization and prototyping activities seems to have reassured them. By being active contributors, they have grasped the interest of the previously collected material and of the time spent collecting it.

> "The tangibilization of ideas has a magical side. That was a great point. After that, it was less complicated to get them into the field for testing."

It seems that the logbook was not enough to reassure the members not used to the Design process and that the prototyping put an end to the anxiety that had built up over the two previous phases.

> "He couldn't let go of his initial idea. It was a cumbersome concept, but it was out of the question to disqualify it. He had been spending his lunch working on it for weeks, so a designer from the Design agency helped him prioritize his PowerPoint and translate it into four key components to submit to users. It was an asset because, in the Innovation team, we wouldn't have been so patient. It was a good attitude to let him express himself. By testing his idea, we could see that it was reserved for an elite, that there were competitors who were already doing the same thing and better, and therefore it was not relevant to our topic."

The plan B developed in secret by the yachting expert

This project method is different from the usual: project team members have to reject any form ideas for solution during the discovery phase. The Design process gives a lot of time and importance to framing the problem and identifying opportunities. After three months, the team narrowed a need to address it but still has no idea as to how to solve it. Even though their adhesion to the approach a priori

at the beginning of the project, they got caught up by the fear of not delivering. Thus, the yachting expert involved in the core team started to work in parallel for months on his own on a Backup plan.

> "He was doing a project in parallel because he didn't have a lot of confidence in the team.
>
> We spent three months on the discovery part; there was much impatience. They thought we were crazy, even though we had written down a logbook to reassure them about what was going on...
>
> He had no confidence at all, so he had been working since December on his own solution. He had even created an app on PowerPoint with links and everything, a monster!"

The solution he worked on and prototyped with the help of the Design agency is dismantled by user tests. This behavior highlights three striking elements: (i) the difficulty of abandoning an idea and let it go to explore other possibilities; (ii) the importance of choices in the Design process and the prioritization of ideas and intentions, (iii) the expert knowledge on yachting got fixated on his initial first idea, regardless of the project teamwork.

→ Phase 4: Testing

The tests are carried out quite easily:

> "We tested everything for free, and we didn't compensate the members; we managed to find people without any promise of compensation."

Several iterations take place, and prototypes are improved after each one. The resulting prototype has the appearance of a finished product (a neat interface). It is attractive and can be mistaken in appearance for a product ready to be marketed:

> "There's a magical side that happens when you materialize something, but you can't stop there, you have to keep prototyping. It's not over with the first prototype. That too was an apprenticeship for our colleagues."

At the end of the tests, the results are presented to the steering committee:

> "We tested each concept with each of them an interview guide, and afterward, we made a synthesis which was presented to our project board. The core team pushed the recommendations, pitched the subjects, and they voted on the concepts they liked the most! This prioritization meeting became a standard (a project review meeting). They became used to it, and this format became standard. That's when we decided to prioritize a concept that became 'accompanied navigation' (the title of the implemented service)."

→ Phase 5: Delivery for development (end of April)

Following the final concept selection, the prototype and findings were delivered to the sponsor and the board of Directors. The team enters the development phase, which requires digital product development:

> "There was this side in 2016: «it's a strategic project, so it's going to pass,» we had a feeling of entitlement that gave a feeling of freedom and facilitated audacity. Afterward, the company structured itself so that everyone felt this freedom."

The prototype validated the principles of the concept and its desirability, but in the manufacturing process, a different kind of Design work is necessarily focused on the interactive user experience and principles. However, this need for digital product expertise was not anticipated. In the project team, no one has the competence to develop the digital product necessary to bring the prototype to life. It is essential to find competent resources internally or externally. Thus, the digital product development is handed to the newly created in-house team, and the Digital Factory develops web interfaces for customers.

Reminder

The project takes place in 2016, in the year of the creation of the Digital Factory. It brings together teams that previously belonged to different divisions in the organization (from the I.T. division and the Marketing department previously within the Operations division). The newly created team is looking for a new project management model when they are asked to develop this project. This reorganization led to job swaps: project managers moved to designer roles without retraining. They started working on projects as designers; the retraining came later.

The core team of the project has trouble entrusting a team under construction with the project's development, and the Digital Factory hesitates to engage in a strategic project in the middle of the team search for the best work organization. However, the project sponsor (the Head of strategic projects) negotiates the handover in order for the project is fully developed in-house.

No senior designer belonged to the team at that time; the designers were people retrained coming from other functions:

"The Digital Factory wasn't like it is today. There weren't any senior Design staff yet. They arrived long afterward. The Design was not yet structured. The designers were one week before the multimedia project manager."

The handover to the Digital Factory

The project is interrupted for several weeks due to summer holidays and resumes while the Innovation team duo is on annual leave. In their absence, the project manager and the new team members in charge of the development agreed upon the following steps and precisely the fact that the designers from the Digital Factory will carry out the Design job development on their own. The contract prepared for the continuation of the collaboration with the Design agency is discarded. The external project manager and the PM take over the methodological lead. The Innovation team is no longer actively involved, the duo is invited during the project presentations to follow-up on the work, but feels frustrated over this sudden interruption:

"If a designer is just there to help digest the concept, then it's a bit of a shame. At that point, user research and ideation can be done directly by Marketing, and we don't need a designer anymore."

Some methodological disagreements stress this frustration with the decisions the UX/UI designers made, for instance, regarding the way the user tests are conducted. The designer from the Innovation team recalls:

> "I thought the tests were a bit fishy, and some of the decisions made were a bit strange. For example, they said that rating after using the service on the platform was not useful, but at the time, it was a standard. They said they decided after testing, but they had had their office colleagues test their prototype, so it wasn't really testing."

She expressed her doubts to the sponsor, who asked the PM to reinstate her to the project as a backup to help the two UX/UI designers from the Digital factory who were in the middle of new user tests preparation at the harbor, i.e., in the actual context. This was a request that emerged during one of the follow-up meetings to go back to where the first user research took place. But the collaboration between the UX/UI designers and the Innovation designer was not easy, and the UX/UI work was called into question. According to her, the protocol and the objective of the test seem incompatible :

> "I found the protocol strange: making test guerrillas on poorly made apps, in poor conditions. They did two or three tests and stopped. It was amateurish. They had a negative image of «we're out for a walk,» which was also the image they were sending back to their colleagues."

The experience is laborious and unpleasant for the designers on both sides. Nonetheless, the platform was built, and the service was successfully launched. The designer explains this accomplishment over a strong PM's leadership throughout the entire development process, focusing on the service prototype as an indisputable reference to be replicated:

> "There were debate and mistrust, fearing the project would be done badly internally, but Marketing was great at leading, even though they constrained the designers' creativity by firm leadership."

The development team confused the prototype made to test the service with the digital product development that requires further significant evolutions.

> " The project manager asked for an exact copy of the manufactured prototype but didn't understand the temporary dimension."

The unyielding leadership from the PM is seen as one of the strengths that led to effective delivery but also felt like a hindrance to the Design work.

d. What do designers actually do?

The approach mixes various research practices (user research and research of ideas) and formalization practices (visualizations and prototyping), which mobilize tools such as personae or user paths. Designers ensure that these practices reconcile empathy, holism, and co-creation (Fayard et al., 2017). This project highlights two forms of co-creation workshops, referred to by the same terminology within the company. The company is accustomed to organizing co-creation workshops to get clients to

contribute to the search for solutions and their prioritization. However, the customers tend to reproduce what already exists rather than imagine new solutions.

> "The ideas that come out are less interesting than the mental journey they followed toward the idea. If we understand why they show a particular solution, we can refine the concept behind it (after the workshop). We don't develop their ideas but single out in their ideas why they wanted this idea to come to life in the first place. Often the ideas produced already exist and are not prospective."

The non-designers in the team are used to organizing such workshops and turning the ideas that emerge into reality. In the Design process, the co-creation workshop is not aimed at producing new ideas but deepening the clients' needs understanding through the ideas they come up with. The tension between identified practices already in place and those proposed by Design bears the same name reinforcing the historical players feeling of déjà-vu.

Through the project, the core team adopted a holistic approach. It involved external service designers and users, and colleagues in charge of the boat insurance to consider the various standpoints and stakeholders' needs. The Design team developed empathy while immersing in the field and meeting with sailors and sailing enthusiasts from the beginning; they kept interacting with the various stakeholders through the co-creation workshops and test sessions to maintain the connection. The involvement of customers is reflected in ethnographic approaches, workshops, user tests throughout the Design process on both Design and manufacturing.

e. With whom designers interact during the project?

If according to the project organization, the PM from the Marketing team guided the team and had the final say in the decisions. In fact, the Innovation team and the external Design agency have had the lead for most of the first sequence, from the moment the Design approach was adopted in the project framing phase. The outer support to the PM found itself somewhat deprived of his role, not being familiar with the Design approach.

The Innovation designer kept in touch with the team in charge of the service delivery and continuous improvement to exchange with them from time to time informally.

In the absence of the service designers, the PM and the members of the marketing team lead the work, they ensure the prototype designed is turned into a genuine digital product that serves as the foundation of the service. The timely interventions of the steering committee are used to make choices almost at each turning point within the sequences. The board of Directors committee has had regular presentation points during the Design process. Now that the service is operational, they follow up on the service performance (through the community's growth and increase of boat covers subscriptions) and prioritize the actions for continuous improvement proposed by the operational team. The latter is different from the initial project team. Table 16 illustrates the leadership changes and the involvement of stakeholders in the various project phases.

Table 16 - Table illustrating the sharing of leadership and the involvement of stakeholders in the different phases

		Service Design work									
		Project								Service delivery	
		November 2015						May 2016	July 2016		
		Project definition	Project Framing	Exploration	Ideation	Prototyping	Test	Development begins	Development	Implementation	Continuous Improvement
Project team	Marketing										
	External project manager										
	Innovation: in-house Design										
	Service Design agency										
	External Experts										
	Digital Factory: in-house Design										
	Customers										
Top Management	Steering committee										
	Top management committee										

Color Key :

	Leadership
	Active contribution
	One-off contribution
	Follow-up

f. Output and Outcome

The project has resulted in the implementation of a new service as planned. Furthermore, it resulted in ideas for new services and, most and foremost, in a new approach for innovation.

→ Direct and indirect benefits from the service

The service is free of charge. It unites a community of boaters of various levels of expertise: novices, amateurs, and professionals, passionate or curious. A platform has been set up to bring together members of this community. The platform is a responsive website (i.e., it is accessible from a computer, a tablet, or a smartphone). Using analogies, the service could be described as a mix of three types of existing services:

- a transposition of car-sharing or car rental platforms between individuals applied to the world of yachting,
- a training platform that provides access to pedagogical content and discussion spaces (forum type)
- tourist platforms offering information on the places to visit and proposals for outings and activities.

The press release at the service's launch states that the service *is "a reflection of MAIF's DNA and its strategic plan: education, prevention, and engagement around the collaborative economy."* "Education" echoes MAIF's historical community, prevention is at its core, and commitment to the collaborative economy is a commitment to societal change observed and investigated by the firm. In conjunction with this service, the platform developed offers information on MAIF boat insurance cover. This product has been modified to consider this new use and other needs identified during the design of the service.

The platform redirects to a public Facebook group, allowing community members "neighbors of pontoons" to exchange content (photos, messages, etc.) and information.

This service is presented at trade shows and general public events dedicated to boating, enabling the company to be present and seen with an attractive offer that differentiates it from its competitors' traditional insurance products.

A specific team has been created to manage this service, distribution, delivery, and continuous improvement. To do this, employees have been trained by in-house enthusiasts and some members of the project team. A community of in-house experts grew, bringing together employees who are trained and more competent than before to distribute and manage the boat insurance product beyond the free service management. This service is positioned in the company's strategic roadmap as contributing to two performance levers: a renewed offer taking into account societal evolutions and the conquest of new customers/policyholders.

The service gets together a community of 2600 boaters (in 2019), which corresponds to 0.07% of the boating community in France (according to figures at the launch in 2017). An increase in subscriptions to the boat insurance product has been noticed.

Although satisfied with the work carried out on the project, the sponsor and the general management committee seem disappointed by a lack of short-term profitability compared to the social and financial investments necessary for the development and the service maintenance.

> "It was a key learning, to make it clear, from the outset that the creation of communities does not work to achieve short-term profitability."

> "Furthermore, it required staffing (time investment) once launched, the service couldn't live on its own, it costs, and we weren't structured for that at all."

The service development continued and was prioritized in the roadmaps in 2017, 2018, and 2019. The Innovation designer has maintained a free link with the team in charge of the service

management to help with continuous improvement. She has no formal mandate though, her ability to do so and the impact of the support are therefore minimal.

> "I go to see them from time to time to monitor improvement, to challenge them, «how do you monitor? What data do you collect for improvement?"

She wonders about the lack of designers to help the service delivery and the place they could have in the continuous improvement process. Nothing is planned to date on this subject.
While the service business model is not economically profitable, the service has enabled new customer acquisition and increase the brand's legitimacy among yachters.

→ Organizational changes

The project resulted in the firm favoring an open Innovation strategy to encourage the exploration of new territories through the acquisition of already established start-ups rather than exploration from scratch by internal teams. This is the case, for example, of another strategic project aimed at providing financial support to clients, for which a partnership with a start-up was preferred.

Following this project, the Marketing department decided to redesign the boat insurance product by leveraging issues revealed by the user research:

> "After this project, they reviewed the Nautis contract, which hadn't been reviewed since the 90s, and what was great was that they took over the methodology used for the navigation project, and in particular the material produced by the user research, and they adapted the contract guarantees accordingly!"

While investigating the field, the project team noticed that many passionate owners were used to repair their boats instead of becoming professionals. They also noticed that it was not uncommon to have plural owners for one boat. This led to creating specific guarantees on contracts to allow the repair of ships by their owners and allow the co-ownership of a ship.

> "Before, MAIF refused to insure these boats (fully rebuilt by the owner) and only insured new boats, which is a little contradictory with its values."

It also emphasizes a process of testing under actual conditions before implementing the planned changes, which is a step forward.

> "They created MVPs that weren't immediately plugged into the Information System, which was great."

The non-designers reused the methodology on other projects that followed.
It took time to convince the team members of the value of the approach, but they became later Design ambassadors within the company :

> "There was a before and after for the teams on this project. She was resistant to the beginning and ambassador afterward."

The project contributors from the Marketing department became promoters of the approach and methodology formalized in the logbook. However, they replicate the method without reflecting on the context and project specificities. Reflexivity on the Design approach is low, and Design seems to be considered a process that is easy to replicate.

In parallel with the «Leisure Sailing» project, a second strategic project is launched targeting "sporting communities." The designer is paired with another Innovation team project manager. The pair is co-leading this new strategic project. Based on the analysis of the team "Leisure Sailing" project experience, they adapt their way of working:

> "We regularly reviewed what had worked and the problems on the "Leisure Sailing" project to prepare the "sport" project as well as possible."

The project manager has an excellent knowledge of the company and knows about various alternative or complementary innovation methods to Design, such as growth hacking or lean management. Through the systematic collaboration between a designer and a project manager, both develop skills, a common language, and shared references that allow them to decide on the best way to carry out projects. There is no hierarchy between them; they share the leadership.

> "The profiles of the project managers are a bit like Product Owners. They can lead projects by choosing a good methodology and speaking Design without necessarily mastering the profession. They are benchmarks to say which method to use in innovation outside of Design (lean, growth hacking, etc.). We have complementary skills. They know the company very well and have joined Innovation because they have a good mindset and are proactive. In pairs, the lead is common. There is no hierarchy between the designer and the project manager."

As a result of the first experience, Innovation has changed its positioning and service offering in projects. The team now recommends external service providers to support the Marketing teams' projects.

> "When Marketing calls us on a project today, we refer them to an external Design agency. We've developed a roadmap for Innovation that focuses our efforts on Designing diversification products in incubation mode. Marketing is on insurance products and adjacent services (such as on-demand insurance); they work on the insurance business. Furthermore, while the «universe of needs" organizes their roadmap, product managers' objectives rely on the performance per insurance products."

> "Today, Innovation is developing programs dedicated to overcoming this feeling of being in shadow, on-demand."

The Innovation team has built its roadmap based on priorities validated by the board of Directors. Those are prospective-oriented, for example: work on the future of mobility, voice interfaces, IoT. Therefore, the team focuses on exploration projects that mobilize other in-house functions, including the marketing teams, but the PM is from the Innovation team. This change in the positioning of the Innovation team is explained by a desire to strike a balance between production quality objectives requiring an expert team and the need to train and introduce other novice teams to Design.

> "The coaching posture rather than Design is tiring and frustrating. This pivot is also due to the fact that we had a bit of a thankless role: 'We're doing a project, come and help us deliver it.' To clarify things, we popularize things. We put in step points, etc., the process is slower, more burdensome; we need refreshing projects and where we can move forward without having to convince people."

Finally, one last resulting change is the early integration of digital product experts (UX or UI designers). The designer says:

> "The integration of the Digital Factory is done from the start, without asking the opinion of the manager who says, «no, we have to be on the execution,» the designers, despite the load, appreciate being integrated very early and to follow or even participate."

The UX/UI designers benefitted from the influence of senior leadership in the Design team and developed their expertise practicing. By the end of the year 2016, the Digital Factory was fully structured and had onboarded senior designers:

> "It showed internally that this (the Design process) required a bit of senior expertise. After that, the Digital Factory started restructuring and hired two Lead designers, including a senior UX designer, a senior UI designer, and one Product Owner, so it was structured, and it evolved well."

At the end of this project, the members of the marketing teams swapped jobs. A team was set up to manage the service created, the three core team members from the Marketing teams joined it, as well as an employee who participated in the second co-creation workshop. Two out of the three participants in the project from the Marketing teams have had access to retraining programs. The yachting expert carried out a training mission to upskill managers and advisers dealing with the boat insurance product. The training courses provided by the yachting expert targeted front-line teams geographically close to the sea and Leisure harbors, in other words, locations in which customers were likely to ask about products and services related to the world of Leisure Sailing. Dedicated expertise was thus developed internally at MAIF.

> "They trained people for the yachting service in the network at strategic points (Brest, Hendaye, etc.). When people called to say, «I want to get an insurance cover for my Muscadet,» the managers knew it was a boat. The customer no longer thought, «OK, MAIF doesn't know anything about it,» which is frustrating when you're passionate about it. They gained points in the acquisition of new customers. They also went boating shows."

B. An extreme case of Design integration in experience project: A new claim management model

We have decided to analyze this project following a theoretical sampling (Yin, 2003): it is emblematic of the research question, which is about the challenges encountered by a firm in building a Design capability. It is an "extreme case" (Eisenhardt, 1989), i.e., the project was terminated due to difficulties of Design integration within the project. After a co-creation workshop involving designers from the Experience team and stakeholders from different functions within the firm, the sponsor received complaints and then decided to interrupt the project to defuse the rising tensions. Therefore, the project is particularly relevant to explore the challenges encountered in building a Design capability because co-creation workshops involving all the stakeholders are at the heart of a Design approach.

The project's objective is to define a new insurance claim management system, which is central in the core business of an insurance company. This is known as a challenging project, and there were several previous attempts. The project team comprises three experts from the Service Performance department within the Operations division at the headquarter. The project manager (one of the three experts) reports to the project sponsor, his manager, one level below the Operations division (5000+ persons).
Based on the analysis of the regular satisfaction survey (1600 answers) realized by the firm, the project team identified the problems frequently encountered and generated nine ideas to address them. This identification did not include primary data such as interactions with customers and did not involve designers. When they presented the ideas, the project sponsor asked the project manager (PM) to integrate designers to make ideas tangible and collect feedback. The PM asked the Design team to contribute to a "co-creation workshop." The project sponsor knows about the existence of the in-house Design team and is aware of the potential benefits of Design thinking in transforming a process involving users, as he labeled it.
The project has been stopped after this workshop involving members from different departments of the Operations division that generated intense debate. The Design Team has been engaged only in the preparation and during this workshop. We analyze this intervention.

1. Why have designers been called in the project?

The PM reached the Design team with the following email :

> "In agreement with (the project sponsor), we thought it was necessary to include a designer in this project. It would consist of participating in a workshop (...) in which a multidisciplinary team will be in charge of devising a new management process. We need your input in the consolidation of the work, mainly on the synthesis document. Do you have someone to assign to this project?"

The PM confesses that he followed his manager request without really knowing why he was reaching to the Design team and how designers would be of any help:

> "I was told to get you on board, but honestly, I don't get what you do and what you're here for."

The Design manager agreed to join the project because he has seen it as a dual opportunity; on the one hand, to demonstrate the use of Design in a subject at the core of the business, and on the other, to capitalize on lessons learned from a previous related project. Designers were thrilled to work with the Operations Management department on a process at the heart of the firm business, as this quote from an interview with one of the designers confirms it:

> "When you work for an insurance company; if there's one topic you have to work on, it would be this one ."

> "I think the subject is great, and it's a great opportunity to follow up on our work (name of the previous work on the subject). We already have a lot of material. So, we clearly have the means to prepare good inputs for the workshop."

The request evolved a little in the weeks preceding the workshop. The Design manager received an email with a new brief "to *illustrate* the ideas already generated by the project team." The participation of the designers in the workshop was not considered *"necessary"* by the PM anymore; he wrote: "we leave it to you to decide if you want to be present in the workshop."

The PM has no previous experience working with the Design team and was not aware of what Design thinking is. He mainly retained the ability of designers to formalize and visualize things. He limited his request to this skill and asked for two concrete deliverables: a visualization of the ideas generated previously to collect feedback during the workshop and the synthesis of the workshop results. The workshop was seen by the PM as a way to onboard key stakeholders and reinforce the ideas. This is confirmed by the following excerpt from the framing document given to the designers:

> "2 different use cases will be described. 2 sub-groups will be set up before the session. Each sub-group will work on one of the two use cases. The participants are therefore asked to review each course taking into account the ideas that would have been presented beforehand. I draw your attention to the fact that this does not mean that everything can be called into question..."

The Design team was not involved in the choice of the agenda or the facilitation of the workshop. Despite their late involvement in the project (after the ideas generation) and on a reduced scope (visualization), the designers considered it an opportunity to show the outputs and outcomes of Design and contribute progressively to its diffusion within the firm. In other projects, they have often succeeded in transforming a punctual and isolated intervention into a bigger one with a more significant impact. They were used to this pragmatic and opportunistic way of diffusing the approach within projects. They consider these transformations as a way to measure their success in building the Design awareness and thus the Design capability of the firm. The designers were aware of the expectations of the PM as it is noticeable in this verbatim from the Design team manager:

> "By coming to see us, he seeks to put his ideas forward, find reinforcements to justify his point of view and validate his approach."

2. When have the designers been involved in the project?

When the PM reached the Design manager, the three experts worked on the project for months. They have generated nine ideas to address the pain points identified in the current service. When presented with the ideas, the board found them too conceptual and wanted to assess both the degree of novelty of these ideas and their feasibility. That is when the PM decided to invite various stakeholders into a co-creation workshop aimed at specifying the ideas generated.

The Design team has not participated in the needs finding (the user research that resulted in identifying the pain points mentioned) or in the ideation phase. Below are verbatim from the designers about the moment and scope of their involvement :

> "We're here (in the project) as a guarantee of user-centricity, but we don't have a full picture of the user material that has been collected before or will be collected after the workshop. We start with an a priori when confronted with the convictions of the project manager that sells us "the perfect" use cases."

> "We need to get in a project early on and make sure it deals with a real need, not just a topic that someone sees as interesting."

> "We have no visibility on the upstream and the origin of the proposals; we work on bits of a project that we have not developed ourselves."

> "Coming in at a particular stage and leaving right after, it doesn't work; it's disappointing."

After the workshop, the PM acknowledges that actors from outside the project team (including the designers) could have been involved earlier at the debriefing meeting after the workshop.

3. How? What is the methodology used by the designers?

The pain points were identified without the designers' involvement based on survey material (secondary declarative data) and not thorough user research, including primary data from customers or front-line employees. The ideas generated by the three experts to solve these pain points were based partly on a benchmark of the best practices from direct competitors in the sector without involving any other player. Some verbatim show strong convictions of the team about their ideas:

> "It is clear through the surveys that…" or "we have verbatim to justify all this…". The project manager was, however, aware of the risk of backlash. «For me, there are four main ideas to be implemented for the future, but we must be careful not to go too far in implementing these ideas not to get stuck."

The PM has asked designers to illustrate the ideas generated in two user journeys based on two use cases carefully selected by the project team. They provided the designers with a text and a storyboard that described the service and the ideas and asked them to stay close to this material. The user journey was

not an adapted tool. A service blueprint should have been the adapted tool because it highlights the three critical perspectives of service: the process (what it should be), the perspective of front-line employees in interaction with the customer (what it is considering the adaptations done to handle real-life situations and specificities) and the customers perspective (what is perceived). Nevertheless, by being focused on the process (without the involvement of front-line employees and customers), the material provided did not include the required information, such as, for example, the emotional dimensions associated with each step of the service. Hence, according to the designers, neither the material nor the tool (user journey) was adapted. The PM did not accept the modifications suggested by the designers regarding the device.

As stated by the PM to the participants, the specifications or statement of work of the workshop is to give feedback on the ideas generated to evaluate their degree of novelty, their feasibility, and therefore the field of possibilities for the future. This should be eased by the fact that ideas are presented in a natural context (use case). The workshop was facilitated by an internal HR coach trained in complex problem solving who do not belong to the Design team. The PM did not choose the facilitator. This service comes automatically when someone books a creativity room in the innovation facility of the firm. Therefore, the facilitator deploys a generic and standard approach, whatever the workshop is about. The facilitator did not provide any tools or techniques to facilitate feedback on the ideas and avoid fixation effects. The three experts that generated the ideas were present and acted as well as facilitators in the workshop.

Designers were not involved in the facilitation either in the identification of the participants to the workshop.

> "Unlike members of the team, designers are neutral. They can take on different hats, choose whom to invite to the workshop, disregarding power plays, and avoiding hierarchical relations within the same group because it prevents people from speaking out."

> "(...) we need to have the ability to reshape the team if we need to, at least the list of participants in the co-creation workshop."

4. What do designers actually do?

The designers' main job was to visualize (i) the ideas before the workshop and (ii) the synthesis of the results afterward. The visualization was based on scripts produced by experts from the project team. They were very specific on the technical aspects of the process considered. They describe the service from the customer's perspective but based on the service provider process forgetting about the customer and the front-line employees' actual standpoint. Therefore, the deliverable requested by the project team did not provide any added value compared to the original scripts. It was only a visualization of a process without any human and emotional dimension that usually generates empathy and is at the heart of the Design approach.

The user journeys presented the ideas and the pain points they intend to address. When they discovered the user journeys during the workshop, some participants challenged the underlying pain points. This resulted in intense debates highlighting that the reality differs from the story told. When they experienced this conflict, the two designers present in the workshop suggested reframing the user journey. The project team rejected their approach.

The ability to adjust the frame is one of the critical aspects one of the designers underlined:

> "(...) we need to have the ability to question and for them to be ready to hear it."

5. With whom designers interact during the project?

The workshop was composed of a multidisciplinary team gathering 19 people, mainly from the headquarter operations management (10 out of 19). It included: 1 person in charge of the performance of the claim activity, one person in charge of claim management supervision, three persons in charge of claims regarding specific insurance products, two operational team managers, two project managers working on the claim management process, three people in the Operation Management department from partnering structures, three claim operators, four people coming from other departments including, Legal work, Marketing, and Quality

There were only three front-line employees (claim operators) with experience in customer interaction, much less than experts on the process. The PM was not convinced of their added value. Furthermore, these are scarce resources arduous to obtain. Indeed, asking front-line employees to leave their operational job to take part in a workshop will reduce the performance of the operational team in terms of customers number processed.

The PM did not agree to involve customers in the workshop because the objective was to specify the ideas and appreciate their novelty and feasibility. This was his answer when asked about going to the field (front-line employee office spaces) for the workshop or asking some customers to be recruited as participants:

> "Going out in the field, that's not possible! That would require asking permission from the people in charge who aren't convinced, and now the timing is not right (….referring to operations teams overload), then the project would be dead. There's no need to go into the field because who can be unconvinced by our idea since they are common sense? (…) he cites examples of some non-sense in the current process that the ideas would enable us to change) Besides, we don't want our ideas to be questioned. That would mean going backward in the project."

The workshop involved technical experts who designed the actual process and the experts generating the ideas; therefore, they were not neutral.

The workshop lasted one day. It included two sequences animated by a brainstorming technique based on the visualization delivered by the designers. Each sequence consisted of two steps: first, analyzing the user-journey with the ideas to understand the pain points they address and then searching for ways

to implement them after evaluating their novelty. It was an ideation workshop about how to implement the ideas. Considering that the workshop involved new players (front-line employees and other experts from other Operations Management departments), they discovered the ideas and problems. They challenged the plausibility of the user journey about the actual process. Sometimes, discussions turned into a training course for front line employees by the experts when the formers outlined that the description of the problem does not match the reality, as shown by this verbatim from the recording of the sequence :

> "when faced with this situation, what do we have to say? (...) we can do that or (...) we have to (...) we already do that (...) we can do that in tool X (...)"

> "In the case presented, the accident occurs on a Saturday... but on Saturday the call center is unavailable ... so the customer call is immediately redirected to the emergency service center in charge of filing the accident while waiting for Monday ... so in this case, everything goes as planned."

The ideas became secondary as highlighted in the verbatim: "Let's write this idea down in a little corner ….if we can't implement it."

The absence of tools to stimulate the participants' creativity regarding idea implementation resulted in players looking for ideas that fit in the current process rather than searching for creative alternatives to turn them into reality.

6. Output and Outcome

At the end of the workshop, the Design team delivered the user journeys updated with the modifications of the ideas resulting from the feedback. The update required only one designer for half a day, whereas the first user journeys required three designers for three days: the ideas were marginally specified, and the feedback was very weak.

The project manager affirmed during the debriefing meeting that nothing new emerged from the workshop:

> "There were quite a few things that appeared, interesting things, but for me, they were already initiated beforehand anyway."

However, he points out that one of the workshop's benefits is to make changes tangible and real. This enables and stimulates the participants' reactions, which is, according to him, a positive outcome. The debate involving the members involved in the workshop was intense. Accordingly, the project support decided to suspend the project until further notice to prevent any conflict: "We stopped the project because of the workshop. We do not want to make any enemies within our department."

According to the PM, participants were afraid of a profound redesign of the service's organization, affecting their current scope.

> "Everything was fine as long as the project kept theoretical, but in the course of the workshop, we tied it to people's daily work; they envisioned the potential change and immediately fought back."

Employees complained to their managers (who did not participate in the workshop) about the threat that the solutions considered represent their current process.

For the designers, the workshop has generated much frustration. They could not apply their methods to the projects and neither show what Design can bring. It was a missed opportunity to show the potential of the Design approach in such a project. The impact was pessimistic regarding the image and the involvement of designers in the project.

> "It's clear now that at the beginning of the project, we didn't agree on the basics; he (the project manager) wanted to prove that it worked; we want to test if it worked."

Very similar ideas emerged from the workshop and were consistent with the ideas that the project team had outlined before the workshop, as this quote from a participant underlines:

> "Our work turns out to be very coherent; all the groups were very creative and had the same ideas."

No specific measurement was articulated to assess the project's impact on the overall customer experience and delivered service. This questions the workshop's utility and the time spent on the project team and the designers.

Chapter Five

This chapter offers a model for building and developing a Design capability and how it can be a lever for transforming an organization: its activities and strategy. We start by presenting the capability-building model we inductively built; then, we display it at several levels in the firm. Based on the model in use, we suggest seven propositions regarding in-house Design capabilities understanding and building through the various components. Eventually, these results are discussed in light of existing literature regarding Design and Strategic Management. We present insights from the application of our design capability building model at the organizational level on four external companies. At last, we reflect on the limits of this investigation and the further research it opens.

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I. A capability-building model

A. Presentation of the model for Design capabilities building at MAIF

B. Use of the model on Design capabilities building at MAIF

II. Defining In-house Design capability: A set of (dynamic) capabilities for service innovation

A. In house Design capability is a set of Dynamic Capabilities

B. Design without designers?

C. Discussion

III. The Design capability-building model: an assessment tool

A. Four companies amid Design-capability building

B. Results from the applications of the in-house Design capabilities model

IV. Managerial Implications, Limits, and further research

A. Managerial Implications of the dissertation

B. Limitations

C. Further Research

I. A capability-building model

Our objective in this research is to explore how a Design capability develops (including Design, Design Thinking, and Design management) at various levels in a firm (organization, team, project) that is not used to it. None of the existing frameworks in the literature provided such a panoptic view. Many are focused either on Design, Design thinking, or Design management and only a single analysis level. For instance, at the organization level, one is focused on the Design integration level (the Design ladder), another on Design maturity (Storvang et al., 2015), some provide insights on the value of Design thinking (Micheli et al., 2015), on Design terminology (Lockwood, 2009; Borja de Mozota, 2019), or evaluation criteria for Design management effectiveness assessment (Cooper et al., 2011; Lewis et al., 2009). Therefore, based on the case of MAIF, we built the model displayed in the following.

A. Presentation of the model for Design capabilities building at MAIF

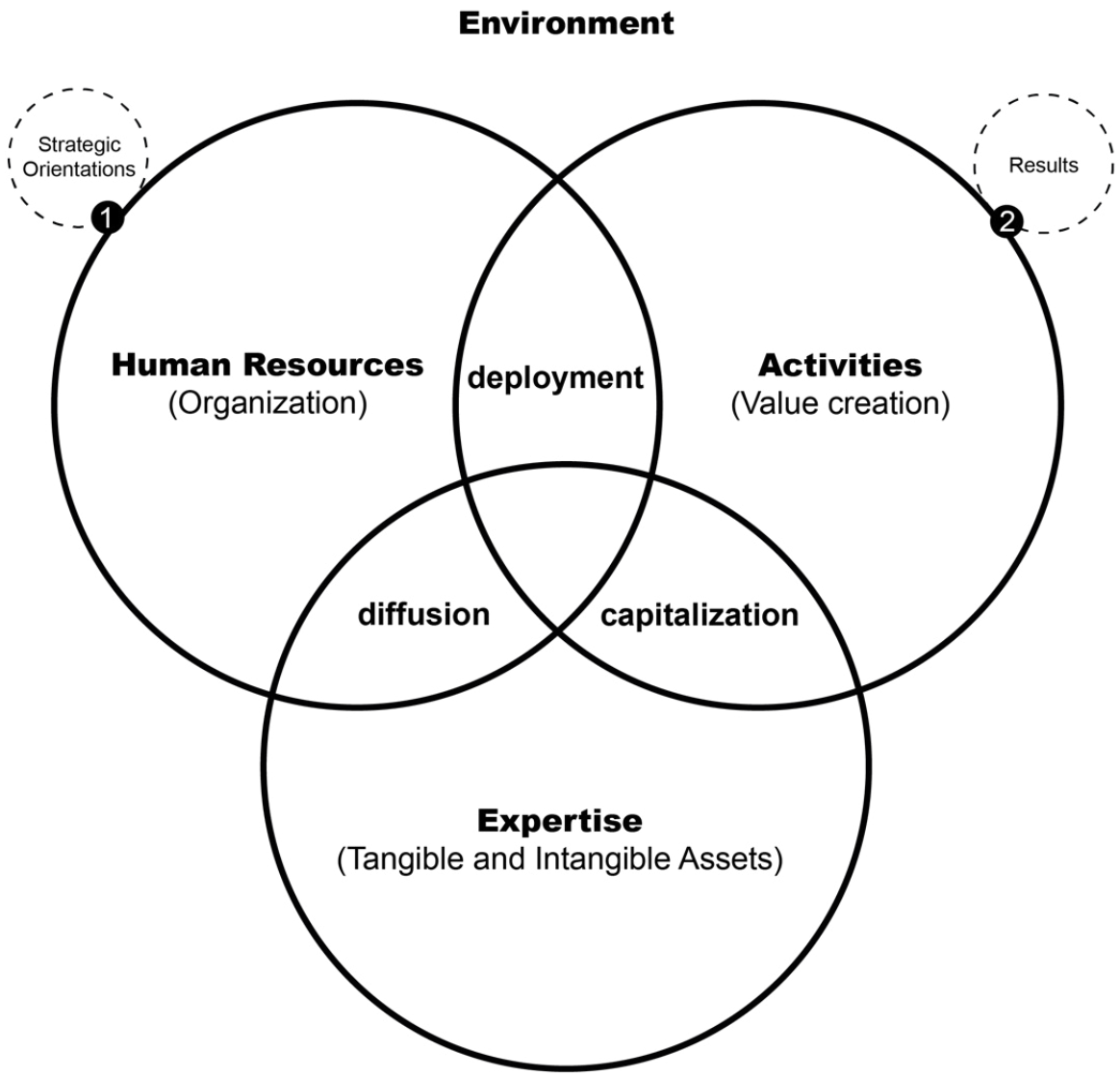
The model we propose comprises three core components (Resources, Activities, Expertise) interrelated by three mechanisms (Deployment, Capitalization, Diffusion).

The model emerged from a Venn diagram. It is made of three overlapping circles representing the components: (i) the first one for the (Human) Resources within the organization that are concerned with Design; in other words, it includes people with cognizance of Design that goes from bare (i.e., awareness) to extended (i.e., expertise), especially Design practitioners, Design partners, and sponsors. (ii) The second one stands for Value Creation through Design Activities, for instance, the activities that happen within New Product or Service Development projects, or continuous improvement, or process optimization. (iii) The last one refers to Expertise; in other words, the Design assets such as tools and methods developed within the organization. The Expertise relates to Knowledge Management and Organizational knowledge (Argyris & Schön, 1979; Charue-Duboc, 2005).

The overlaps between the circles define the mechanisms that link the components. The human resources are deployed within the activities (the projects); (2) the knowledge produced within the activities are capitalized, leading to expertise; and finally (3) the organization's Design Expertise is diffused among the human resources. The deployment includes project management. The capitalization consists of reusing and adapting existing tools to the context and their use in creative ways referring to learning through practice, i.e., the reflective theory (Argyris & Schön, 1979) and its formalization for memorization (Charue-Duboc, 2005). Besides, it. The diffusion is about sharing and teaching Design knowledge and skills (Paraponaris & Simoni, 2006). Acquiring human resources in Design is triggered by a strategic orientation. The activities lead to results that have an impact.

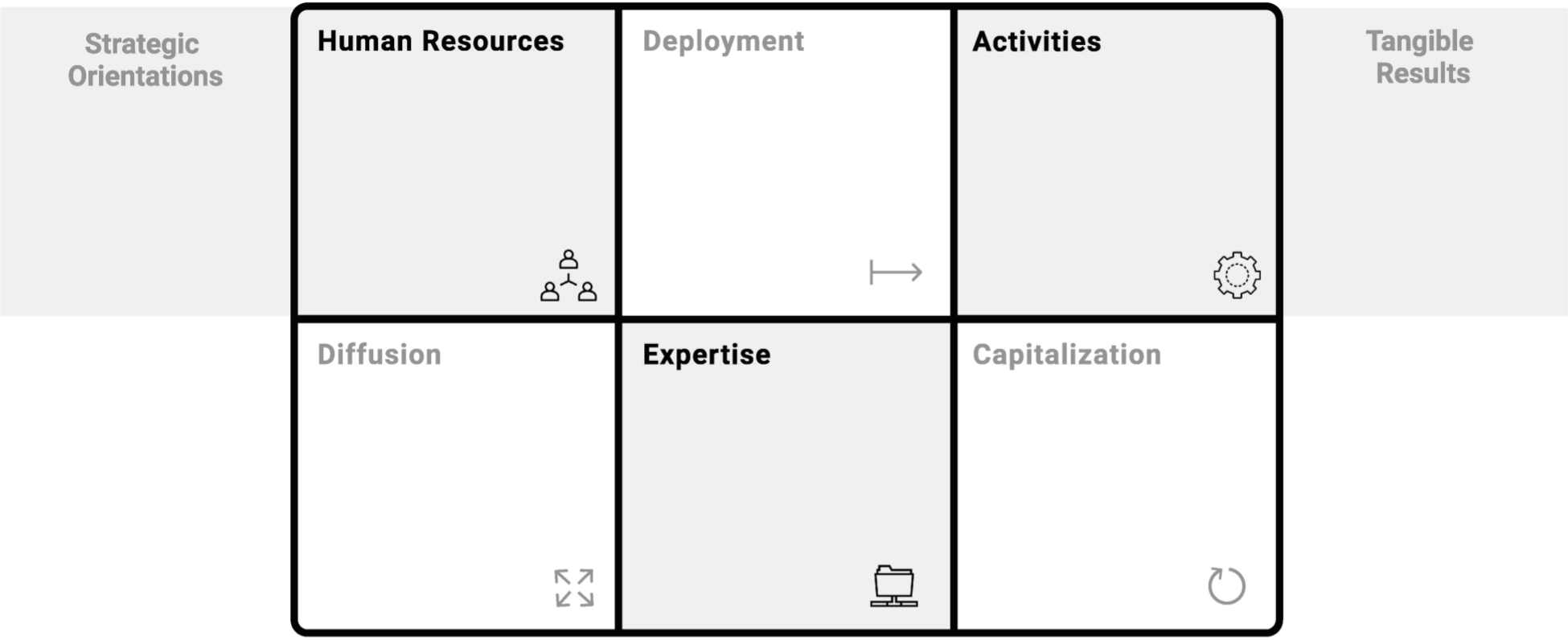
We suggest this model based on the analysis of the Design capability building that we have witnessed at the three levels of the firm and that we have displayed in the previous chapter with the data (Chapter 4).

Figure 78 - The modeling of capability building



In order to increase this model usability as an analytical tool, we morphed the circles of this Venn diagram into a simple 6-boxes grid as follows (see Figure 79 next page).

Figure 79 - The capability building model



..... **Capability-Building** at

_____use of the model at the _____level

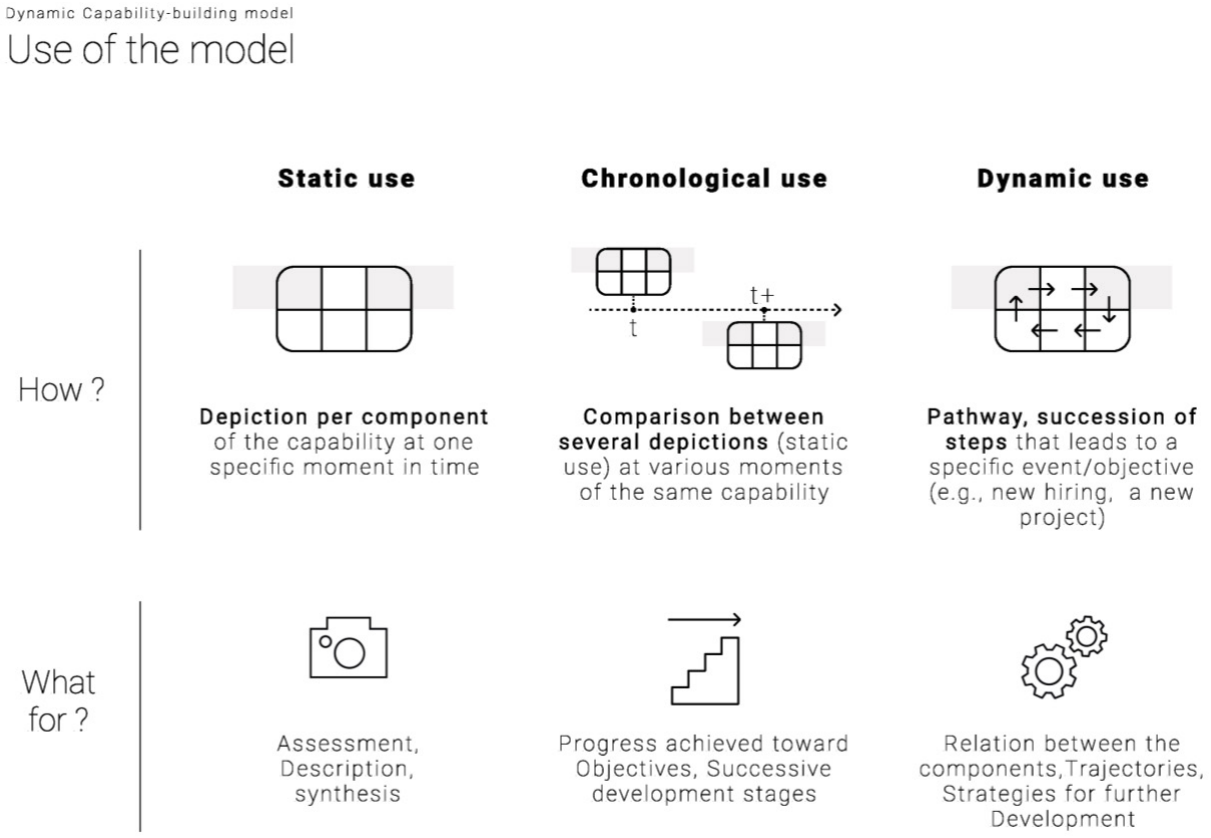
by

in

B. Use of the model on Design capabilities building at MAIF

The model can be used in a static, chronological, or dynamic, reaching different objectives. The static way consists of depicting each block, giving a synthetical view of how it manifests in the organization. It enables an assessment. The Chronological way corresponds to the comparison of several static uses at various successive moments in time. The aim is to demonstrate the progress of Design capability building, evidencing subsequent development stages. Finally, the Dynamic way shows the succession steps of a pathway to building Design capability showing the relation between the building blocks and demonstrating how their development is interrelated. The following figure (Figure 80) illustrates the various use of the model:

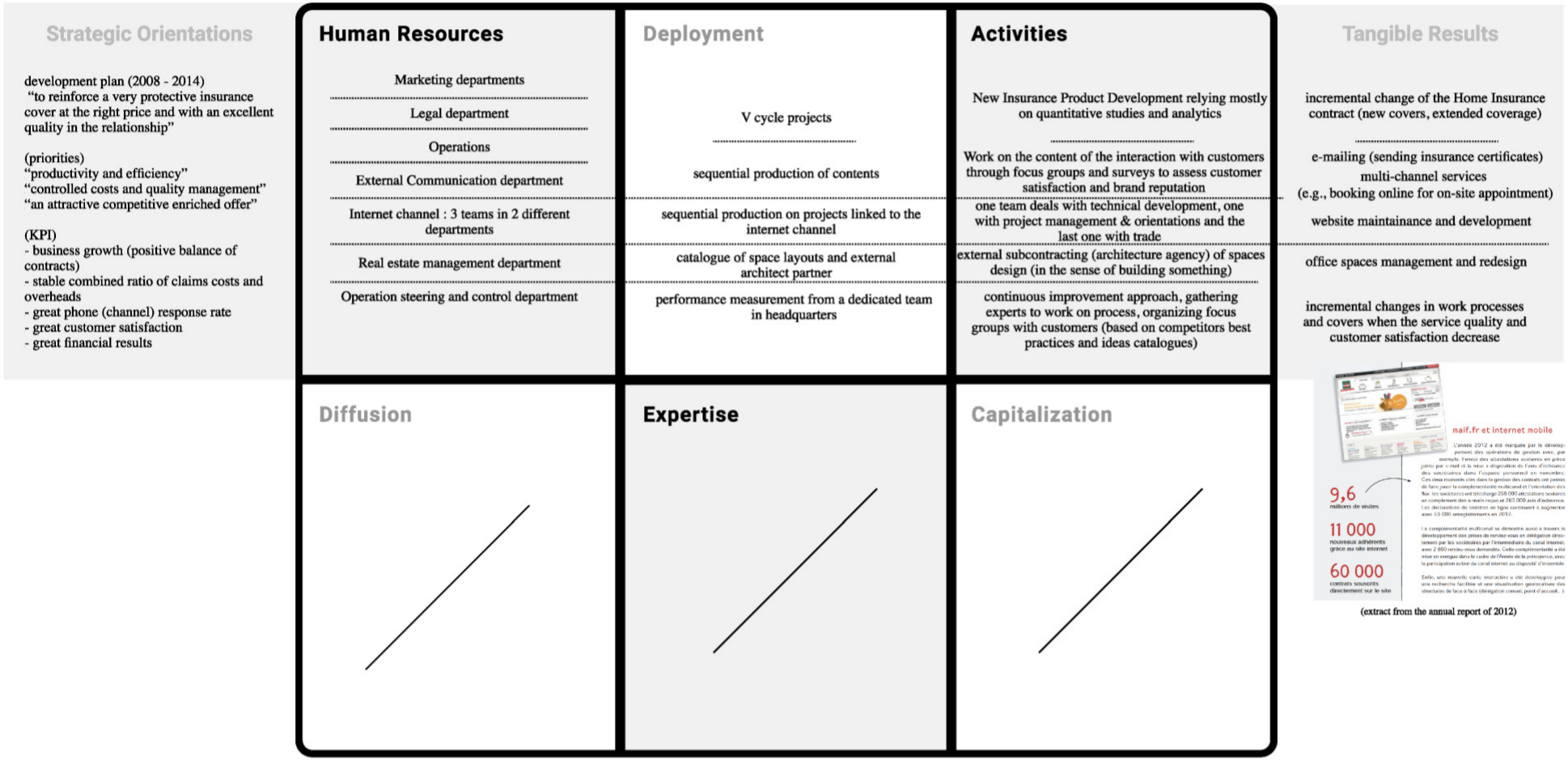
Figure 80 - Use of the Design capability-building model



1. Static model: Before and after Design integration at MAIF

The model provides a picture of the Design integration at one point in time. Therefore, it enables a comparison between two points in time. In the following, we will show it at the organizational level before Design integration in 2012 (Figure 81) and the current state in Late-2020 (Figure 82), which corresponds to our research scope. We comment on these figures below.

Figure 81 - Before Design integration



(extract from the annual report of 2012)

Design Capability-Building *at* MAIF

Static use of the model at the organizational level

Before Design	2012

Figure 82 - After Design integration

Strategic Orientations

strategic plans I & II
"singularity & pivot" - "diversification"

(four pillars)
(a) solid financial results
(Net balance of customers + business growth + stable combined ratio of claims costs and overheads)
(b) design & experience at the core of the strategic plan for customer satisfaction
(gap with the market in satisfaction survey + churn rate less than or equal to the forecast + response rate on all channels + (new) Net Promoter Score + (new) Customer Effort Score)
(c) employee satisfaction
(low absenteeism rate + happiness at work survey participation rate)
(d) contribution to the common good
(Find the right indicator by 2022)

Human Resources

Design teams	Digital Department	Innovation team Digital Factory team Experience team I.T. design team
Design key partners		Marketing dpt Legal dpt Communication dpt Real estate management dpt Operation steering and control dpt
Design thinking team		Customer Relationship Laboratory (Operation department)

Deployment

Projects led by design teams (mainly based on agile project management progressively implemented in the organization)

Participation of design teams (designers) to projects as participant or methodological coach, that impacts the project management model

9-month experimentation: a dozen of front-line employees work together on continuous improvement experimentations in a lab space

Activities

Full project with a design approach (involving needsfinding, ideation, co-creation, prototyping, testing)

depending on brief negociated with the project leaders and the leeway regarding the method (designers help with the methodology, the workshop facilitation, for the whole project or just a step such as testing a concept, conducting user research or imagining new solutions

Design thinking process without designers, stops at prototyping

Tangible Results (examples)

New touchpoints implementation (e.g., vocal interfaces or visio)
Website & App maintainance and new online services
Visitors experience in headquarters redesign
Employees' Digital interfaces (tools)

New Insurance Product Development
Legal design
Imagining alternatives to customers goodies
Office space redesign
Designing an omnichannel experience

Continuous improvement changes

Diffusion

- blog on design practice
- internal and external events
- introductory workshops

Expertise

(Organization level)
- design system (experience signature)
- shared tools : strategic radars

(Design organization level)
- community of practice (online space and documents)
- shared processes and resources repository (trello) for new employee integration

(Design team level)
- shared toolbox

Capitalization

(Design organization level)
- workshops and keynotes for designers
- tools presentations

(Digital department level)
- Digital demos (event gathering the teams from the department, each team presents the ongoing projects and a focus on one project)

(Project team level)
- Projects Demo (Meeting where the project progress are discussed)

Design Capability-Building *at* MAIF

Static use of the model at the organizational level

Since Design	2020

a. Before Design integration: 2012

Before Design integration, the firm had teams working on new product development and improving or maintaining existing products, services, and processes.

→ **Strategic orientation**

From 2008, the starting point of our study, the strategic orientations are defined by the "development plan" focused on reinforcing the existing instead of building something new. They covered "the productivity and efficiency search," "controlled costs and quality management," and "an attractive, competitive enriched offer." The main KPIs to target were the business growth, a stable ratio of claims costs and overheads, great phone response rate (channel of distribution and service delivery), excellent customer satisfaction, and financial results. Those KPIs stress the Operational priority over innovation.

→ **Human Resources**

We underline nine departments that were used to engage in New Product Development or the continuous improvement of existing products and processes: The Marketing department, the Legal Department, the Communication department, two departments from the Operations division, the three teams working on the internet channel that merged later into the Digital Factory and the Real Estate Management department.

→ **Deployment**

Each team worked on New Product Development projects framed by the Project Management Programs or on continuous improvement sequentially; in other words, they followed a V-cycle development or a stage-gate process. They involve external partners. One department from the Operations division is in charge of monitoring the performance.

→ **Activities**

We identified five foci of innovation activities : (1) the focus on New Product Development, (2) on Interactions with customers (especially information to customers), (3) on the Internet channel, (4) on Office spaces design, and (5) on the continuous improvement of the service. Teams working on New Product Development rely primarily on quantitative studies and analytics. Customer interaction projects are based on focus groups or surveys assessing customer satisfaction and brand reputation. Internet channel development projects are about technical development, project management, and sales. The redesign of office spaces, mainly conducted externally, is based on the choice of a layout in a catalog and its adaptation to space at stake, and the team would specifically oversee the construction work. The

continuous improvement of the service gathers experts to work on the process and data collected; they also adjust the processes in light of competitors' best practices.

→ **Results**

The activities led to results such as incremental changes of the Home Insurance contract with new covers. They extended coverage, new online services such as the proactive emailing of documents, multi-channel services (e.g., the online booking of an appointment in an agency), website maintenance and development, office space evolutions and redesign, and incremental changes in the work processes to improve the service delivery quality.

→ **Capitalization, Expertise, and Diffusion**

We found no trace of transversal knowledge management initiatives nor documents aimed at documenting changes made to processes or a system to capitalize on the experience in projects. We discovered that duplications of ideas for improvement and projects are frequent. When asked, the operation team could not list all the upgrades they produced and experimented with. We found no documents about failed tests that could be used as a learning material to prevent new failures. None of the interviewees have mentioned that.

b. Since Design integration: 2020

This section focuses on the depiction of Design capabilities.

→ **Strategic orientation**

The two strategic plans —following the development plan— called for a diversification strategy through innovation. The main KPIs to target are solid financial results, Design, and experience at the core of the strategic plan for customer satisfaction, employee satisfaction, and contribution to the common good.

→ **Human Resources**

There are three Design teams (the Innovation team, the Digital Factory, and the Experience team) are led by the Chief Digital Officer (Digital Department) that reports to the Head of Strategy (one level from the Managing Director). The fourth and newest one, the I.T. Design team, is part of the I.T. department. MAIF has a centralized (Merholz & Skinner, 2016) Design organization: the teams are regrouped, and designers contribute to projects along with other players. The Design teams are not all located in one space (it is under study for 2021). Design key partners are the Marketing department, the Legal Department, the Communication department, and several departments from the Operation and

B2B divisions. The Operations division created the Customer Relationship Laboratory, a team dedicated to improving the processes, trained in Design thinking but did not recruit any designer.

Each Design team has a manager that reports to the CDO, one out of the four is a designer. The Design teams include 3 Lead/senior designers (2 in the Digital Factory and one in the Innovation team) and 54 designers (junior, retrained, and 30 freelances). Besides helping the other designers (Individual Contributors (IC) in their activities, senior designers contribute to defining the strategic orientation on the projects and serve as interfaces between the I.C. and the management. The I.C. have various Design jobs (Aitchinson et al. 2019): 8 Visual, 3 Content, 36 UX/UI, 9 Service, and 1 Strategy. The Design teams involve other jobs than Design: 4 administrative assistants, 12 project managers, 11 product owners, four digital analysts, nine traffic acquisition managers, and 41 web developers.

A skill repository has been built to define Design jobs and create job descriptions consistent with the designers' activities. It helps managers to develop their team's skills or assess candidates.

Design is known beyond the Design teams. It is promoted at the organizational level. More than a thousand people followed the COOC (Corporate Open Online Course, a MOOC created by a firm for its employees only) developed, and hundreds participated in workshops.

The environmental changes were drivers that led to Design integration and are still impacting Design capability development. New legal requirements (e.g., regarding data policies or office spaces), technological and societal changes (such as the development of vocal interfaces and the increase of mobile use) have directly impacted the Design teams' roadmaps definition and activities.
The connection to the environment also deals with the exchange of knowledge between internal and external stakeholders. External designers bring new skills and knowledge in; they contribute to Design renewal. In-house designers, especially in the Innovation team, participate in external communities of innovations (such as Service Design Network or inter-companies projects events). Most are promoted in the Design community of practice. Occasionally, in-house designers present keynotes in external French conferences dedicated to Design. The Design community of practice plays an active role in the Design practice watch and expertise development and diffusion. It is expected to define hiring guidelines to ensure the development of the practice through new complementary hires. Its most recent contribution is the creation of a Blog to share stories on Design at MAIF

→ Deployment

The Design teams work with various departments that commission Design work, such as the Marketing or the Communication departments, the Legal and Data departments, the H.R. and Operations departments. Design teams' members can assume several roles in a project: leaders, participants, method coaches for the project leaders, or external consultants helping project teams occasionally. The projects

led by Design teams are mainly based on an agile project management model. Each Design (team) manager is in charge of the team budget and decides which projects to pursue.

They defined a "Make or Buy" strategy with the CDO, approved by top management. It specifies at the organizational level and at the Design team level which type of projects the in-house Design teams will conduct and which ones will be outsourced for creative reasons or work overload.

The digital department's performance that regroups all the designers is assessed through one KPI: the acquisition rate on the digital channel (i.e., the number of new subscriptions coming from the website or the App). Other KPIs exist at the team where designers are assessed on quantitative indicators of the work produced (e.g., the number of new concepts created, the numbers of projects accompanied, etc.) rather than on the quality of the work (e.g., the impact on the customer and employees experience).

The team from the Operations division uses Design thinking as part of their 9-month experimentation in which a dozen front-line employees work together on continuous improvement experimentations in a dedicated "innovation lab" space.

→ **Activities**

Each Design team has a specific Design focus. The Innovation team is working on new touchpoints and new services, the Digital Factory on digital products for customers, the Experience team on customers' and employees' experiences improvement, and the I.T. team on digital products for employees. When Design teams lead projects, they adopt an entire Design approach (needsfinding, ideation, co-creation, prototyping, testing). In contrast, in other projects, their methodological leeway depends on the brief negotiated with the project leaders. Designers can help with various activities: the methodology definition, the workshop facilitation, or a specific step such as testing a concept, conducting user research, or imagining new solutions

Aside from the Experience team that works primarily on needsfinding and ideation early on projects, the other teams cover all the steps (needsfinding, ideation, and prototyping) and stay on projects until the final delivery — new products and services changes implementation. The methodology is defined at the project level and varies from one designer to another (e.g., tools, processes, and facilitation techniques).

Design projects duration varies a lot, from several days to several months and up to two years— one to three designers per project work in pairs with a project manager within multidisciplinary project teams.

The skills repository provides, in addition to the job description, a grid defining general knowledge and know-how designers should possess in theory, such as the ability to "take a brief and adjust it according to one's understanding of the need," "to integrate external constraints without restricting the creativity," "to synthesize and materialize an idea," or to "demonstrate pedagogy." These

elements act as guidelines to be followed by designers within projects. While designers attitudes (Michlewski, 2008) have been defined in the skills repository ("Demonstrate empathy; Be open - know how to disregard preconceptions and question oneself; Be curious - stay on standby and always learn; Knowing how to be proactive; Be diplomatic - know how to align stakeholders; Be comfortable in situations of uncertainty"), in practice designers have heterogeneous practices on similar projects.

The team from the Operations division uses Design thinking as a process, organizing their projects into five sequences.

→ Results

The outputs produced through Design activities depend on the Design team and the projects. It could be recommendations, an audit report, a new product or service prototype or development, a website update, a prospective report, a process definition. Part of the outputs is discarded. Others lead to new touchpoints (for instance, videoconferencing for claim-making), new services (e.g., the boat sharing service), or new digital product implementation (e.g., the App). There is no dedicated KPI to measure the Design teams' impact; the company relies on existing KPI such as financial performance (an increase of subscriptions or turnover), customer satisfaction, and churn. Design contributions cannot be isolated from those indicators. To monitor Design activities' impact on the customer experience, the implementation of a Customer Effort Score is under study.

→ Capitalization

At the end of projects or during the digital departments' quarterly meetings (the "Digital Demos"), designers are used to have project reviews where they present the work accomplished on projects, especially the tools they developed and their methodology. It contributes to expertise building. For instance, they upload the tools on a digital library (on Trello) dedicated to gathering such documents. However, no formal compulsory ritual exists.

Implementing a formal capitalization ritual is being studied for the designers working on digital products (in the Digital Factory and the I.T. Design team); part of their mission is to contribute to the Design System update. Though, at the Project level, frequent demos, i.e., meetings where the project progress is discussed, are opened to anyone in the Digital Department upon request.

Capitalization also occurs when a designer is faced with a new project and looks at the past projects or discusses with peers how to best address it. It could be within one Design team or across the Design teams, or within the practice's internal community.

Very recently (in April 2020), senior designers from the Digital Factory organized keynotes to share their knowledge and best practices with the other Design teams.

A community of practice has been set up to facilitate expertise and skills development. This community, led by the Digital Factory Design manager, has dedicated financial resources to plan internal events or participate in external events. It is aimed at increasing the sharing of opportunities for designers. An online discussion space has been created to facilitate exchanges between designers.

→ Expertise

Expertise includes pedagogical material on Design developed by in-house designers, such as slide decks and training templates.

When starting in a team, each newly hired designer brought various tools from previous experiences leading to a wide array of practices. In addition to what designers bring to the company when they join, the Design teams developed transversal tools such as the Design System, the Experience Signature and Design principles, or the Innovation's Strategic Radars. Those tools are aimed at helping project teams with Design activities. It adds up to form the organization's Design expertise.

Managing the Design expertise varies from one Design team to another. In the Innovation team, they built a collaborative tools repository, the Experience team started one recently, and the digital factory has several ones developed by individual designers. None of the teams keeps a project repository yet. The method used, the documents, and the tools produced in a project are not collectively shared on a platform; they are heterogeneously stored by individuals and send upon request. However, transversal initiatives grew through the community of practice's online space where some designers shared folders of resources and launched a resources repository (a Trello board) for new employees' integration. It is on the rise.

Beyond the differences in managing the Expertise, the teams do not share the same understanding, e.g., when the Experience team manager refers to UX designers, she does not refer to the UX designers working in the Digital Factory or the I.T. Design team, but to the Service Designers working on the Experience team, because a lot of employees conflate experience (service) design and user experience (digital design). There are differences in the tools, e.g., the "user journey" created by the operation team following a Design Thinking approach is not user-centered. So, when they collaborate with designers, their expectations may differ. Those discrepancies in the language and tool led to misunderstandings and conflicts in practice among the Design teams themselves and members of the firm that call for designers or Design tools.

The Design expertise's consolidation is at the core of the "Design at scale" mission and the new role defined in July 2020.

→ Diffusion

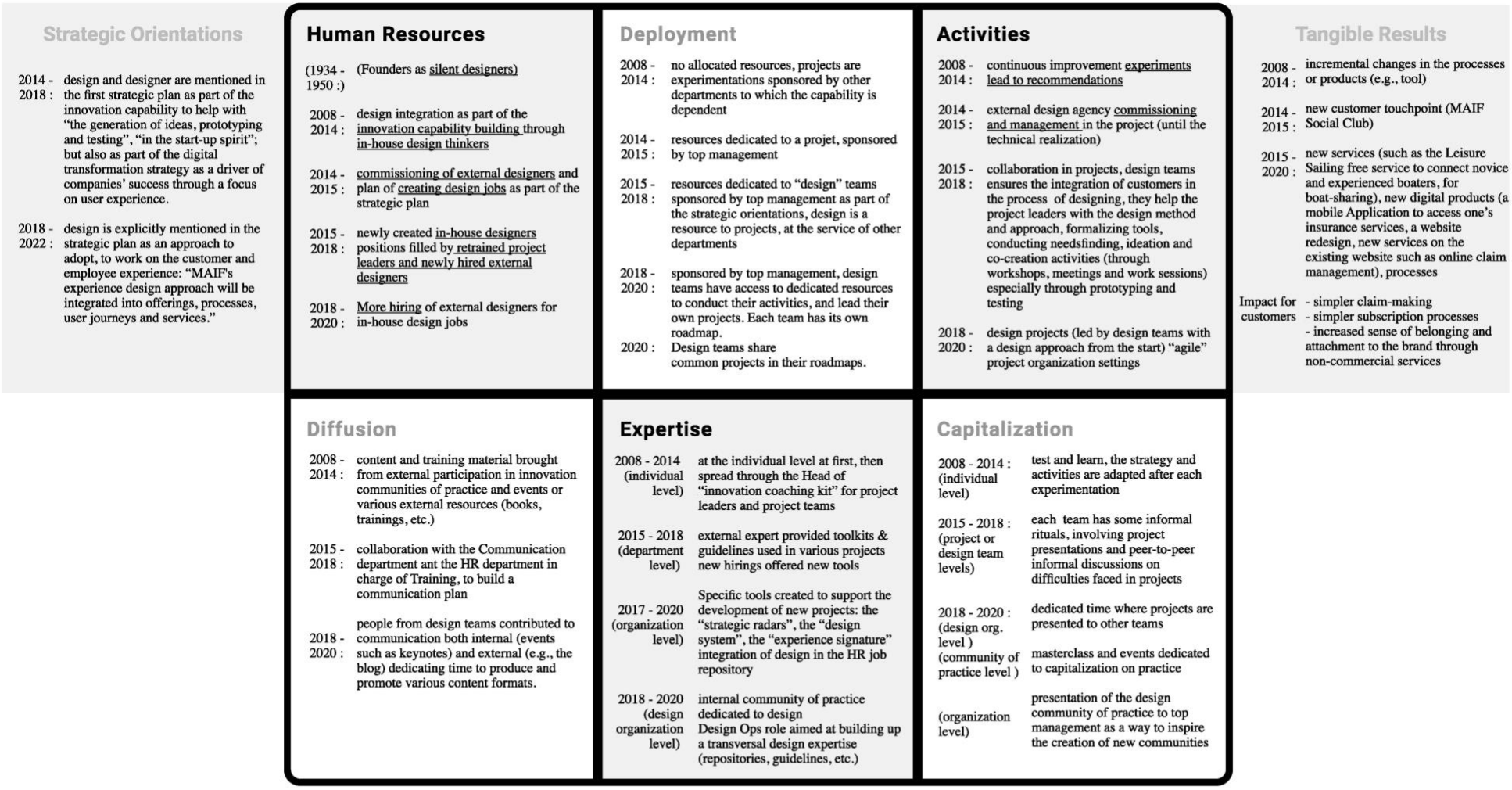
Each Design team has its communication and training strategy. However, the promotion of Design to non-designers, raising awareness on Design, is part of all the Design teams' objectives. The

Experience team developed a COOC (Corporate Open Online Course), Design initiation workshops, and internal communication events dedicated to Design diffusion. The Innovation team promoted its activities through a web channel and specific thematic events (internal and external events). The Digital Factory Design promotion is to organize Design training sessions for novices (introductory workshops) at the beginning of a project.

2. Chronological model of Design integration and capability building at MAIF

We described how things were before Design and how they are now; in the following part, we show how the organization moved and how it went from the former to the latter through a chronological use of the model. To show Design capability development trajectory, we explain how each building block of the model has evolved through the 4 phases of Design development identified in Chapter 4, part 1: The Discovery (2008-2014), the Emergence (2015 – 2018), the Consolidation (2018 – 2020) and the Institutionalization (2020 onwards).

Figure 83 - Chronological application of the model to Design integration and capability development at MAIF (1934 – 2020)



a. Strategic orientations

We noticed at MAIF that each strategic plan led to a reorganization that played a role in Design integration and capability development.

MAIF has defined its mission as a purpose-driven company and wrote a vision for this evolution issued in 2015 to guide its strategy until 2025. The corporate strategy informed the Design organization's vision, defined by the CDO as "designing and building commons."

The development plan and strategic plans serve a long-term vision (2015-2025). The Design teams contribute to the strategic plan objectives, especially the "pivot," by creating the digital channel and the digital transformations that change the organization's practices and the "singularity" by developing new digital touchpoints to increase customer acquisition. At the Design organization level, the objective is to "build a powerful digital channel in an omnichannel world" to recall the CDO words. The orientations towards the diversification as part of the innovation strategy and then towards the digital transformation as part of the digital strategy have been the triggers for the first designers' hiring. The first strategic plan benefitted from Design integration, whereas the second strategic plan benefitted from Design contribution in its elaboration and led to Design development.

→ Discovery (2008-2014)

The first explicit mention of Design at the Board of Directors dates back to 2012, first in a review of an innovation partnership, then in a presentation of the Head of Innovation advocating for Design Thinking use.

→ Emergence (2015 – 2018)

It is not until the first strategic plan that the Board of Directors decides to invest in Design. Design and designer are mentioned in the first strategic plan as part of the innovation capability to help with "the generation of ideas, prototyping, and testing," "in the start-up spirit"; but also, a part of the digital transformation strategy as a driver of companies' success through a focus on user experience.

→ Consolidation (2018 – 2020)

Then, in the second strategic plan, Design is considered as an essential approach to adopt. Experience is one of the strategic plan pillars. Design is explicitly mentioned to work on the customers' and employees' experience: "MAIF's experience Design approach will be integrated into offerings, processes, user journeys, and services." This means that it is recognized as part of strategic priorities and benefits from dedicated resource allocation.

The innovation strategy fell under the Digital strategy, and Design is now solely part of the Digital strategy.

→ **Institutionalization (2020 onwards)**

Design contributes to the Digital and Innovation strategies. A proper Design strategy is being elaborated, as transversal as the Digital one.

b. Human Resources

Design practitioners and Design awareness and understanding grew a lot in the emergence and consolidation phases, after a very slow progression in the discovery phase. It is expected to plateau in quantity and progress in quality in the institutionalization phase.

→ **Discovery (2008-2014)**

We argue that silent designers created MAIF in 1934, but Design integration started as part of the innovation capability building from 2008 to 2014.

There is no designer during the discovery phase, only a Design thinker, the Head of Innovation. He discovered Design thinking through external communities of practice dedicated to innovation and experimented with the Design Thinking approach and tools in its projects. At this time, only a negligible number of people in the organization know about Design. He later convened a meeting with the Head of Strategy to commission the first external Design agency. In-house Design capability building starts in 2014 by managing this first project involving an external Design agency. This first experience of working with designers leads to creating in-house Design as part of the Innovation strategy in the first strategic plan; it is concurrent with the emergence of the need for designers at the Digital Factory as part of their new way of managing projects.

→ **Emergence (2015 – 2018)**

The transition to the emergence phase is marked by hiring in-house designers to join newly created teams to complement Design teams composed of former project managers retrained as designers. An increasing number of people in the organization discover Design.

→ **Consolidation (2018 – 2020)**

The consolidation phase results in an extended Design awareness outside of the Design teams gathered in the same department (Digital department). However, we showed that more than ten various understandings of Design coexist. More designers are recruited in Design teams.

→ **Institutionalization (2020 onwards)**

Finally, the institutionalization phase is characterized by a stabilized number of designers in the organization and an official recognition of the profession by other departments and the Human

Resources division. Design managers then focus on coordination between teams, defining roles and perimeters, and establishing joint bases for a more coherent Design organization.
The institutionalization phase should increase collaboration between Design teams that could foster Design understanding and clarify the remaining fuzziness around what it is and how to use it. As a result, MAIF mixed silent designers, Design thinkers, external designers, and at last in-house designers.

c. Deployment

The resources allocated to Design grew, so did their involvement in the projects following different roles.

→ Discovery (2008-2014)

At first, the Head of Innovation has no dedicated resources. He launches experimentations searching for other departments sponsoring.

→ Emergence (2015 – 2018)

With the first strategic plan, the newly created teams have resources dedicated to Design and work on projects led by other departments and sponsored by top management. Design teams are a resource to innovation projects at the service of different departments.

→ Consolidation (2018 – 2020)

Design teams have dedicated resources to launch and lead their projects and activities during the second strategic plan. Each Design team has its roadmap. A Make or Buy strategy is dedicated to Design as part of the corporate resource allocation program management.

→ Institutionalization (2020 onwards)

Design teams are working on a shared roadmap with joint projects such as the omnichannel projects.

d. Activities

Design Activities evolved a lot from the discovery phase to the consolidation phase.

→ Discovery (2008-2014)

During the discovery phase, the Head of Innovation tested tools and innovative approaches he learned in training, external communities from books or toolkits found online. He ran them through dedicated workshops such as co-creation. He also experimented with new project management methods,

including the first multidisciplinary project teams mobilizing external experts. Then in 2014, he initiated a relationship with a Design agency 2014.

→ **Emergence (2015 – 2018)**

As of the first hiring of designers, Design activities cover user research, prototyping, and/or testing, but also creative activities through ideation sessions in projects conducted under the project management mode in place and stage-gate processes (except from the Digital Factory team).

→ **Consolidation (2018 – 2020)**

Progressively, the project management evolved to agile project management, and projects followed a complete Design approach, including Design research, visualization, ideation, prototyping.

→ **Institutionalization (2020 onwards)**

We don't have any data on potential evolutions of the activities in the near future

e. Results

The results from Design Activities varied between the discovery phase and the emergence phase but not so much between the emergence and consolidation phase.

→ **Discovery (2008-2014)**

In the discovery phase, the Design thinking approach mainly led to improving an existing solution, such as incremental changes in the processes, with two exceptions: first, the three-month innovation experiment that led to a new digital product for online quotes; second, the collaboration with the external Design agency that led to implementing a new touchpoint for customers (MAIF Social Club).

→ **Emergence (2015 – 2018)**

In the emergence phase, the results cover, for example, new services (such as the Leisure Sailing free service to connect novice and experienced boaters, for boat-sharing, co-browsing, learning activities), new digital products (a mobile application to access one's insurance services, a website redesign, new services on the existing website such as online claim management), changes of processes. Those resulted in simpler claim-making and subscription processes for the customers and a sense of belonging to a community that grows the customers' attachment to the brand and values through their non-commercial services.

→ **Consolidation (2018 – 2020)**

In the consolidation phase, the type of results did not change much. But in addition to the aforementioned result types, Design teams take part in the definition of strategies and solutions for their execution, such as in the omnichannel projects aiming for more transversality and coherence of the brand in the Digital Channel and across the others.

→ **Institutionalization (2020 onwards)**

Design teams are focused on more complex projects in the institutionalization phase, such as the definition of strategies and solutions for their execution. For instance, the definition of the omnichannel[16] strategy, the identification of changes in the claim management model, and the definition of new touchpoints may lead to new services to the customers necessary to the omnichannel strategy execution.

f. Capitalization

Capitalization moved from the individual level during the discovery phase to the project level during the emergence phase, then the Design team and Design organization level during the consolidation phase, and eventually to the organization level as a whole.

→ **Discovery (2008-2014)**

The Head of Innovation reflects on his multiple experiments, learn and adjust his strategy and activities.

→ **Emergence (2015 – 2018)**

Each team has some informal rituals involving project presentations and informal peer-to-peer discussions, especially to share the difficulties the designers faced in projects. Those are not systematic nor planned.

→ **Consolidation (2018 – 2020)**

The consolidation of teams increased the exchanges at the team level, fostering more peer-to-peer interactions. At the Design organization level, the teams present their ongoing and past emblematic projects in internal events. Some masterclass and events are dedicated to training and capitalization on

[16] Omnichannel experience projects aim to build an omnichannel experience, which means that the customer can switch from one channel to another, effortlessly, and with no waste of time nor information. For instance, one can start a claim-making in the mobile App and finish it through phone calls or a visit to an agency or reciprocally.

practice. At the organizational level, the Design community of practice serves as an experiment to top management, reflecting on creating new communities of practice.

→ **Institutionalization (2020 onwards)**

We don't have any data on objectives or means planned for new capitalization modes shortly.

g. Expertise

The Expertise was built through hiring designers, formalizing tools and approaches within the projects, an external expert that provided toolkits and guidelines in projects, and participation in external training, Design communities, or events.

→ **Discovery (2008-2014)**

The Expertise remained at the individual level until dedicated Design teams were created. The Head of Innovation spread innovation approaches, including Design Thinking, through its "innovation coaching kit" for project leaders and project teams.

→ **Emergence (2015 – 2018)**

External designers working in projects or newly hired provided toolkits & guidelines built the team level expertise.

→ **Consolidation (2018 – 2020)**

Then, Design teams created specific tools to support the development of new projects: the "Strategic radars," the "Design system," the "Experience signature," and made them available at the organization level. The creation of the Design Guild helps to form the Design expertise (i.e., the internal community of practice dedicated to Design) since it led to creating a blog and peer-to-peer training sessions between designers. The integration of Design into the H.R. job repository generated new knowledge on Design (e.g., skill mapping, job descriptions) shared at the organizational level.

→ **Institutionalization (2020 onwards)**

The Design expertise is supposed to be reinforced by the "Design at Scale mission," creating the Design Ops role whose mission will be to develop the Design expertise and align team practices.

h. Diffusion

The diffusion of Design expertise amplified phase by phase; it mainly focused on bringing in material from the external environment during discovery; it focused on promoting the approach and the results of Design contribution in projects internally.

→ **Discovery (2008-2014)**

The Head of Innovation used and shared content and training material brought from external participation in innovation communities of practice and events or various external resources (books, training, etc.)

→ **Emergence (2015 – 2018)**

The Design organization collaborates with the Communication and the H.R. department in charge of training to build a communication plan and training sessions. Besides, each Design team promoted Design in various ways; for instance, the Digital Factory offers in-project coaching.

→ **Consolidation (2018 – 2020)**

Design teams contributed to internal and external communication (e.g., a blog dedicated to Design, keynotes, events), dedicating time to produce and promote various content formats.
The CDO promotes Design at the top management level, and the Design managers advocate for Design use to their peers.

→ **Institutionalization (2020 onwards)**

We don't have any specific data on the diffusion means or actions in the near future. No new communication plan or strategy has been articulated so far to support Design diffusion

3. A dynamic model of the Design development and capability building

We previously showed the model in static and chronological use at the organizational level. We now focus on the team level and at the project level to understand the steps that led to Design development. The Chronological use displayed successive pictures of the Design integration according to the four phases identified. In the following, we will show the dynamic use of the model, i.e., the trajectory or the move from one building block to another, revealing patterns of movement and triggers.

a. Design development at the teams and projects levels

At the team level (Innovation, Digital Factory, Experience, and the more recent IT Team), we investigate the pathway from the first hiring of designers to their integration in teams. At the project level (the leisure sailing and Claim management projects presented in Chapter 4), we investigate the steps of Design integration from the rise of the initial demand for a designer towards the project result. The following figures (Figures 84 to 89) show how Design has been progressively developed in the four teams and the two projects using the model. The six trajectories represented in these figures will not be commented on in the text because 'a figure is worth a long text'. However, below, and to ease reading the figures, we comment on Figure 84 that displays Design integration in the Digital Factory, starting from the team's creation up to the first designer hiring, which covers 2016-2017. We focus on how the story unfolds and draw the trajectory. Blockers, interruptions, and back-and-forth at some points disrupt this dynamic. It shows how the capability builds along with events (actor's intervention, decision, interactions) and means moving from one building block of the model to another.

Starting from[17] the observation of collaboration issues between the three teams in charge of the Internet channel (1)[18], the management decides to allocate a new office space (physical resources that fall under the Deployment building block in the figure) to gather the three teams (2). At the inauguration of the new space, the Managing Director announced the reunification of the three teams into one recent (change in the Human Resources organization), the Digital Factory (3). As part of this reorganization, the DF manager is asked to rethink the project management model (Deployment) to work on the collaboration issues (4). They moved from the V-cycle model to an Agile model with the help of an external coaching service that offers a learning by doing approach through projects, to retrain the DF team and helps people transition. This has a direct impact on the way they conduct the activities (5). The Agile methodology relies on a strong emphasis on Users who are new to the team (6) who have to learn about new tools and adopt a new mindset. The team is invited to capitalize on their experience in projects, reflect on what works well and what needs to be improved (7). The project teams also document the projects and formalize the new methods and ways of working (8). The knowledge created enriches the team expertise, enables the standardization of the project documentation (9) and the description of the new work organization (10), and a toolbox including templates anyone can pick. All this knowledge shared digitally fosters the adoption of the new work organization explicating guidelines and founding principles. The new work organization creates new roles that trigger a redefinition of jobs in the DF (changes in Human Resources); the project manager role disappears some swap to newly created Design jobs (12). Those "novice" designers follow two-week retraining (13) that grows their awareness and

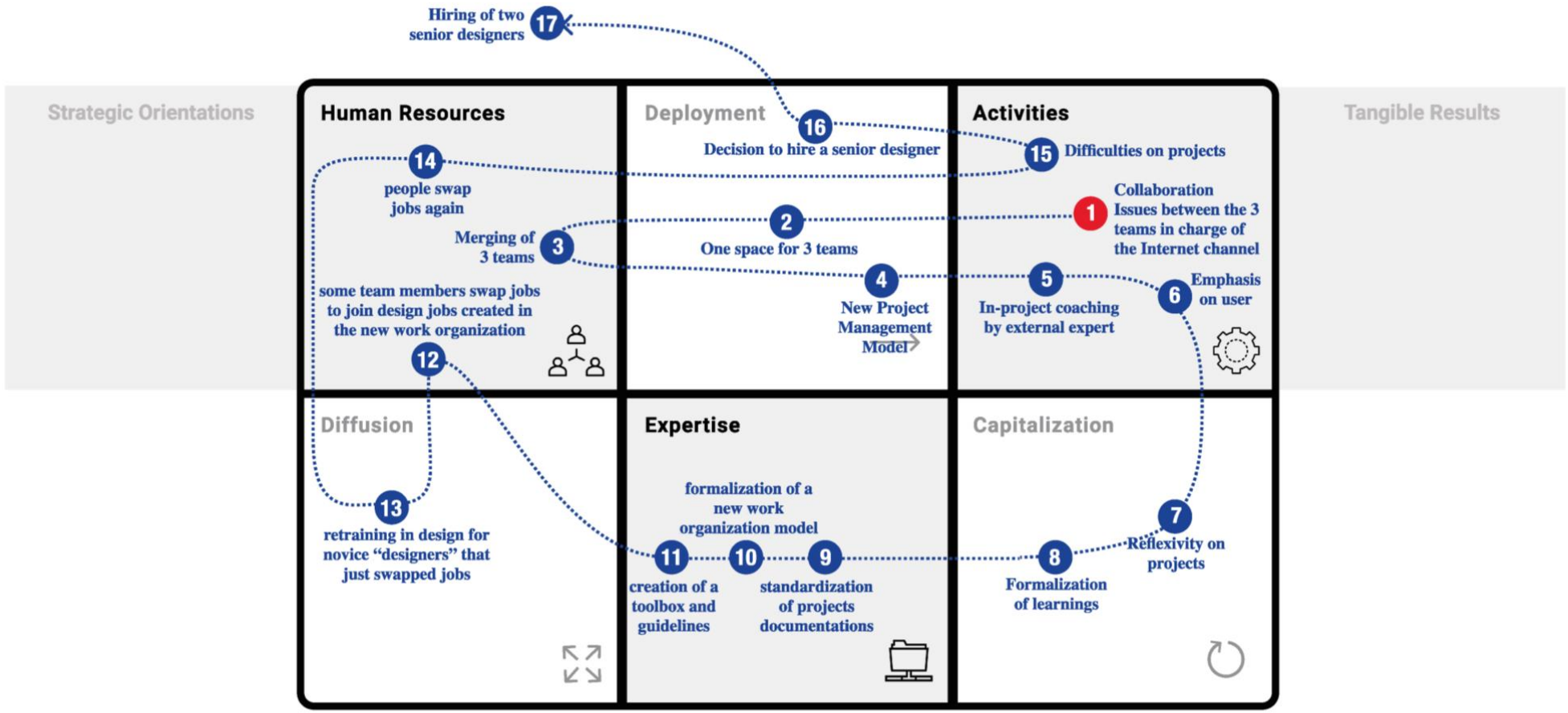
[17] The red circles in figures are the starting points.
[18] Each number represents a step in the trajectory

individual capability in Design (Diffusion). Right after this training, some swap jobs again. Others start working as designers in projects, taking part in the team's activities; the difficulties they face in conducting the Design activities (15) lead to a decision approved by managers to hire external senior designers (16). Two designers are hired (17) one for each Design practice: UI Design and the UX Design, essential to Digital Product Design.

The case of DF is quite simple as it comprises very few steps (17), as is the case of the IT team (8 steps) and the two projects (leisure sailing and Claim management). For the Experience team and the Innovation team, we had to split the trajectory depiction in two and three to enhance legibility. We chose the split at crucial turning points in the team's history. The innovation team trajectory is split into three sequences: 2008-2012 (19 steps), 2012-2014 (12 steps), and (2014-2015) (12 steps until step 43). Experience trajectory is split into two sequences: 2016 (12 steps) and 2017 (12 steps until step 24).

We observe from all those figures a circular cyclical pattern that breaks at several steps; we then discuss the trajectories interruptions and backward movements in the next part of this section.

Figure 84 - Dynamic application of the model to study the integration of Design in the Digital Factory team



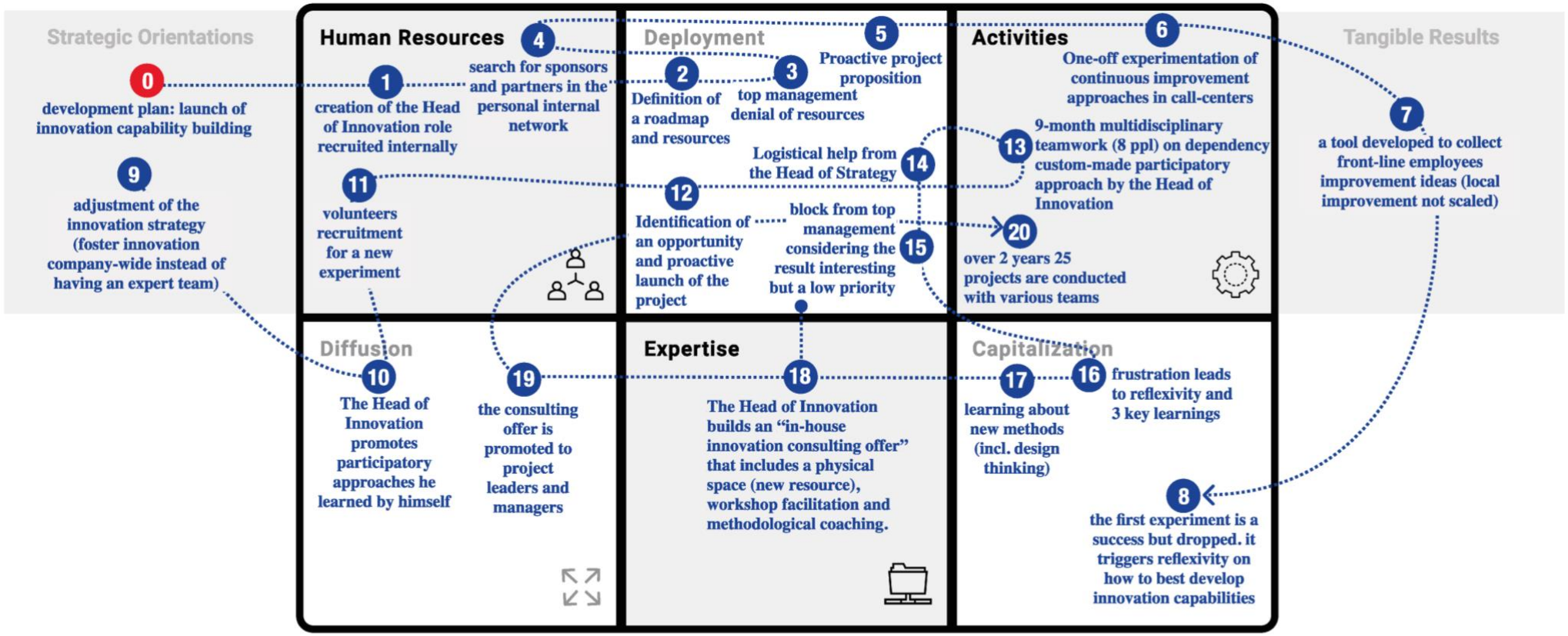
Design Capability-Building at MAIF

Dynamic use of the model at the team level

Design Development | 2015 - 2016

Digital Factory TEAM

Figure 85 - Dynamic use of the model to study the integration of Design in the Innovation team

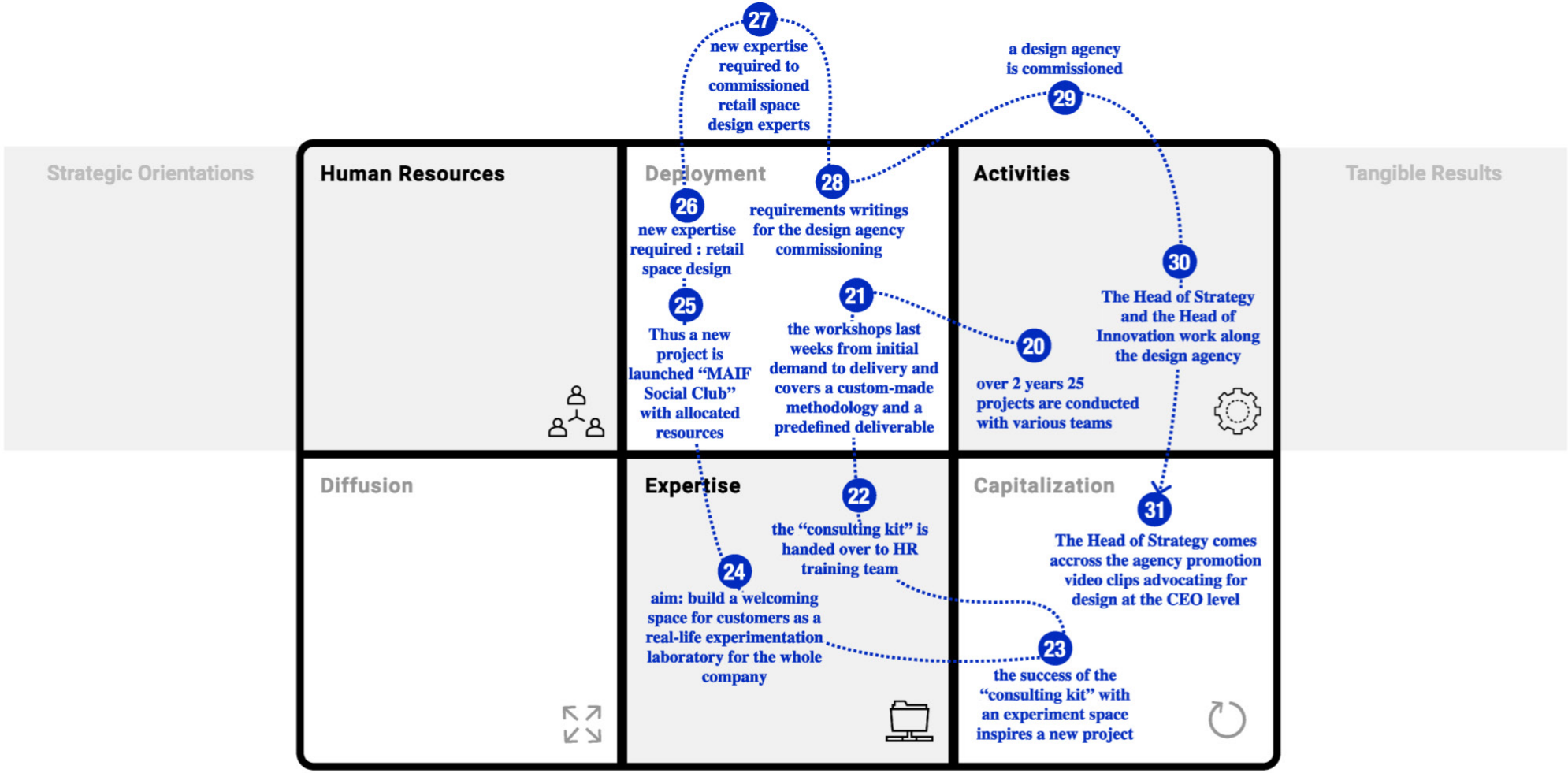


Design Capability-Building at MAIF

Dynamic use of the model at the team level

Design Development	2008 - 2012

Innovation TEAM (1/3)

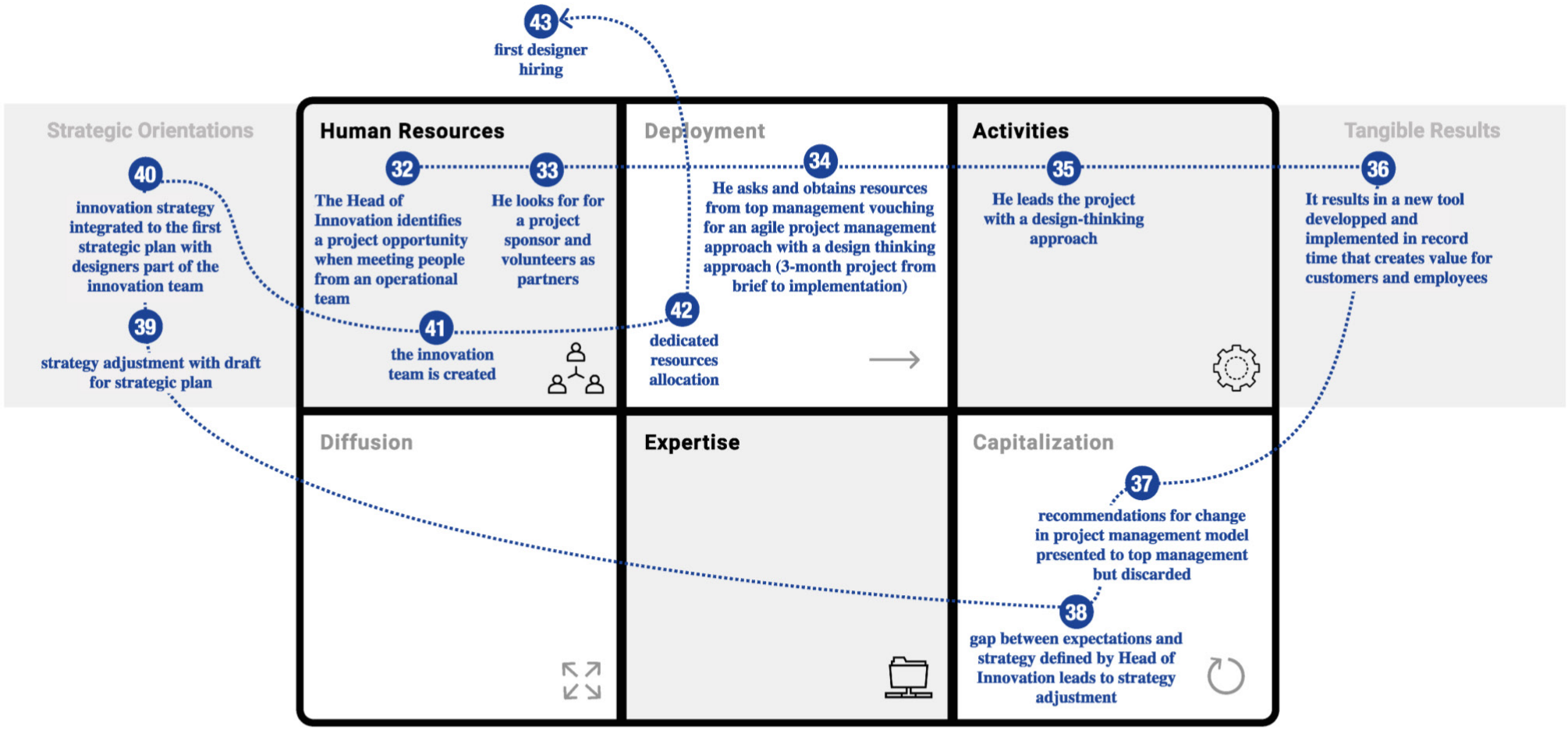


Design Capability-Building *at* MAIF

Dynamic use of the model at the team level

Design Development	2012 - 2014

Innovation TEAM (2/3)



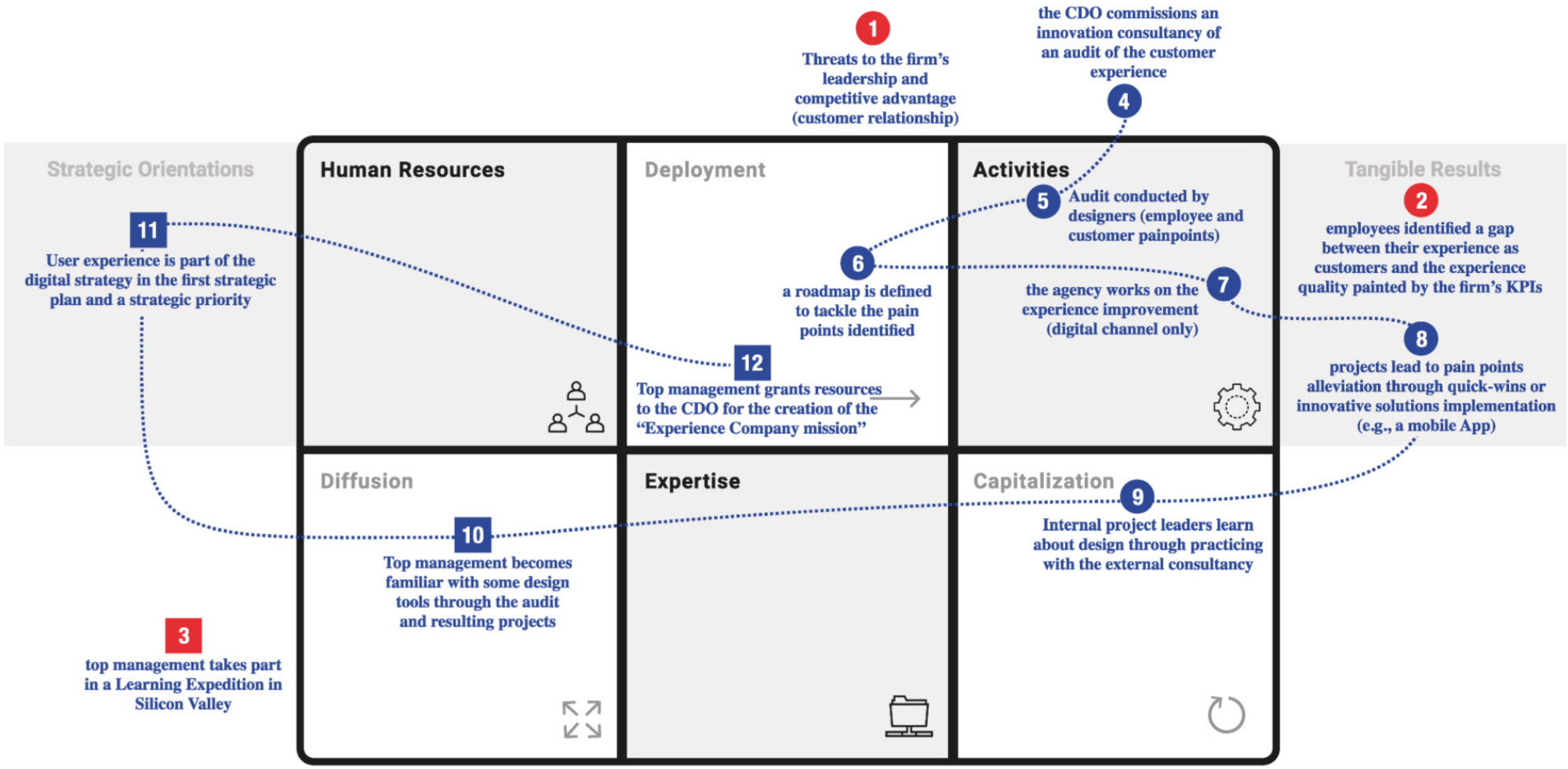
Design Capability-Building *at* MAIF

Dynamic use of the model at the team level

Design Development	2014 - 2015

Innovation TEAM (3/3)

Figure 86 - Dynamic application of the model to study the integration of Design in the Experience team

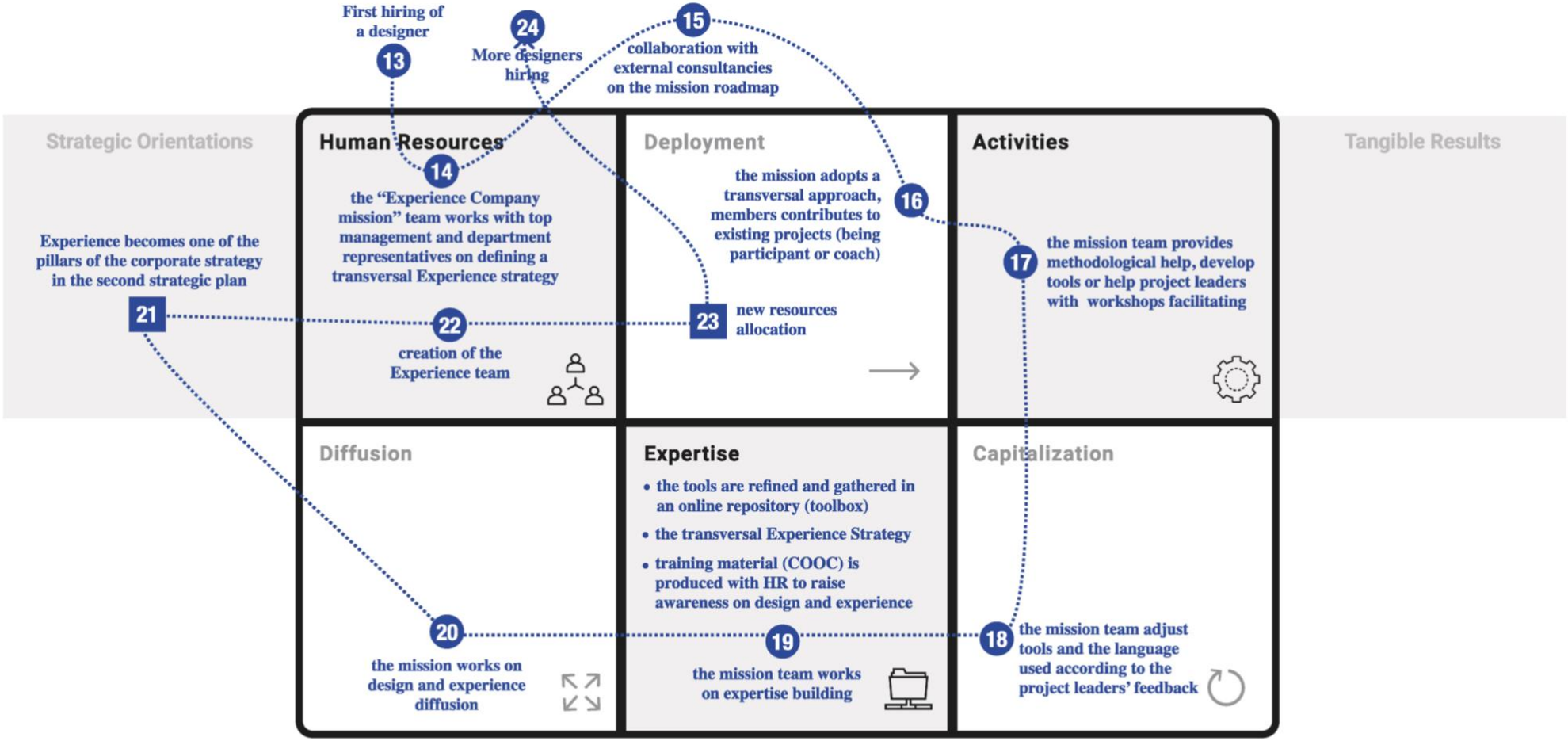


Design Capability-Building at MAIF

Dynamic use of the model at the team level

Design Development	2016

Experience TEAM (1/2)



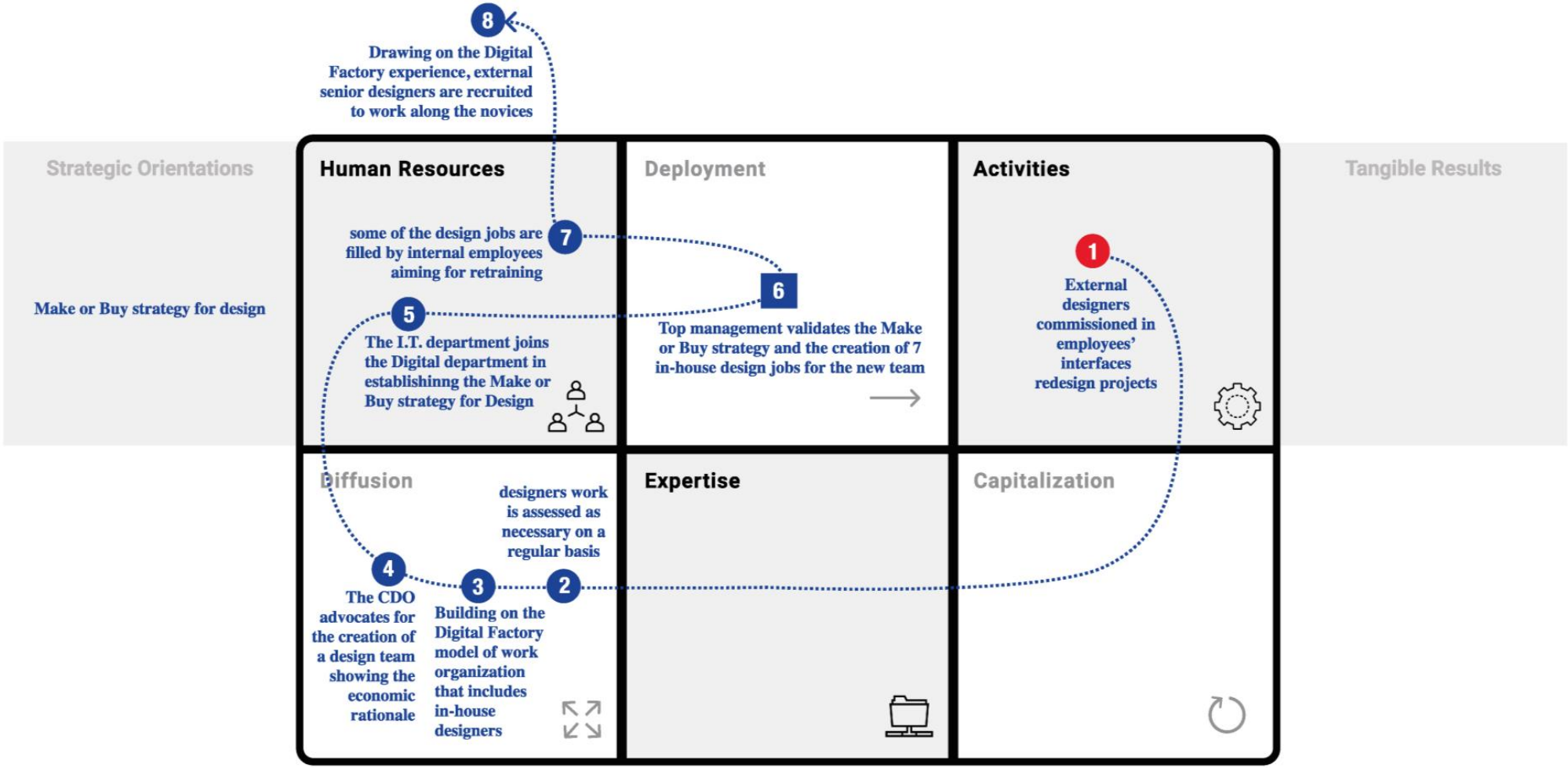
Design Capability-Building *at* MAIF

Dynamic use of the model at the team level

Design Development	2017

Experience TEAM (2/2)

Figure 87 - Dynamic application of the model to study the integration of Design in the I.T. Design team



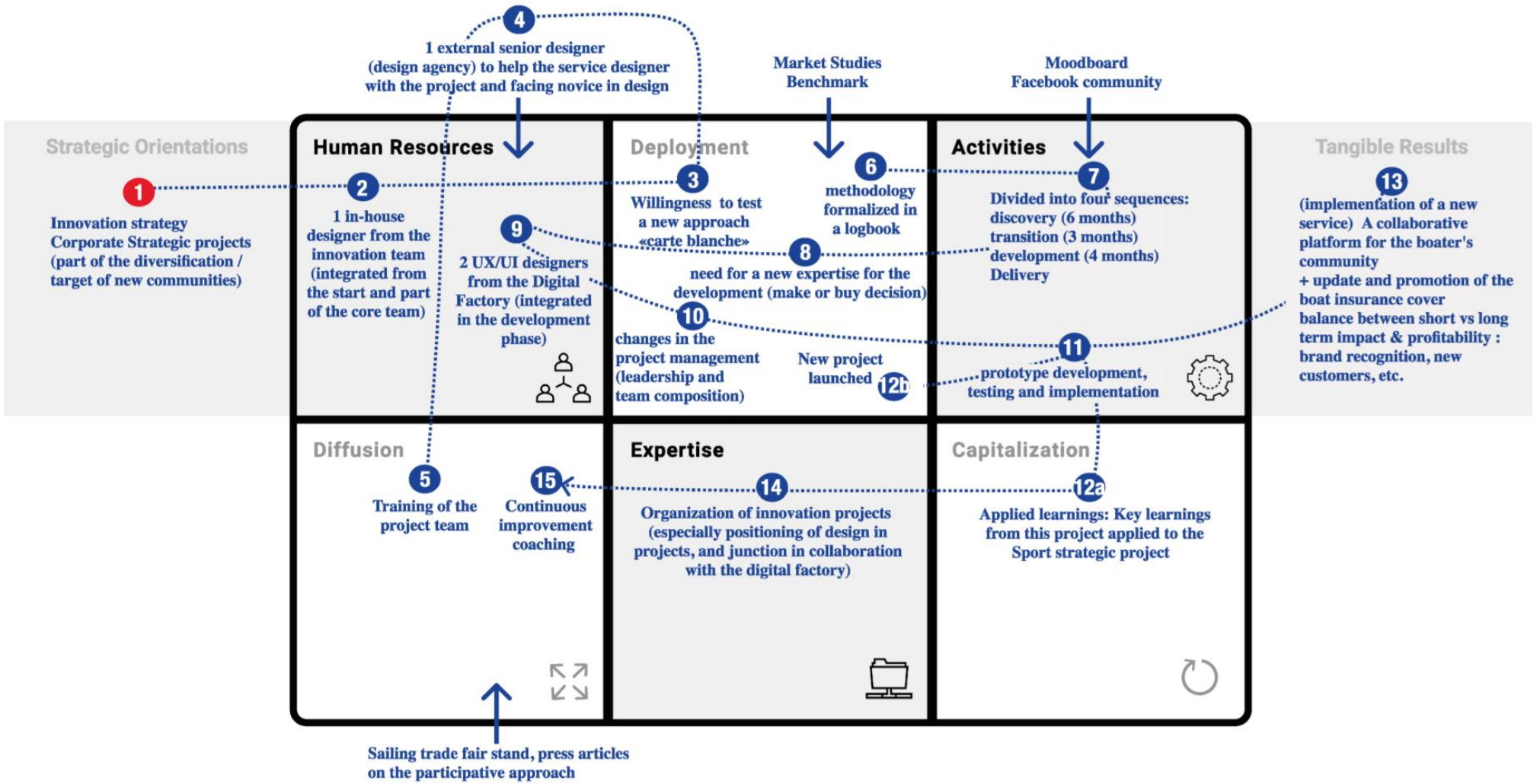
Design Capability-Building *at* MAIF

Dynamic use of the model at the team level

Design Development | 2019 - 2020

I.T. Design TEAM

Figure 88 - Dynamic application of the model to study the integration of the Leisure Sailing project



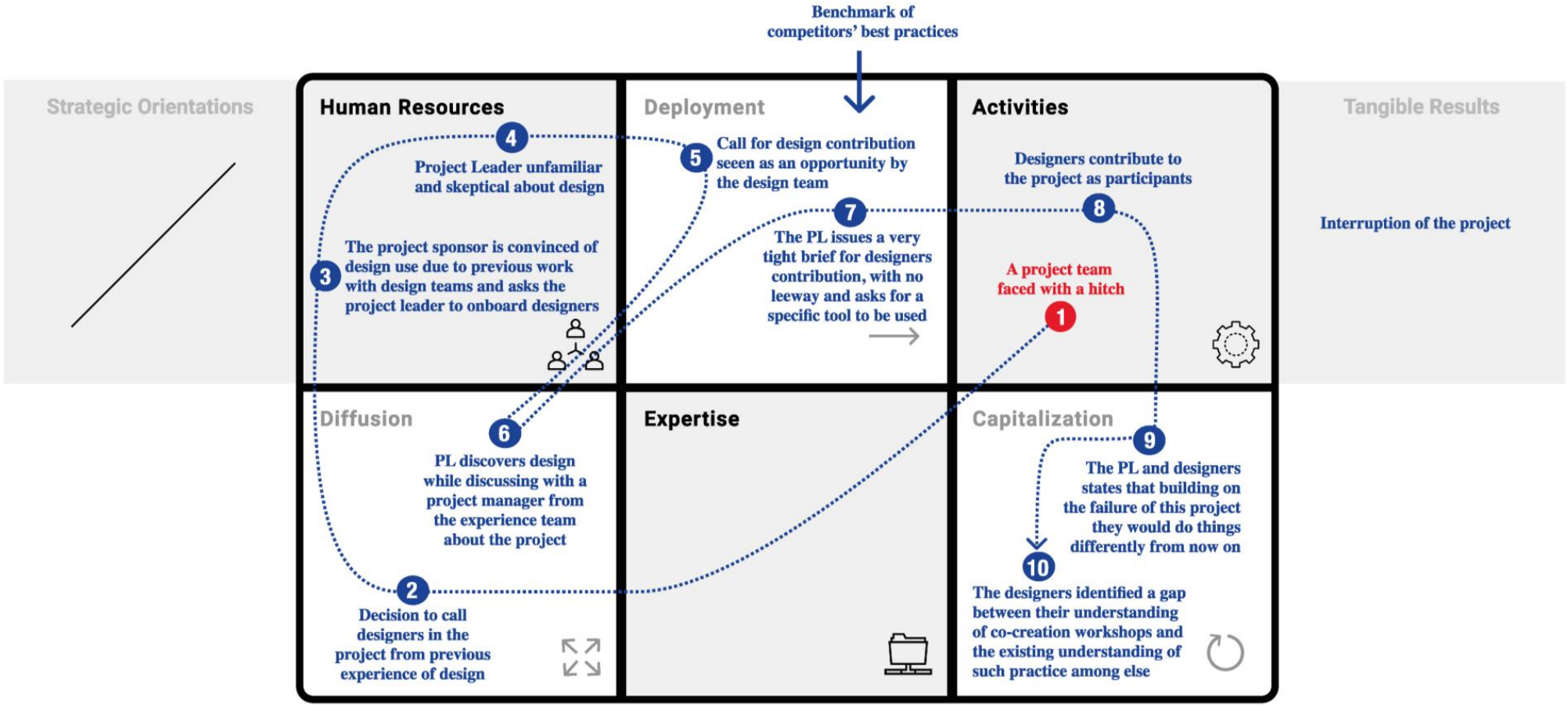
Design Capability-Building at MAIF

Dynamic use of the model at the project level

Design Development	2015

Leisure Sailing PROJECT

Figure 89 - Dynamic application of the model to study the integration of Design in the New Claim-Management model project



Design Capability-Building *at* MAIF

Dynamic use of the model at the project level

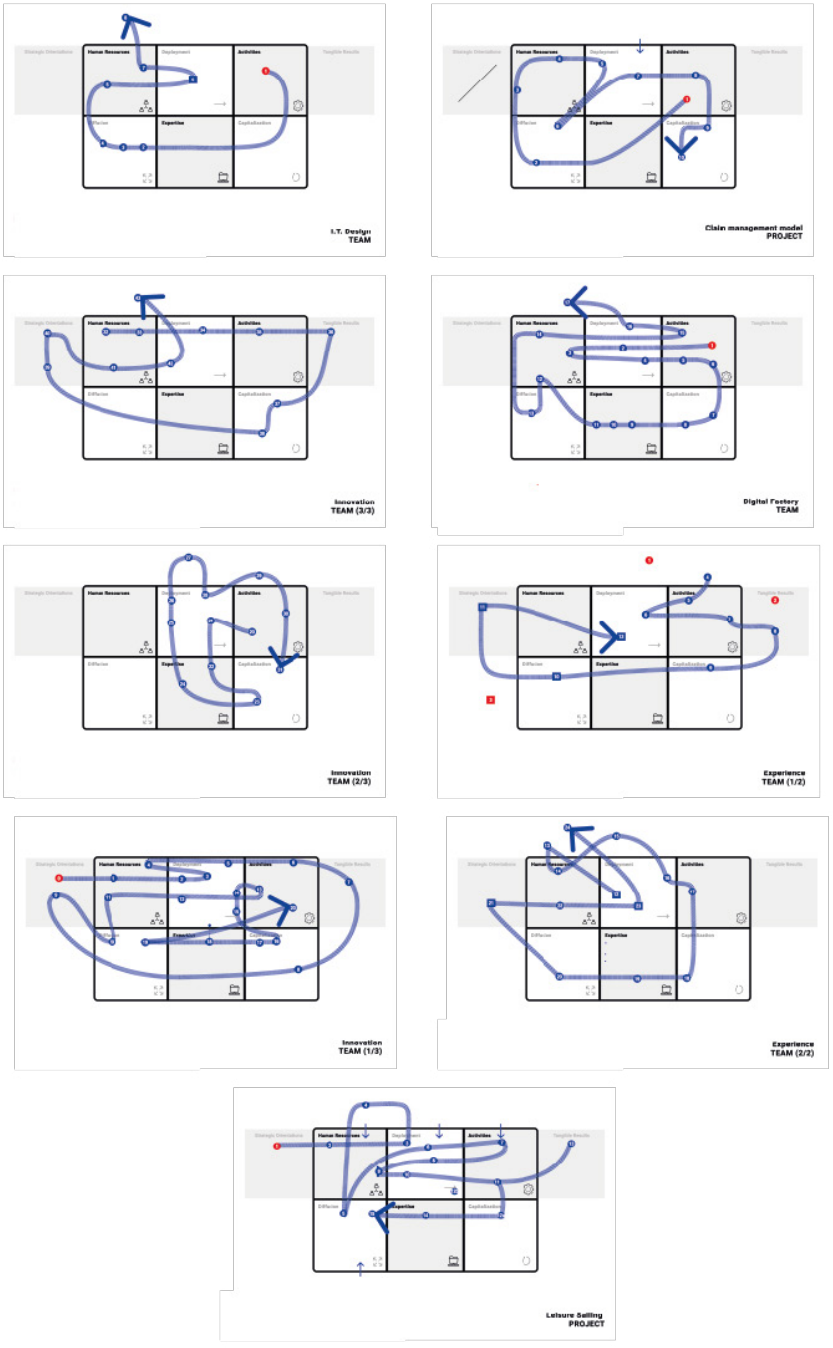
Design Development	2018

Claim management model
PROJECT

b. A similar trajectory: a virtuous circle

Representing the Design integration trajectories schematically at different levels on the same page, the figure below (Fig. 90) shows that the trajectories seem to follow a spiraling dynamic that goes from building block to building block, incrementally and iteratively. We call this the 'virtuous circle' of Design capability-building. The word 'virtuous' expresses the consolidation dynamic of a capability strengthening over time. It refers to the gearwheel effect we suggested to convey the idea of 'self-reinforcement.

Figure 90 - Overview of the trajectories of Design within the teams and the projects



Our suggestion echoes with the recent contributions to Design integration. Indeed, Wrigley et al. (2020) argued that a minimum knowledge base, a “cultural capital,” was necessary to understand Design. At MAIF, this cultural capital has been built through practice, i.e., by carrying out Design activities. First, internal stakeholders adopted Design thinking in experimental projects; then, they brought external designers to participate in projects. The development of a new project management model motivated the creation of Design jobs in the Digital Factory, and expert designers contributed to implementing this new project management model. Symmetrically, the reverse happened, and designers' arrival in projects induced changes in the project management model. Bringing Design in projects contributes to the Design expertise and cultural capital building. This organizational Design expertise may conflict with existing practices in the organization. Junginger (2015) points to this as the “organization legacy” when investigating Design integration. However, through projects, designers develop new tools and improve their practices. Amended tools and practices are often reused and updated in the following projects. Conducting Design activities with project teams, Design practitioners demonstrate the benefits of the Design approach, and the internal stakeholders grow their understanding of Design. The more educated on Design the other departments and project leaders become, the more they ask for Design teams. A better understanding of Design leads to better conditions for Design deployment. Better conditions lead to better results and, therefore, greater visibility and legitimacy of Design teams.

This virtuous circle or dynamic is in line with Björklund et al.'s (2020) recommendations. They suggest that the Design expertise should be shared widely beyond designers in the organization to foster Design integration, pointing to the necessity of a co-evolution of deep Expertise that relates to the capacity of practicing Design, and wide Expertise that should enable "*a widespread understanding and application of Design approaches and the organizational scaffolds to support Design efforts across the organization.”* The deep Expertise is located in the Design teams, whereas the wide Expertise is distributed within the organization. This means there should be a sufficient number of designers to support the Design activities and a broad group of Design adopters (Design thinkers and non-designers familiar with Design) to build a Design-driven organization (the "cultural capital").

They put forward the dependency of Design expertise on the investments of a company, and invite to look at investments in the number of in-house designers, their level of expertise, the variety of Design specializations, the budget, in other words, the 'Human Resources and the 'Deployment' in our model, to measure the expertise depth; in addition to investments in building an understanding of Design in the organization, what we labeled as Design diffusion (the means employed for Design diffusion, the departments partnering with Design, the level of understanding that enables Design practice in projects) to measure the expertise width.

We argue that such virtuous circles at various levels in the organizations contribute to building the Design capability.

One can then wonder how this virtuous circle is initiated and how to foster or overcome challenges to enable this dynamic.

c. Where to begin? Where and how does it start?

The starting points of the virtuous circle are highlighted in red in Figures 84 to 89. No starting points are identical, but we identified three patterns for Design integration.
First, the corporate strategy input leads to a change in the organization structure (reorganization, creation of a team, partnership), new resource allocation, and types of projects. Second, difficulties faced in a project called for changes in the deployment, possibly up to the human resources structure, and calls for specific expertise from in-house teams or another organization. Third, subsequent interactions (competitors, changes in the environment, or customers' feedback) signal a threat or an opportunity; then, leading to a new project that gives other ways or a new strategy.

At MAIF, two pathways led to the hiring of external designers. The first one is a strategic orientation that creates a new job (new resource allocation and external hiring). This is the way designers were hired in the Innovation team (steps 39 - 43), in the Experience team (steps 11-13 and 21-24), and in the I.T. Design team (steps 6-8). Then there is the Digital Factory pathway (steps 10-17): a new need for expertise is identified; thus, new positions are created and filled internally, regardless of the retraining of the employees that take on the new roles, difficulties in the activities; senior designers are recruited to help the activities.

We identified five typical interruptions of the virtuous circle dynamic corresponding to the back-and-forth, backward movements, or interruptions between two adjacent building blocks in the model. They are synthesized in the following Table 17.

Table 17 - Patterns observed that varies from the virtuous circle

	Observation	Reference in the figures	Blocker observed
(1)	Move from Activities to Deployment to Human Resources	Innovation team steps 2 to 5 and 12 to 15; Leisure sailing project steps 7-10; Digital Factory team steps 1-3 and 15-16	Adjustment of the team composition in light of challenges faced in the activities (at the project level or the department level)
(2)	Move from Activities to Deployment	Experience team steps 5-6; Innovation team steps 20 to 21; Leisure sailing project steps 11-12a	The project roadmap is adjusted or built based on Design activities (in other words, one project evidences the need to launch another one).
(3)	Move from Deployment or Human Resources to Diffusion	Claim management model project steps 5-7; Leisure sailing project steps 3-5; Digital Factory team steps 12-14	The need to expose the Design approach to project team members before moving to the activities.
(4)	Move from Capitalization to Strategic Orientations	Innovation team, step 37 to 40	The manager adapts the strategy following successes or failures in the projects or Design activities.
(5)	Move from diffusion to strategic orientations	Experience team steps 10-11 and 20-21	The more people know about Design, including top managers, the more the importance grows in the strategic orientations.

Those observations evidence the dependency of one building block on another—changes in one lead to adjustments and iterations on the other ones. The changes observed concern the project or department team composition (1), the project or team roadmap (2), the negotiation of the conditions for design deployment in a project (3), or the strategy-building through activities (4) and diffusion (5). We notice that the back-and-forth are mostly on the upper model building blocks (strategic orientations, Human Resources, Deployment, Activities, Result), suggesting iterations between those horizontally aligned building blocks.

d. What elements can foster or hinder this virtuous circle?

The following Figures 91 and 92 display the challenges encountered in Design teams and projects presented per building block.

Figure 91 – Challenges faced by the Design teams

Design Capability-Building at MAIF

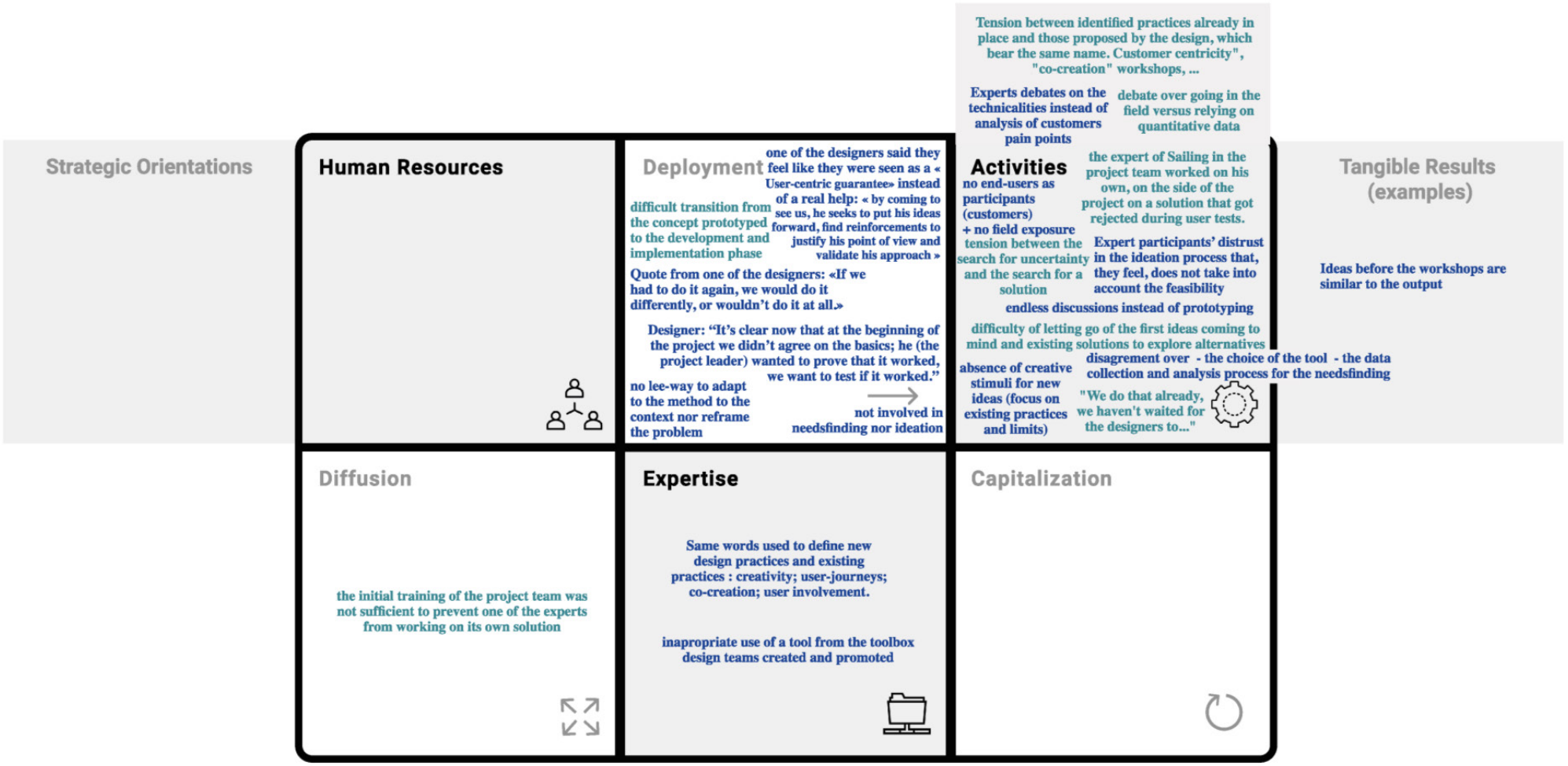
Static use of the model at the organizational level

Since Design	2020

Challenges faced by the I.T. design team
Challenges faced by the Digital Factory
Challenges faced by the Innovation team
Challenges faced by the Experience team
Challenges faced by all the design teams in the Digital department

Challenges faced by design teams

Figure 92 – Challenges faced in the two projects studied



Design Capability-Building at MAIF

Static use of the model at the organizational level

Since Design	2020

Challenges faced by design teams in PROJECTS

We started from the challenges (i.e., the tensions, the pain points, and irregularities in the virtuous circle dynamics) and turned them into six practical recommendations for Design capability building. We propose that developing in-house Design capabilities is about helping old dogs develop new tricks, finding designers adapted to the organization, crafting tools for a Design impact, gaining top management endorsement, preventing confusion over usages of the word Design as well as tools, and working on a direction instead of itineraries. In the following section, we present the six recommendations, illustrating the tensions it comes from and discussing them in light of existing contributions in the literature.

(1) Helping old dogs to develop new tricks

To borrow from the idiom saying that we cannot teach old dogs new tricks -which highlights the difficulty of losing one's habit for new practices or teach something new to someone with more experience in a field- we argue that Design is about "helping old dogs develop new tricks." It is about retraining employees in Design, making some existing practices evolve, and it overlaps with some teams' historical scopes messing with established ownerships.

This recommendation refers to the following tensions spotted in our data:

- In all of the four Design teams, the recruits are a mix of retrained employees and newly hired designers to ally a deep knowledge of the organization and deep knowledge in Design. However, helping retrained employees in developing a Design mindset is challenging.
- A frequent quote from the field was about "we didn't wait for designers to do that" this refers to the need to prove additional Design input compared to existing practices. It may explain the lack of buy-in of some teams that calls for continuous lobbying efforts.
- Also, some teams, whether in the activities or when a new team is created, felt like Design was meddling with the order in place and their backyard. Design teams have conflicting scopes with preexisting scopes. Design activities require transversality, which brings together people that were used to make a decision on their own with designers that may jeopardize this decision opposing counterargument anchored in user research results.

This mirrors two challenges Carlgren et al. (2016a) highlighted: the arduous acquisition of Design skills, which is in line with the first challenge, and the threat Design Thinking poses to the existing power dynamics comforts the third one. Actioning this recommendation could help overcome three common pitfalls Bjorklund et al. (2020) identified and that are in the protraction of the three challenges we outline: the struggle Design experts will face in the case of insufficient buy-in and understanding of the non-Design teams they have to work within cross-functional; the time-consuming uneasy imperative of getting other teams inboard with Design efforts; the risk of having middle managers impede efforts put into bringing down siloes that they have total control over.

(2) Adapting designers to the organizations

We argue that designers' role and focus in organizations call for specific knowledge and appetence on dealing with the organizational machinery when Design is integrated at a strategic level. Experience designers and Innovation designers working at MAIF have to work on strategy making and

strategy execution, processes, and management models. Those are new fields of Design problems (Buchanan, 2015). While such fields may involve working on symbols (words and images) and things (physical objects or digital products), it especially consists in building on actions and thoughts, in other words designing interactions in the context of services, activities, and processes or designing the integration of changes and novelties in systems, organizations, and environments. The integration of Design as a new capability in an organization is an example of the latter.

The inherent challenges are:

- The Innovation team and the Experience team managers expressed difficulties finding experienced external candidates to fill the in-house Design jobs to work on interaction and integration problems.
- The Experience team manager confides having to sell projects involving work on organizational processes to some of the designers in the team that were less attracted to those than "shiny projects" that she illustrated, citing the work on communication, office spaces, or physical objects. This tends to illustrate designers' divergent appetites for problem fields. The Innovation team manager also points to the difficulty of matching designers' interests (e.g., sustainability, tech, strategy) with the projects. He is convinced that it is a crucial success factor for Design activities.
- The last challenge related to this recommendation is maintaining and developing designers' competencies in the organizational context. The Design (team) managers feel like it is difficult, unlike other Expertise such as coding, to build and find proper training plans for continuous improvement. The attempt to support the Experience team's creativity through dedicated monthly sessions is one example of efforts put in to entertain designers' competencies and prevent Design methods and activities from too much adaptation and deformation to fit the corporate culture.

This supports scholars' encouragement of mixing Management and Design education (Buchanan, 2015; Findeli, 2001; Conley, 2007; Borja de Mozota, 2018; Dunne & Martin, 2006; Meyer, 2011).

(3) Planning for Design impact

This recommendation pertains to the Design team's choice, encouraging fewer projects involving full collaboration, from the start of the project, instead of contributions to many projects. To help the selection and adjustment of priorities, the Design teams need adequate tools (KPI) to measure the impact they produce.

This two-fold recommendation is connected with the following three challenges:

The search for dedicated KPI is a challenge that remains on the agenda of Design managers since creating the Design teams, especially for the Innovation team and the Experience team.

- The search for a balance between winning over internal clients through projects where deployment conditions are not optimal (partial contribution, wrong motivations for Design integration) and denying those projects. Quotes from designers in the "new claim management model" project related to that as for several projects in the Experience team portfolio. So is the digital factory's agreement to participate in the "Leisure Sailing" project, nonetheless the late mobilization. The trajectories show that non-optimal participation in a project can open ways for a new better-suited project.
- In line with the previous challenge mentioned, the I.T. Design team manager expressed the difficulty of prioritization, indicating that he was facing "too many subjects to run" in his roadmap. The Head of Strategy invited as of the first year of the Experience team existence to start "choosing the Experience team battles wisely." The number of projects in the portfolio corroborates this.

This is consistent with Meyer's (2011) advice against the risks of “Falling back on consultative, not collaborative, ways of working.” Also, she insists on the importance of pursuing "ambitious enough" projects and dismissing projects that are “too restrictive in scope” or “remedial,” i.e., focused on the solution instead of problems. Bjorklund et al. (2020), in their common pitfalls search, highlighted the compromise Design often has to make when “invited too late or offered too narrow and rigid scopes,” which is detrimental to Design efforts and inhibits efficiency.

(4) Top management necessary endorsement

Top management played an essential role as a sponsor for Design integration at MAIF (see figure 6 to 11), generally as an enabler through (i) resources allocation (Digital Factory, steps 2-3, 16; Experience team, steps 1-3, 10-12, 14, 20-23; Innovation team, steps 3, 14-15, 25, 18, 34,42; Claim management model project, step 2), (ii) the decision to change the organization, such as reorganizations (Digital Factory, steps 3, 12; Experience team, steps 12, 22; Innovation team, steps 1, 41; I.T. Design team, step 6) or changes in the project management model (Leisure Sailing Project, step 3; Digital Factory, steps 4, 10; Experience team, steps 6, 12, 16, 23; Innovation team, step 34), and (iii) strategic orientations (Experience team, steps 1-3, 10-11, 14, 20-22, Innovation team, steps; Leisure Sailing Project, step 1).

This is in the same line of thought as Meyer’s observation (2011) of the need for a full endorsement from top management for Design to be integrated, preferably from a bottom-up fashion.

(5) Prevent confusion over “Ordinary usages” and “Design usages" of the same terminology."

The organization may already be using tools, methods, or words that designers use too. However, the usages may be completely different. This needs to be dealt with to foster Design integration and prevent the “we’ve already been doing that” syndrome.

The two projects studied in this research show the usage of the same words but with different meanings in the activities:

- We outline the misuse or misappropriation of tools or Design activities to integrate Design into the project. In the “new claim management model” project, the project leader is asked to integrate Design. He defines a very tight brief for Design contribution. He asks for a specific predefined deliverable based on his understanding of one tool commonly used at MAIF, “the user journey.”
- About the preexisting practice: the co-creation workshop that has been taking place in the organization for years is not similar to the Design approach of co-creation. Co-creation has been defined by Fayard et al. (2017) as inherent to service designers' ethos. Co-creation workshops gather end-users as well as the various stakeholders to work on service. The workshop's facilitation is supported by material practices such as visualization and prototyping that are seen as essential. The same observation stands for the ideation activity that is not supported by any material practice and leads to disappointing results (i.e., equifinality of the inputs and the results from the ideation), up to rejections from participants.
- Another key example evidenced in both projects studied is the divergence in the understanding of user-centricity. For the Operation teams, it means having access to surveys and Indicators regarding service delivery quality. For the Marketing teams, it corresponds to knowing the customers they

gained from quantitative studies and reports on the market state. For designers, it does not designate the same practices for people in the Marketing teams and the designers. People in the Design teams determine user-centricity as exposure to the field.
- Practice regarding interactions with the customers: directly linked with the previous challenge, the users' voice, and User-centricity acceptations from one team to another depending on the data collected, the collection process, and how it is processed.

The distrust in the ideation process is built through novices' deceptive experiences, a hurdle Seidel and Fixson (2013) underlined in their study of Design thinking use by novice teams. This is also consonant with Meyer's (2011) affirmation that the lack of knowledge or commitment and misappropriation of Design approaches can be worse than not resorting to Design at all since it can backlash. She signals a common mistake in Design practice integration that consists of novices translation of Design method into a sequence of steps or arbitrary processes.

(6) Follow a direction, not a route

This recommendation stresses the need for actions to help non-designers deal with the discomfort or uncertainty that can be associated with a Design approach and reassure them on the output (will it be an App, a process, a product, something else ?). To describe this, we could use the analogy borrowed from exploratory qualitative methodological approach recommendations (Girin, 1989) of the sailor's ability to follow a direction, constantly adjusting the next step instead of a route. Building on this, we could say that this recommendation aims to establish the direction and build the map to help navigate instead of focusing on the route (i.e., a predefined itinerary with specific steps). The map would represent the construction of *"Design"* representation or understanding.

It emerges from those challenges:

- The tools that are part of the organization's Expertise in Design are emblematic of this. The Design system and the experience strategy provide guidelines for projects to ensure coherence regarding the Brand in the results from Design activities. Their use is necessary to consistency, nevertheless challenging as it questions the balance between the need for standard guidelines for Design and preserving enough leeway for people to produce novelty.
- Similarly, the same challenge applies to the quality of outputs for Design activities. The heterogeneity of practices pointed by non-designers struggling to grasp how designers work produce according to Design managers varying quality of productions. This is the challenge the new Design Ops role starting later this year will be about.
- In the "Leisure Sailing" project, the project team's initial training and the formalization of a project methodology evidencing the milestones proved not to be sufficiently reassuring to the Leisure Sailing expert in the project team that started working on its own solution in parallel of the project progress. This relates to the need to avoid the rush towards a solution to cling to and to let go of initial ideas to move past the obvious. Eventually, the project framing did not anticipate the need for UX designers and the digital Factory in the development phase of the project, suggesting difficulties regarding the ability to anticipate and assess the resources needed on a Design project.

The latter challenge corroborates Meyer's (2011) suggestion that the "biggest cultural challenge" in Design integration in organizations is to decrease non-designers discomfort with uncertainty and ambiguity. She quotes Roger Martin's (2005) distinction between "reliability" versus "validity," suggesting that business thinkers' priority is reliability, which means that they focus on producing a

consistent outcome. In contrast, Design thinkers' priority is the validity of the search for appropriateness or correctness of outcomes. The uncertainty regarding the outcome of Design project (no predefined solution to build, nor orientations) contrasts with the need for reliability.
Regarding the second challenge, it relates to pitfalls Bjorklund et al. (2020) identified: "Noting a lack of unity among designers and Design output due to dispersion, factions, and lack of shared practices and guidelines" and sometimes "Perceiving a lack of leadership and structural support for Design, unclarities in decision-making and mandate."

To sum up, we suggest six recommendations to work on for Design integration and development (see Table 18 next page). Partly in line with some of the challenges mainly identified by Meyer (2011), Carlgren (2016a), Wrigley et al. (2020), and Bjorklund et al. (2020), we complement their work with the identification of new challenges (such as the existence of various designers profile and a view toward the challenges of Design integration that entails but is not limited to Design thinking development in the organization since it also takes into account expert designers integration).

Table 18 - Six practical recommendations for Design capability-building derived from challenges identification at the three-level of analysis

Six recommendations	*Description*	*Related challenges (incl. Tensions, pain points, integration blockers)*
Helping old dog to develop new tricks	To borrow from the idiom highlights the difficulty of losing one's habit for new practices or teaching something new to someone with more experience in a field. We argue that Design is about retraining employees in Design, making some existing practices evolve, and it overlaps with some teams' historical scopes messing with established ownerships.	→ Helping retrained employees in developing a Design mindset is challenging. → The need to prove additional Design input compared to existing practices. → Lack of buy-in of some teams that calls for continuous lobbying efforts. → Design meddles with the order in place and existing teams' backyards
Adapting designers to the organizations	We argue designers' role and focus in organizations call for specific knowledge and appetence on dealing with the organizational machinery. In other words, in-house Designers have to master working on symbols and things as any designer does, but also designing and managing interactions, changes, or novelties implementation in systems, organizations, environments.	→ Difficulties finding experienced external candidates to fill the in-house Design jobs → The difficulty of matching designers' interests (e.g., sustainability, tech, strategy) with the projects, described as a critical success factor → Maintaining and developing designers' competencies in the organizational context is a challenge. Need to prevent Design methods and activities from too much adaptation and deformation to fit the corporate culture
Planning for Design impact	This recommendation pertains to the Design team's choice, encouraging fewer projects involving full collaboration, from the start of the project, instead of contributions to many projects. To help the selection and adjustment of priorities, the Design teams need adequate tools (KPI) to measure the impact they produce.	→ Search for dedicated KPI, on the agenda of Design managers since creating the Design teams → Search for a balance between winning over internal clients through projects and renounce to be part of projects ill-suited for Design. → The difficulty of prioritization, need to choose the team's battles wisely.
Top management necessary endorsement	It appears that top management played an essential role as a sponsor for Design integration at MAIF (see figure 84 to 89), sometimes as an enabler, others as a blocker, through (i) resources allocation, ii) the decision to change the organization, such as reorganizations and (iii) strategic orientations	→ Lack of dedicated resources impede the move from an individual to a collective level, and the impact → Rejection of some projects due to a lack of interest for exploration outside of strategic priorities → Inappropriate project management model → The lack of buy-in by some teams contradicted by the management call for Design integration creates Design integration opportunities
Prevent confusion over "Ordinary usages" and "Design usages" of the same terminology	The organization may already be using tools, methods, or words that designers use too. However, in effect, the usages may be completely different. This needs to be dealt with to foster Design integration and prevent the *"we've already been doing that"* syndrome.	→ Misuse or misappropriation of tools or Design activities to integrate Design into the project. → Design teams and existing teams use similar terminology to refer to distinct practices or methods. → In direct link with the previous challenge between two teams: The User voice and User-centricity acceptations depend on the data collected, the collection process, and how it is processed. → Helping retrained employees in developing a Design mindset is challenging
Follow a direction, not a route	The need for markers to help non-designers let go of certainty and deal with the discomfort or uncertainty. We borrow from Girin's (1989) metaphor or the sailor's ability to follow a direction, constantly adjusting the next step instead of a route, used to describe exploratory qualitative methodological approach. This recommendation relates to building the map to help the navigation instead of focusing on the itinerary. The map stands for the construction of "Design" representation or understanding.	→ The balance between the need for standard guidelines for Design and preserving enough leeway for people to produce novelty. → Heterogeneity of practices pointed by non-designers struggling to grasp how designers work produce according to Design managers varying quality of productions. → Need to avoid the rush towards a solution to cling to and let go of initial ideas to move past the obvious.

II. Defining In-house Design capability: A set of (dynamic) capabilities for service innovation

We have been focusing on Design Capability Building without defining such capability. Thus, one can wonder what an organization's Design capability corresponds to. In light of the data analysis from our case, exposed in the last part, we advance that companies may introduce Design in their organization, create a Design team, hire designers, and invest in Design activities, but yet fail to develop a Design capability. Design capability building hinges on a combination of changes that affect the organization's processes, resources, and structure. In this part, we propose a characterization of Design capability through the model and build-up on Design as a Dynamic Capability.

A. In-house Design capabilities

In the literature review (Chapter 2), we depicted various acceptations of Design. In the data (Chapter 4), we also pictured several understandings of Design coexisting in the organization studied. Thanks to the model, we offer a characterization of Design capabilities in an organization that explains this diversity of understandings. We propose that Design is a set of seven Dynamic Capabilities of two different orders: three are second-order capabilities, the remaining four are third-order capabilities.

1. In-house Design capability is a set of Dynamic Capabilities

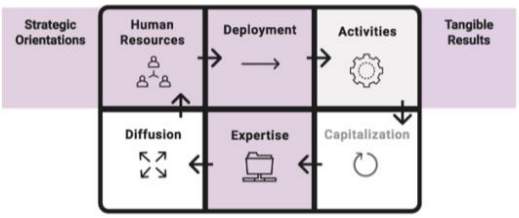
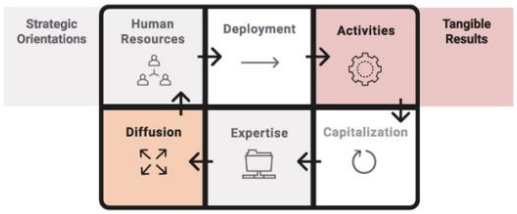
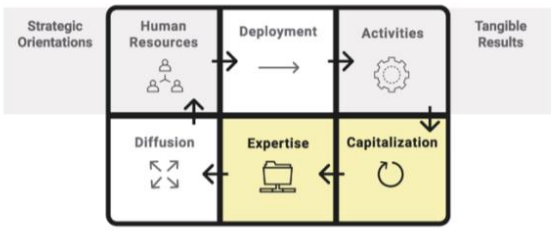
In this section, we try to answer the following question: what do we mean by in-house Design capability? Based on the chronological analysis of Design development at MAIF, we argue that the development of Design capabilities is about moving Design Resources, Activities, and Expertise, i.e., the three key components of a capability, from a local level (one-off contribution, individual action) to a collective organizational level (recurrent). In other words, Design becomes a capability when it moves from siloed or individuals' scarce use in projects or experimentations (e.g., the Head of Innovation experimenting Design in experiments, or one-off designers intervention in I.T. projects) to a collection of individuals sharing similar production methods and expertise. This is evidenced at MAIF with the adoption of Design method as a recurring practice in projects simultaneously in the Digital Factory team for the Digital channel and in the Innovation team for diversification purposes, followed by dedicated resources allocated to Design that led to hiring designers.

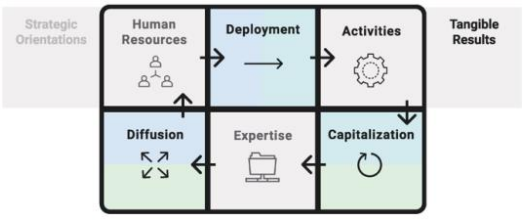
Based on the dynamic analysis of the project, the teams, and the organization, we suggest the following seven capabilities forming an organization's Design capability. We separate the seven Design capabilities in two: the 'Operations' and the 'Building on Operations.'

Design integration is primarily centered on the development of new products, services, systems, strategies. Those tangible Results come from Design practitioners' activities we label as "Designing." On top of acting as a designer in a project and thus "Designing," designers can work within projects as team coaches contributing to "Spreading Design." "Designing" and "Spreading Design" are at the core of Design Operations at the organization level. As with any activity, resource allocation, performance measurement, projects prioritization or decision-making, is about management that we label as "Managing Design" because it is about Design activities and resources.
Those three capabilities are essential in any organization operating Design: Design providers, Design-intensive, and non-Design intensive organizations alike.

In complement to those three, we identified two additional capabilities that are about "Building Design (expertise through capitalization)" and "Transforming (the organization) through Design." The latter encompasses: "Enhancing Design," "Advocating for Design," and "Anchoring in-house Design." We argue that without these four capabilities, there is no development of Design in the organization. Those ensure the constant renewal of Design Operations capabilities (Designing, Spreading Design, and Managing). Design teams renew their tools and methods in accordance with the projects' context, and project after project adjusting from success and failures (unlike static toolkit systematically applied); this capitalization grows the expertise. The Design teams also adjust the way they communicate Design value to other teams (unlike predefined dashboard updates), taking into account new results and learnings from recent projects. This is what we label as "Building Design expertise through capitalization." Through the analysis of Design integration challenges, we showed the need for sustained efforts in training and communication to provide a "navigation map," a direction but not a route, and "teaching old dog new tricks." The former refers to the capability of "Advocating for Design" that renews the way Design is promoted and integrated into projects—the latter points to the "Anchoring in-house Design" capability that renews Design stakeholders' competence. Eventually, the organization is transformed through Design; for instance, with the adoption of a Design method conflicting with the V-cycle projects, an increased Design adoption calls for specific changes in the project management structure. This change needs to be sustained and the conditions for Design integration secured in time. We labeled it "Enhancing Design." Hence, Design relies on perpetual incremental changes that we materialize in the virtuous circle dynamic.
From the propositions and the model, we suggest that an organization's Design capability is a set of seven Dynamic Capabilities we display in the following Table 19.

Table 19 - Matrix of Design capabilities in the organization

<table>
<tr><th></th><th colspan="2">Design use in the organization</th><th>Management: conditions for Design</th></tr>
<tr><td rowspan="2">Design Operations</td><td>Designing
(Activities + Results)
Practice Design in a project
▪ At the project level</td><td>Spreading Design
(Diffusion)
Explain Design to non-designers in a project or dedicated events
▪ At the project level
▪ At the organizational level</td><td rowspan="2">Managing Design
(Strategic Orientations, Human Resources, Deployment, Results, Expertise)
Defining strategic orientation, securing resources, and organizing for their proper allocation, accountability for the results.
Structuring and managing the Design expertise through the Design organization building.
▪ At the team level
▪ At the organizational level
▪
 
</td></tr>
<tr><td colspan="2">designers’ dual role
 
</td></tr>
<tr><td>Building on the operations</td><td colspan="2">Building Design (expertise through capitalization)
(Capitalization + Expertise)
Contributing to the co-constructing of Design expertise (shaping of Design expertise through experience)
→ Adaptation of the practice, the methodology, the tools, project after project
▪ At the individual level
▪ At the project level
▪ At the team level
 
</td><td><u>Transforming through Design (the organization)</u>

Enhancing Design
(Deployment + Capitalization)
→ Change of the project management model
Advocating for Design
(Diffusion + Deployment)
→ Changes in the project portfolio management, in the strategy, in the organization structure
Anchoring in-house Design
(Capitalization + Diffusion of expertise)
→ cultural changes (ex: the ability to test & learn)
▪ At the organizational level
 
</td></tr>
</table>

2. Specificities of Design capability as a Dynamic Capability in the case of Service Innovation

We proposed that Design is a set of capabilities of two different orders: capabilities related to Design operations and others related to building on Design operations. We argue that the formers are second-order capabilities, while the latter are third or higher-order ones (Teece et al., 1997; Birkinshaw et al., 2016; King and Tucci, 2002; Danneels, 2008; Collis, 1994; Winter, 2003).

Indeed, Design operation (second-order) contributes to renewing the organization's operational capabilities (first-order). The "Design Operations" corresponds at MAIF to a configuration of resources that enables the firm to Design new products (either insurance or digital products such as the App developed as a new touchpoint and relying on a new technical infrastructure), new processes (it was the aim of the "new claim management model" project) or new customer competence through the exploration of new markets (the new service produced in the "Leisure Sailing" Project for a new target community: boaters is an example of the latter). In that sense, it corresponds to the ability to build new first-order competence. Thus, "Design Operations" is a second-order capability, i.e., a Dynamic Capability that contributes to the three first-order firm competence renewal: competence, technology, and business.

We suggest that in the specific case of service innovation, the two first-order capabilities[19] defined by Danneels (2002) (customer and technological) in the case of product innovation in the industrial context, a third capability is required (i.e., the business one). We suggest that based on the six variables[20] characterization of a service proposed by Lenfle (2008). Thus, the three first-order capabilities would be: (1) the customer competence, including the knowledge of the current community of customers (policyholders), customer goodwill, the reputation of the brand, and the access to customers for communication channels, in other words, the "target clientele" and "front-office process"; (2) the technological competence, including the maintenance and exploitation of the support product and the back-office process, for instance, the exploitation of the I.T. infrastructure to process the customer information created in the industrialization phase ; (3) the business competence including the exploitation of the current "economic model" and the "contracts," which is at the core of the insurance business, i.e., the ability to manage financial assets and the exploitation of the existing insurance products (actuarial work).

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[19], Capabilities and competence are used indistinctly.

[20] The six variables of a service (Lenfle, 2008): the "target clientele" that relates to the customer; the "support product" that relates to the equipment; the "contract," i.e., the legal dimension of the service at the core of the insurance business; the "front-office process," i.e., the interactions with the customers; the "back-office process," i.e., the support activities ensuring the service delivery; and last, the "economic model" that is the core expertise of a financial service company).

Building on Design Operations capabilities (third or higher-order) ensures the constant renewal of Design Operations capabilities.

Thus, Design is a set of Dynamic Capabilities of second and third/higher order.

3. Dual role of designers and three-fold contributions

The data evidence a dual role of designers (to train and coach project teams or produce designs) and three types of contribution (individual and company Design expertise development, Design activities focused on continuous improvement or innovation). The contribution corresponds to the impact of what designers do. Whereas they can make several contributions in a single project, a clear choice should be made between the two possible roles: coaching/training or producing. The roles indicate the top priority for Design in the project: either competence and knowledge transfer through teaching -in that case, designers help novice teams to Design by themselves - or targeting efficiency and high-quality and fast results – in that case, designers produce designs. We synthesize this into the following matrix (Table 20):

Table 20 - Matrix of designers' dual roles and contributions

Contribution (vertical) / Role (horizontal)	**Coach**	**Produce**
Contribute to the Design expertise building	Wide expertise development	Deep expertise development
Creating change (continuous improvement)	Help project members for continuous improvement	Produce or drive continuous improvement
Creating something new	Help project members to innovate	Produce or drive innovation

Motivations for hiring an in-house designer in the Innovation team focused mainly on the ability to accompany/coach project teams with the workshops, facilitation, or prototyping activities. In the digital factory, senior designers were hired to accompany the expertise development and retrain members. However, as underlined in the teams' activities, both objectives (accompanying and producing) are equally important. This means that in-house designers should be able to assume both roles. Design integration combines retrained team members into designers with a deep knowledge of the organization but new to Design with expert designers new to the organization and deep Design knowledge. The mobilization of an external agency to help the newly-hired designer with the accompaniment of the project team in the Leisure Sailing project (quote from the designer: *"I felt I was not strong enough to carry out the project and the project team alone"* (i.e., being the only designer on the project).") may suggest a call for specific training or coaching skills beyond the capacity to conduct Design activities learned in Design schools.

B. Design without designers?

We identified two types of Design practitioners in addition to designers: the silent designers, the Design-thinkers. Designers cover the ones that followed an initial training and the ones with late retraining in Design. When speaking about Design in organizations, what do we speak about? Is the presence of designers and Design teams in the organization sufficient for designing? May an organization host Design practices without having any designers? In this part, we try to address those questions focusing on the Design practitioners regarding Design(ing), arguing that having designers does not mean designing and that it is possible to be designing without designers.

1. Having designers does not mean designing.

In response to the frustration expressed by the designers about the failed participation in the new claim management model project, the Head of Strategy stated in a yearly appraisal of the Experience team development that the mere presence of members of the team in a project was a win and having designers in a project team was "better than nothing," but is it? The "new claim management model" project demonstrated that professional designers in a project team are not sufficient to consider that Design is integrated and allowed Design to happen. If the project structure and management do not qualify for Design activities to be carried out, designers cannot Design. Instead of demonstrating their use, the failed collaboration may reinforce the project leader's skepticism on Design and lead to rejection.

The deployment of Design resources is central to the problem of having designers unable to Design. We identified in the data, especially through the Experience team portfolio analysis, four situations in which designers were present in projects but unable to Design.

In the project portfolio, the share of projects dedicated to helping non-designers think like designers seems substantial (32% of the Experience team projects in 2017, 32% in 2018, 21% in 2019). The number of projects carried out from start to finish in collaboration with other departments is scarce (10, including five office space redesign projects). The total number of projects (147) carried out in the Experience team has betrayed this phenomenon in the past three years. We show the tension between helping others to do (coaching) and doing (producing) encountered by innovation and the Experience teams that we mentioned before; another is about contributing instead of collaborating; designers conduct only part of the Design approach. This relates to the second situation, one-off contributions (34% of the Experience team projects in 2017, 24% in 2018, 15% in 2019), where designers are called for one of their Design skills. They can be asked to carry out a single activity instead of activities (often about user-research alone, ideation) or restrained by a too tight and narrowed brief. Then, because of the holistic dimension fundamental in the Design attitude, the one-off intervention is perceived as frustrating and sometimes counterproductive as in the "new claim management model" project. Third,

one type of Design one-off contribution is particularly detrimental; the experience Design team calls it the “UX stamp.” A project team asks for designers' contributions once the project enters the experimentation phase. The team produced a prototype they are looking to validate and perfect with a group of beta-testers. They ask designers to join the team for a few meetings to validate the solution or improve it when beta-testers are already disapproving the new solution. Then the project team mentions the Experience team's participation in a pledge that the “user voice” has been taken into account. This happened, for instance, in a project commissioned by the Purchasing department, where the project team (without designers) spent months working on finding an alternative to the digital platform they used for procurement activities. The Design team was called in for help once the project team faced beta-testers discontentment in the pilot experiment. The brief to the Design team mentioned that alternatives to the solution developed (the digital platform) could not be explored. The Design team agreed to work on the project because of the opportunity to work with a new internal client. In a survey conducted on over a thousand employees, when asked what the Design team should be working on, this appeared as the most frequent pain point quoted. However, the conditions were not favorable to the Design approach. Fourth, some junior designers participated in a project focusing on a problem field that they are not familiar with and struggled in finding a methodological approach and identifying Design tools to proceed. In that case, they cannot take the methodological lead in support of the project leader or project sponsor.

In this regard, we conclude that “having designers” is not enough to Design and argue that Design leaders have to work on the expectations of Design partners as part of the “Advocating for Design” capability-building and the ambition for Design as part of the “Enhancing Design” capability-building.

Reciprocally, we can argue that professional designers' absence is not an indicator of the absence of Design activities.

2. Designing without designers

Gorb and Dumas (1987), in their study, suggest that regardless of the existence of formal Design practice in the organization, people not acknowledging their jobs as involving Design were conducting Design activities, nonetheless. They define Design as *“a course of action for the development of an artifact”* and silent Design as *“Design by people who are not designers and are not aware that they are participating in Design activity.”* We interrogated in the first chapter Design newness regarding the organization. The MAIF founders' approach and the Head of Innovation's work in the emergence phase of Design seem to correspond to Design activities.

We suggest that Design is not entirely new to the organization, assimilating the founders and the Head of Innovation to silent designers. However, the Design capability is new to the organization. The

difference lies in the construction of the Design expertise: building a Design capability contributes to the development of Design expertise at the organization level, while previous Design activities rely on the individual level. Moving to an organizational level has direct implications on the organization's structure and processes.

When non-designers look for a *"course of action for the development of an artifact*" or a creative approach to solve a problem, they may turn to Design-thinking. In that case, they willingly participate in Design activities. Such approach at MAIF, before professional designers involvement, led to two distinct outcomes: first, Design thinkers produce changes on existing processes and quick-wins applicable right at the end of a short-term process (e.g., the first experiments of the Head of Innovation or the or the result produced by the team in the Operations division in charge of continuous improvement); second, Design thinkers turned to experts to help them cope with difficulties they faced in the activities such as facilitating a multidisciplinary workshop or prototyping, or user testing. For instance, the Head of Innovation experiment on "dependency" convinced the Head of Innovation that he needed a designer to facilitate and prototype (see Chapter 4, section I, part A-1). Another example would be one of the projects I participated in; the Operations division in charge of continuous improvement spent weeks redesigning the letters template for correspondence with customers. Moving to the prototyping phase, they asked the Communication team for help; once the prototypes were built, the Communication department asked the experience Design team to organize the user tests they did not know how to deal with. The experts they turned to at MAIF were designers.

Therefore, we identify three designing situations without designers in an organization: (1) Design happening at the individual level with no impact on the organization. This is the case for silent designers, (2) Design thinking leading to incremental changes on existing processes used for continuous improvement activities in the organization, (3) Design thinking as a training tool to spread a Design mindset, and lead teams to call for designers.

To sum up, we argue that Design thinking is helpful for novices to experiment with Design and designers to explain their practice. It can be used for continuous improvement or a springboard to professional retraining. However, the MAIF case shows that Design thinking without a designer is limited by "technical" difficulties practitioners face.

C. Discussion

In this part, we further discuss our contribution to a definition of in-house Design capabilities regarding existing contributions about Design and Innovation Management to highlight our propositions that enhance the understanding of Design integration and development within organizations that are not used to it.

1. Achieving the conditions for Design integration: Preparing for Design

Wrigley et al. (2020), in a recent contribution, outline four organizational conditions to integrate Design thinking: the need for a "strategic Vision—the organization's long-term strategic goals and intent," the need for dedicated "Facilities—the physical spaces and resources that are dedicated to Design activities," the need for a "Cultural Capital—the understanding, knowledge, and capability of the organization's workforce in relation to Design" and the need for "Directives—mandates that call for the use of Design and hold the organization's staff accountable for using Design."

We offer insights regarding the capabilities needed to build those conditions for Design integration, suggesting that the 'strategic vision,' the 'facilities,' and 'directives' relate to 'Managing Design.' The 'cultural capital' can be achieved through 'Advocating for Design' and 'Anchoring in-house Design.' The latter ensures that the knowledge is not dependent on individuals who may leave at any time, while the first one is building and understanding projects that encourage Design mobilization. We argue that one additional condition should be considered essential to Design integration and is built through the capability of Enhancing Design which encompasses the evolution of the project management model to ease Design activities in projects.

2. Transforming (the organization) through Design

The capabilities clustered in what we labeled as "Transforming (the organization) through Design" (Table 19) highlight the changes Design induces in the organization to operate. In the MAIF case, it impacted the teams' structures and project management model (e.g., in the Digital Factory, in the Leisure Sailing Project) respectively the Human Resources and the resources Deployment, but also the Activities through the adoption of new methods, new mindsets including in the interactions with customers (e.g., the tensions in the Leisure Sailing project between the Marketing team and Design team views on customer knowledge). Capitalizing on experiments failure or difficulties and successes, the Head of Innovation adjusted its strategy and projects roadmap definition; similarly, the Leisure Sailing project for the Innovation and the new Claim management model project for the Experience team led to a redefinition of the project prioritization process and the conditions for those Design teams' resources Deployment.

This echoes Börjesson and Elmquist's (2012) defense of the need for companies to "question the assumptions" underlying their organizational processes and "revisit the values" upon which NPD activities are built. They also highlighted the critical issue of Knowledge generation as part of innovation capabilities building, embodied in our model in the "Transforming (the organization) through Design" capabilities.

In a framework, they describe innovation capabilities as based on four components: Strategy, Resources, Processes, and Mindset. Carlgren et al. (2014) match these components to the frameworks of Lawson and Samson (2011) and O'Connor (2008) frameworks, showing convergence. We suggest our model corroborates and enrich their view offering another interpretation, as shown in the following:

Table 21 - Comparison between Carlgren et al. (2014, 2016b) three frameworks combined with our model

	Carlgren et al. (2014, 2016b) Innovation capabilities framework components			
Our model building blocks	Strategy	Resources	Processes	Mindset
Strategic Orientations	Vision, intent, goals strategies, objectives			
Human Resources		Organization structure Competence base Design champions Design partners	H.R. repository	Corporate culture, values, and norms
Deployment		Resource allocations	Project structure and management model Decision-making structure	Creative team rituals
Activities		Technology	Ways of working	Attitudes, Approach in activities,
Tangible Results				
Capitalization			Team Rituals dedicated to training, peer-to-peer exchanges, reward system	Reflective practice Learning orientation
Expertise				Knowledge-sharing
Diffusion			Communication	Transparency

3. Design capabilities, a set of second and third-order capabilities

Building Design expertise takes time, and it is crucial to balance the time dedicated by the designers to the three roles and their three-fold contributions.

Bjorklund et al. (2020) alert on the danger for designers to spend too much time educating others on Design, which leaves no time to Design themselves. Several authors suggested two roles for in-house designers (Junginger, 2015; Bjorklund et al., 2020). We supplement this view of designers' two roles specifying it with the three-fold contributions: the producing role encompasses helping project members or producing, both (i) continuous improvement and (ii) novelty, and the (iii) accompanying role corresponds to contributing to the Design expertise building at the organizational level, both the deep expertise building through the a posteriori analysis of how they produce, and accompanying novices on Design (i.e., building wide expertise). It is about constantly renewing Design practice. It echoes Schön's

(1990) view of designers as reflective practitioners relying on their experience. This view on Design expertise Building across time is in line with Ben Mahmoud-Jouini et al. (2019), who stated that "successful Design thinking adoption requires intentional learning and adaptation of methods, tools, and mindsets over time."

We demonstrated that "Design Operations" is a second-order competence as it contributes to the renewal of first-order competencies (Danneels, 2002, 2008). This interrogates the nature of the other capabilities that we classify as "Building on Design Operations" capabilities. Indeed, Danneels identified three types of competencies: the first-order competence (customer and technological competencies, to which we added the technical competence), the integrative competence (the ability to combine first-order competence), and the second-order competence (the ability to build new first-order competence). We argue that "Building on Design Operation" capabilities —i.e., Design Operations renewal through the firm's transformation and learning in action— belongs to a higher-order other than the ones proposed by Danneels. Indeed, Danneels (2011) pointed that developing new capabilities is not a one-time effort but a continuous one.

"Building on Design Operation" means reconfiguring resources at the Design Organizational level and the organizational level. We propose that its continuous renewal sustains second-order competence. We could link this to Design being a reflective practice (Schön, 1987).

The suggestion of the existence of higher-order competence, in addition to the second-order, in the case of In-house Design capabilities, corroborates Collis's (1994) work that Winter (2003) debated.

4. Steps for Design capabilities building

The virtuous circle model we propose complement the work of Lockwood (2009), who identified seven steps to integrate Design into the corporate culture: (1) determining cultural norms and drivers, (2) determining how Design can support culture and business objectives, (3) building awareness of the full breadth and influence of Design, (4) developing appropriate Design organization and operations, (5) integrating Design processes within corporate business policy and practice, (6) measure the value gained by Design, (7) train and empower others in Design thinking methods. There are some similarities between our contributions: Steps 1, 2, 4, 6 are what we designate as "Managing Design (Table 19), steps 3 and 7 are about "Spreading Design," and step 5 is about "Transforming the organization through Design." We argue that Lockwood's (2009) contribution lacks "Building Design expertise through capitalization" that constitutes MAIF a critical part of Design teams' activities.

An earlier contribution from Jevnaker (2000) delineated six capabilities to define Design capability. We stand by this view of breaking down Design capability into a set of capabilities, consistent with the fact that building such capability takes time and a broad scope of activities as Jevnaker stated:

"Design-capable organizations are not built overnight. Managers and designers engage in many organizing activities over time and space that enable them to foster constructive Design developments in firms."

However, as Lockwood's contribution, the six capabilities help understand Design operations better but miss the activities related to "Building on Design Operations." We suggest (1) "Accessing and starting the new approach," (2) "Connecting and coordinating Design/business," (5) "Strategic anchoring and stretching," and (6) "Capturing and protecting Design assets and values" are part of the "Managing Design" scope, while (3) Communicating Design-fostering learning is about "Spreading Design," and (4) "Creative absorbing, supporting, testing, and interfering" fall under the core capability of "Designing."

As such, we argue that our contribution extends the work of Lockwood (2008) and Jevnaker (2000).

The following table offers a synthetical view of the propositions suggested and discussed, up to this point:

Table 22 - Summary table of the discussion section displaying our theoretical contributions

	Our Propositions	Discussion / Theoretical contributions
1	A Dynamic Capability-building model comprises eight building blocks: three components interrelated by three mechanisms and complemented by trigger and results.	Existing Design management frameworks (Lockwood, 2009; Borja de Mozota, 2019, Cooper et al., 2011; Lewis et al., 2009), Existing innovation capability framework (Carlgren et al. 2016b; Börjesson and Elmquist; 2012)
2	A virtuous circle dynamic. (reinforcement dimension)	Wrigley et al. (2020) "cultural capital" as the foundation of the dynamic along with Björklund et al. (2020) combination of wide and deep expertise Junginger (2015) "organizational legacy."
3	About Design-capabilities-building: Six practical recommendations for Design capability-building derived from the challenges observed. The definition of the right conditions for Design integration. A capability is about moving practice from a local to an organizational level; it takes time.	Carlgren et al. (2016a) challenges for DT integration; Bjorklund et al. (2020) pitfall; (Buchanan, 2015) new fields of problems identification; mixed Management and Design education (Buchanan, 2015; Findeli, 2001; Conley, 2007; Borja de Mozota, 2018; Dunne & Martin, 2006; Meyer 2011); Meyer's (2011) advice on embedding Design in organizations; (Seidel and Fixson, 2013) risks of early novices' deceptive experiences detrimental to DT integration; (Martin, 2005) distinction between "reliability" versus "validity." Wrigley et al. (2020) four organizational conditions for Design integration; Börjesson and Elmquist (2012) work on innovation capability building Ben Mahmoud-Jouini et al. (2019) adoption of Design Thinking
5	An organization's Design capability is a set of seven Design capabilities of two types: Operations (Designing, Spreading, Managing) and Building on the Operations (Building and Transforming)	Jevnaker (2000) set of six capabilities and Lockwood (2009) seven steps behind Design (Operations) capability building
6	The two types of Design capabilities correspond to two different orders of Dynamic Capabilities: second and higher-order. Service companies count three first-order capabilities: the customer, the technological, the business	Collis's (1994) and Winter's (2003) debate over higher than second-order capabilities Schön's (1990) view of Design as a reflective practice. Based on Danneels' (2002) suggestion of firms' two first-order competence and Lenfle's (2008) service innovation characterization through six variables.
7	In-house Designers assume a dual role and three-fold contributions	Bjorklund et al. (2020) alert on time spent educating others on Design; two roles for in-house designers (Junginger, 2015; Bjorklund et al., 2020)

III. The Design capability-building model: an assessment tool

In the following, we will pursue the development of our Design capability building model by exploring its usage to investigate Design integration in other organizations. We will present the organizations selected that integrated Design at a strategic level and worked on Design capabilities development. Then, we will show the results of a cross companies analysis of the model application, based on interviews and data collected. Even though it is exploratory and based on a small sample, this usage of the model confirms its value as a Design capability model. It reveals interesting potential new uses such as a Design assessment tool that we will detail at the end of this section.

A. Four companies in the midst of Design-capability building

This additional data collection is based on interviews with Design leaders in four companies. We aimed to test the model in contexts unrelated to MAIF, exploring its use and value to describe Design capabilities in an organization.

1. The four companies selected

We chose companies from a mix of the primary, secondary and tertiary sectors, of varying sizes, from a few hundred to more than one hundred fifty thousand employees, with various dominant functions, from engineering culture to sales mindset or civil service. Table 23 shows the companies characteristics in comparison to our main case (MAIF):

Table 23 – Overview of companies and interviewees with tested our model with

Company	Energy utility (E)	Commercial carrier (C)	Technological firm (T)	Public Agency (P)	MAIF
Sector/industry	Primary sector, Energy/ Energy	Tertiary sector, Services/ Transportation	Secondary sector, Industrial products/ Healthcare equipment	Tertiary sector, Services / Public administration	Tertiary sector, Services / Insurance
Dominant function	Engineering	Sales	Engineering	Civil service	Actuarial science
Size (employee number)	150,000+	80,000+	50,000+	100+	8000+
Interviewee	Head of Design	Lead Design strategist	Head of Design	Lead Design catalyst	
(First Design discovery/use) Design emergence	(1970's) 2000	(2007) 2017	(1970's) 1990	(2015) 2019	(2012) 2015
Design maturity according to the Design ladder	4th level: strategic level	4th level: strategic level	4th level: strategic level	4th level: strategic level	4th level: strategic level

Despite being at the 4th level of the Danish Design ladder, these firms represent a variety of profiles regarding Design integration and development following the four phases we have proposed to analyze the case of MAIF: discovery, emergence, consolidation and institutionalization. This is salient in the 6th line of Table 23.

In E and T, Design was used as punctual contributions in innovation projects mainly for aesthetical purposes before the decision of Design integration. Through in-house Design capability building, those firms moved Design from the first level of the Design ladder to the fourth. In C and P, where the decision to integrate Design is more recent, Design emergence has been driven by the digital transformation.

The four organizations, regardless of their sector or industry, use Design to improve services or experiences (the outer scope of service Design), in addition to Product Design and UX/UI Design.

2. Data collection

I conducted 90-minute semi-structured interviews with the persons responsible for Design development in each company. The interviews were divided into four parts: to start, the interviewees were asked to present themselves briefly, their company, and as extensively as possible the Design in their organization; then I showed the model and asked for their feedback. We focused on each building block to complement the parts missing from the initial spontaneous depiction of Design; eventually, the interview ended on an exchange on the model and its use and a free-speech time.

I also captured data on companies from material found online, such as toolkits and guidelines, press articles, reports.

The interviews have been conducted online through video conference, recorded, and transcribed. In support of the exchange, I used an online whiteboard tool to reveal the model and then fill it live during the discussion. Besides being transparent with my note-taking, allowing the interviewees to see and react to the key elements, I grasped from their discourses, the display of the filled model at the end of the interview triggered interesting last-minute additions and reactions. For instance, one of the interviewees seemed amazed by the description she had provided through the model and asked for the data; another noted that he had forgotten to talk about key means deployed that fell under the building block and felt the need to complement.

Before presenting the model, I asked the interviewees to give me an outlook on Design in their company, with a complete description of how it manifests. Figures 93 to 96 show the key clusters I formed based on the information interviewees gave as initial descriptions. The themes mentioned and that I have clustered during the interview on the collaborative tool shared with the interviewees covered the Design position in the organization, the internalization and externalization of designers, the Design focus and results, the fourth level of the Design ladder as their maturity level, elements on the firm's environmental context, Design understanding difficulty and efforts on awareness-raising.

Figure 93 - Initial description of Design in the Public Agency

Figure 94 - Initial description of Design in the Technological firm

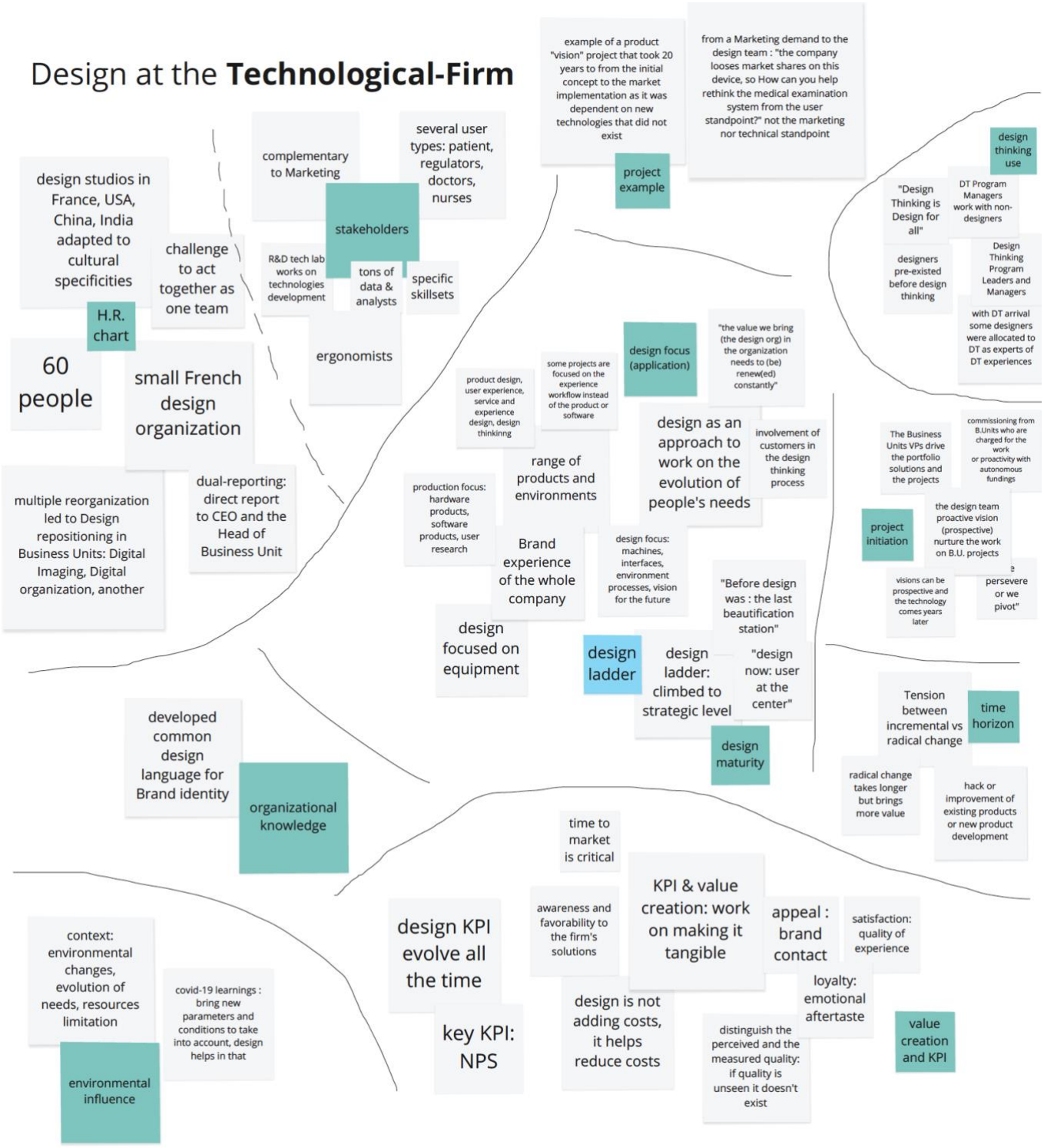


Figure 95 - Initial description of Design in the Commercial carrier company

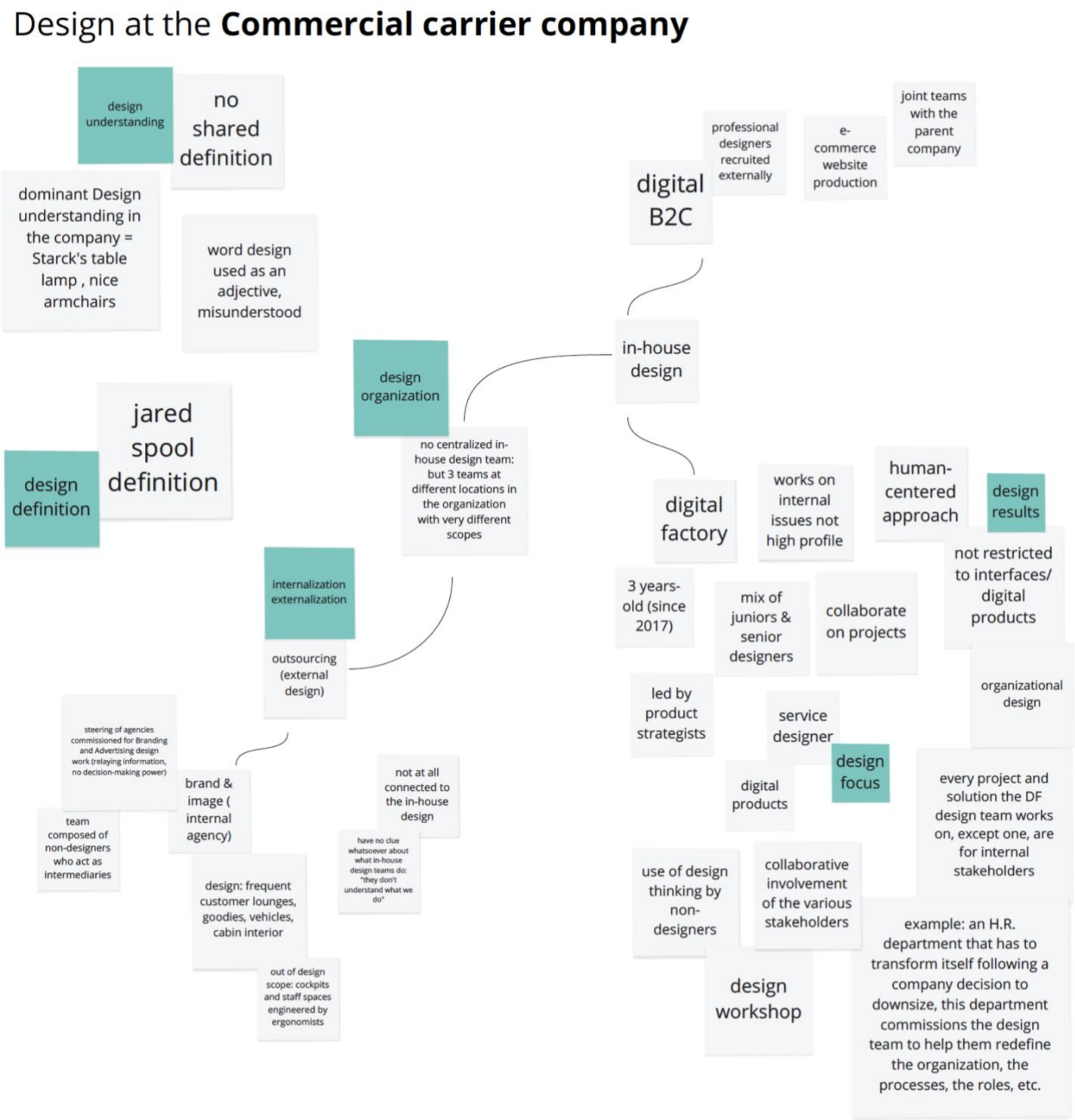


Figure 96 - Initial description of Design in the Energy utility company

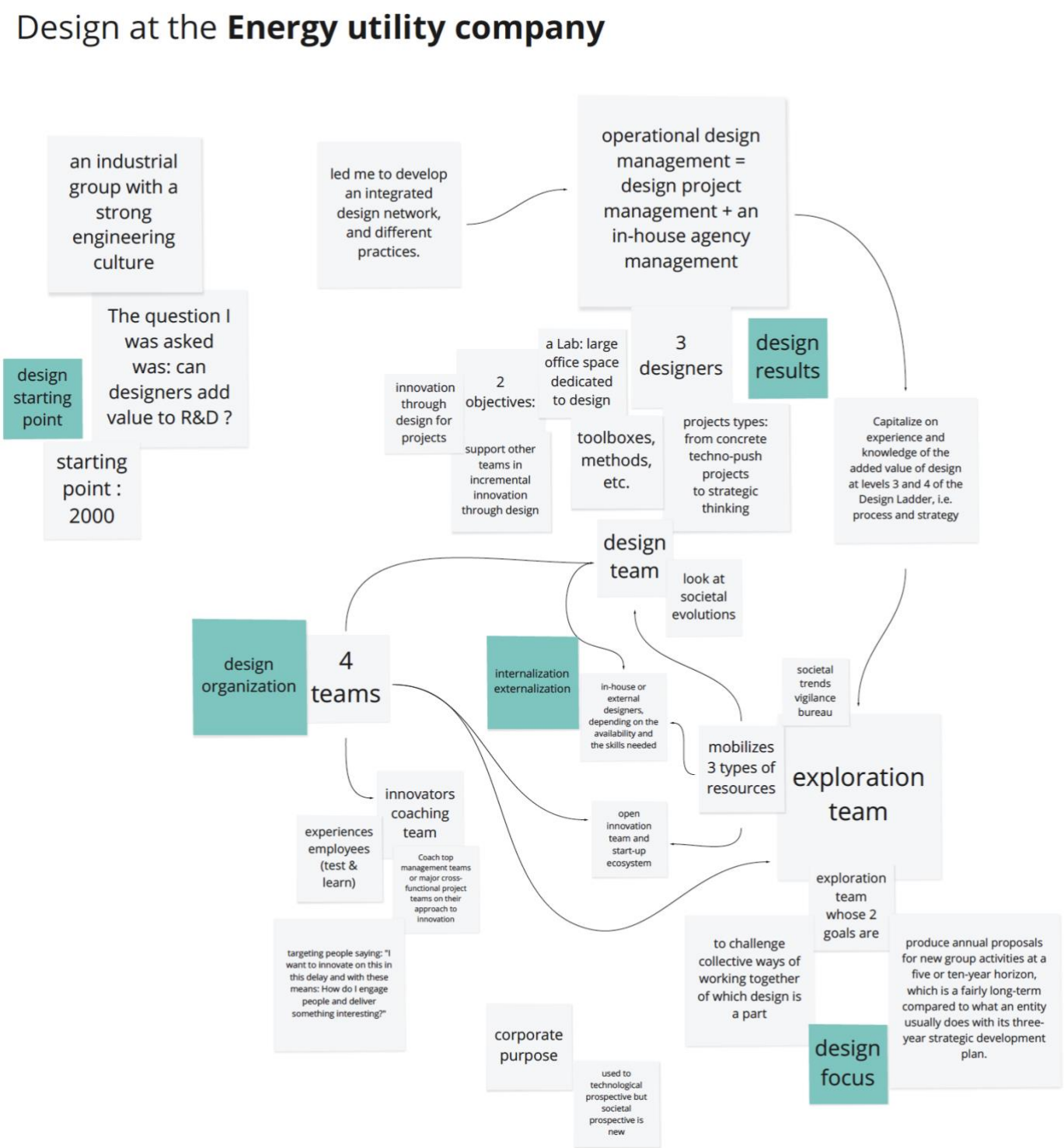


Figure 97 - Comparison of the descriptions of Strategic Orientations characteristics in the four companies

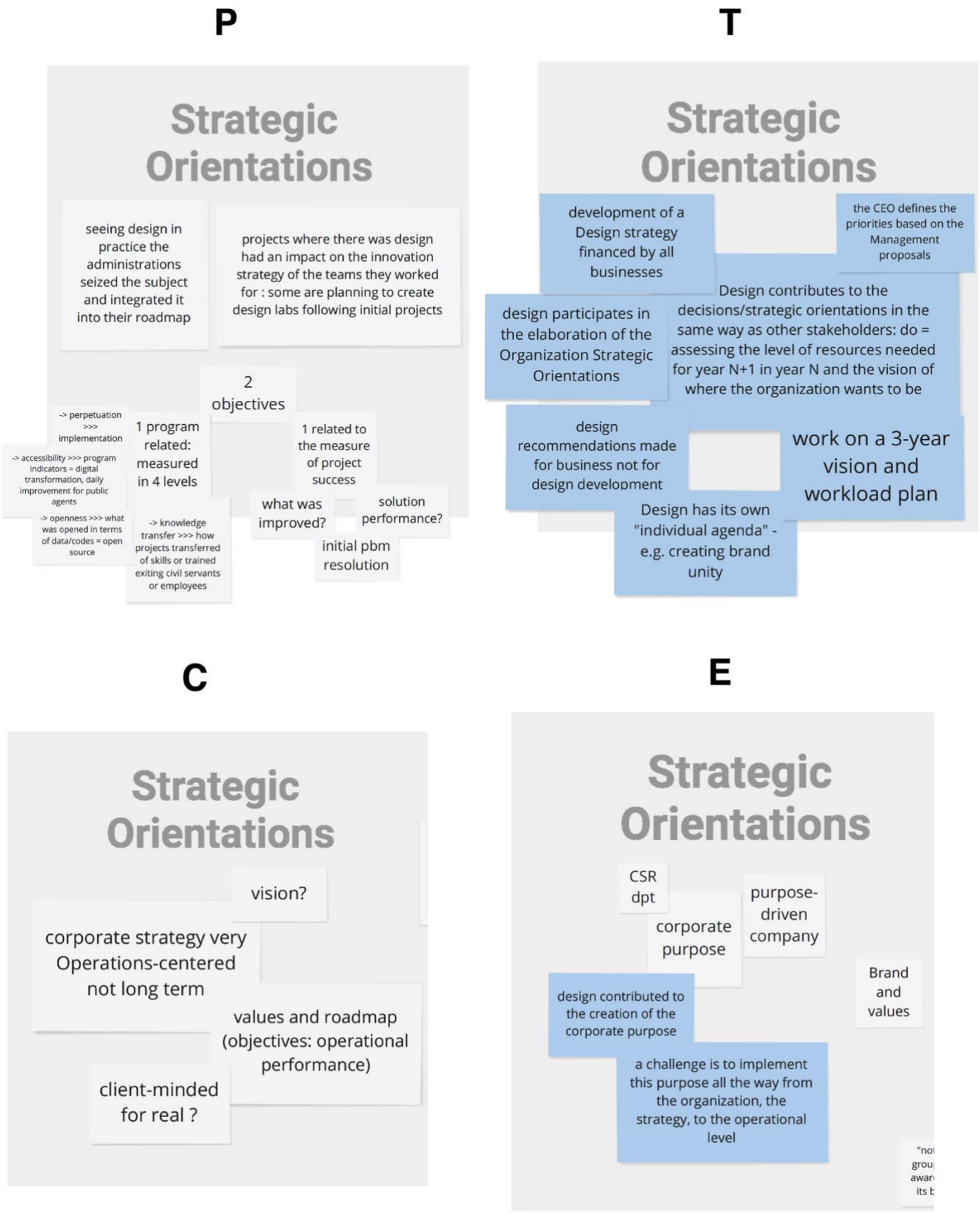


Figure 98 - Comparison of the descriptions of Human Resources characteristics in the four companies

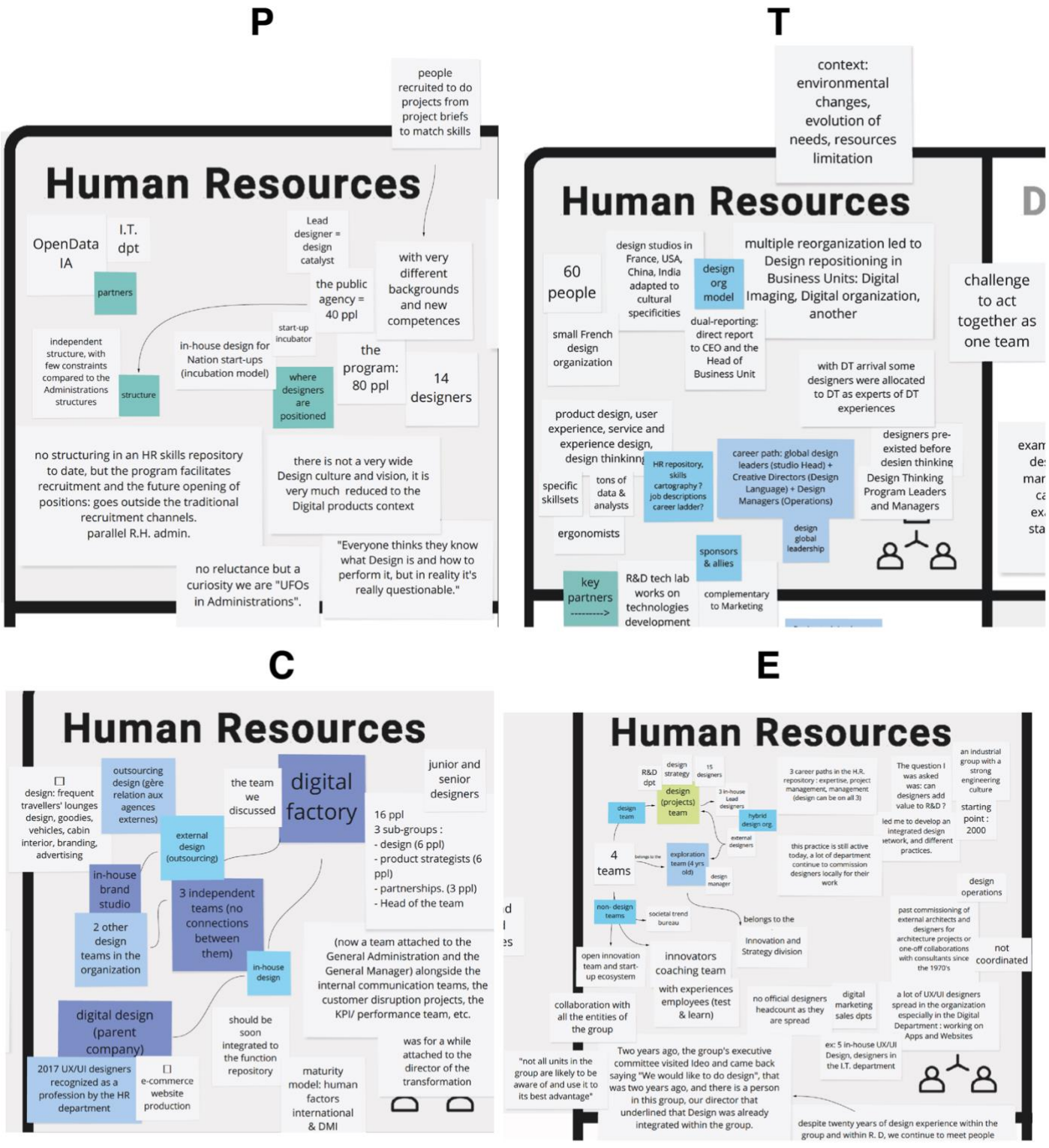


Figure 99 - Comparison of the descriptions of Deployment characteristics in the four companies

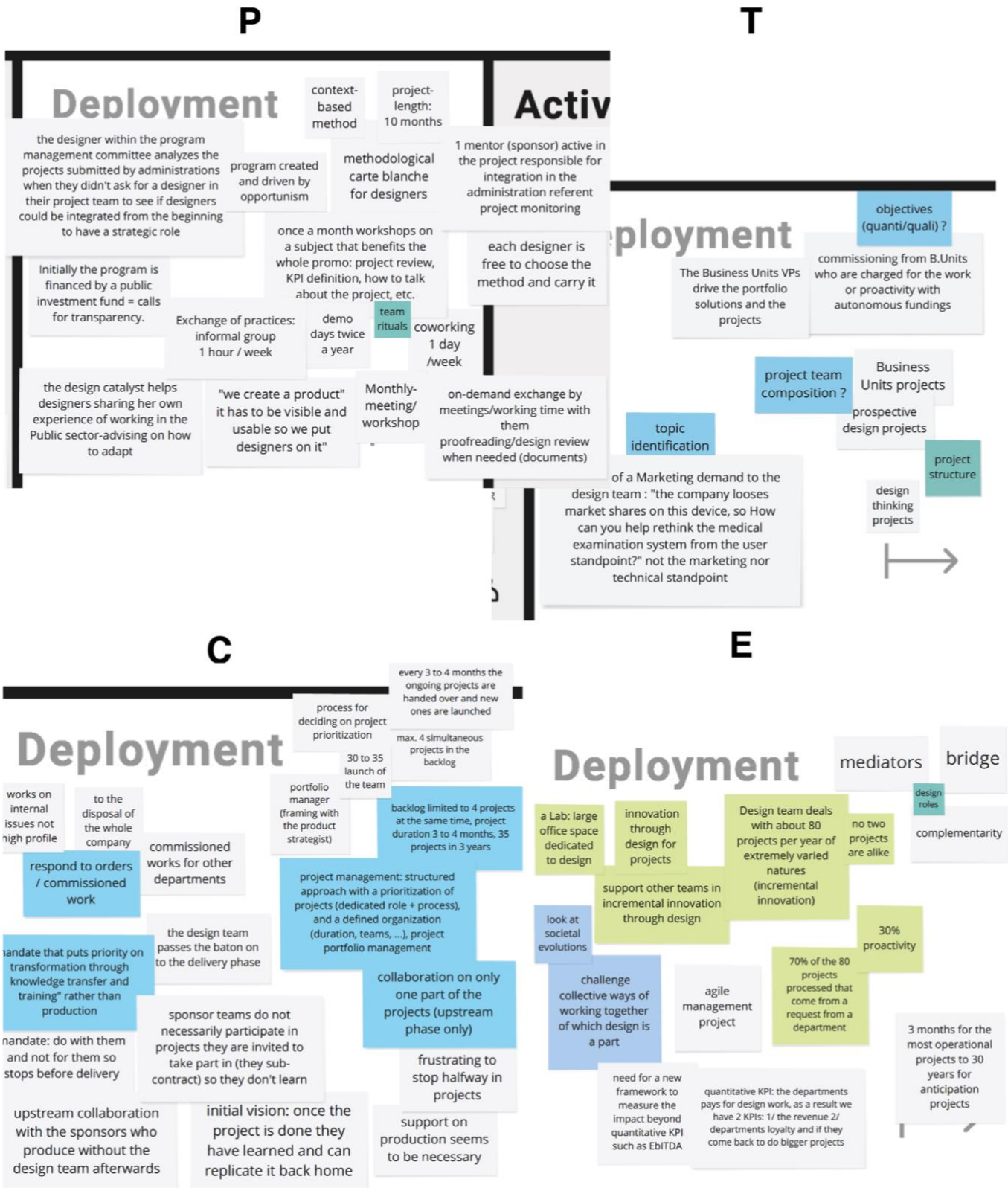


Figure 100 - Comparison of the descriptions of Activities characteristics in the four companies

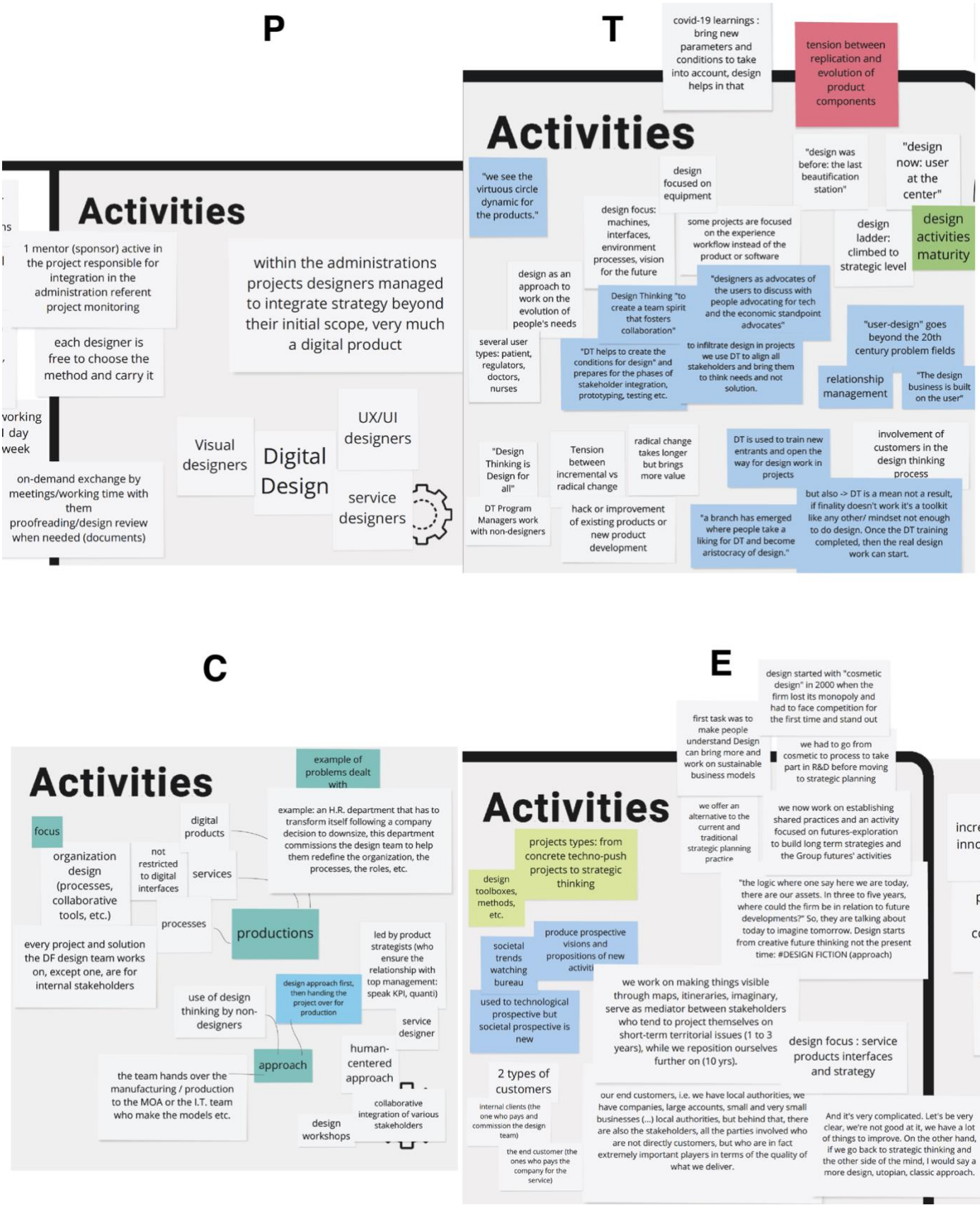


Figure 101 - Comparison of the descriptions of Tangible Results characteristics in the four companies

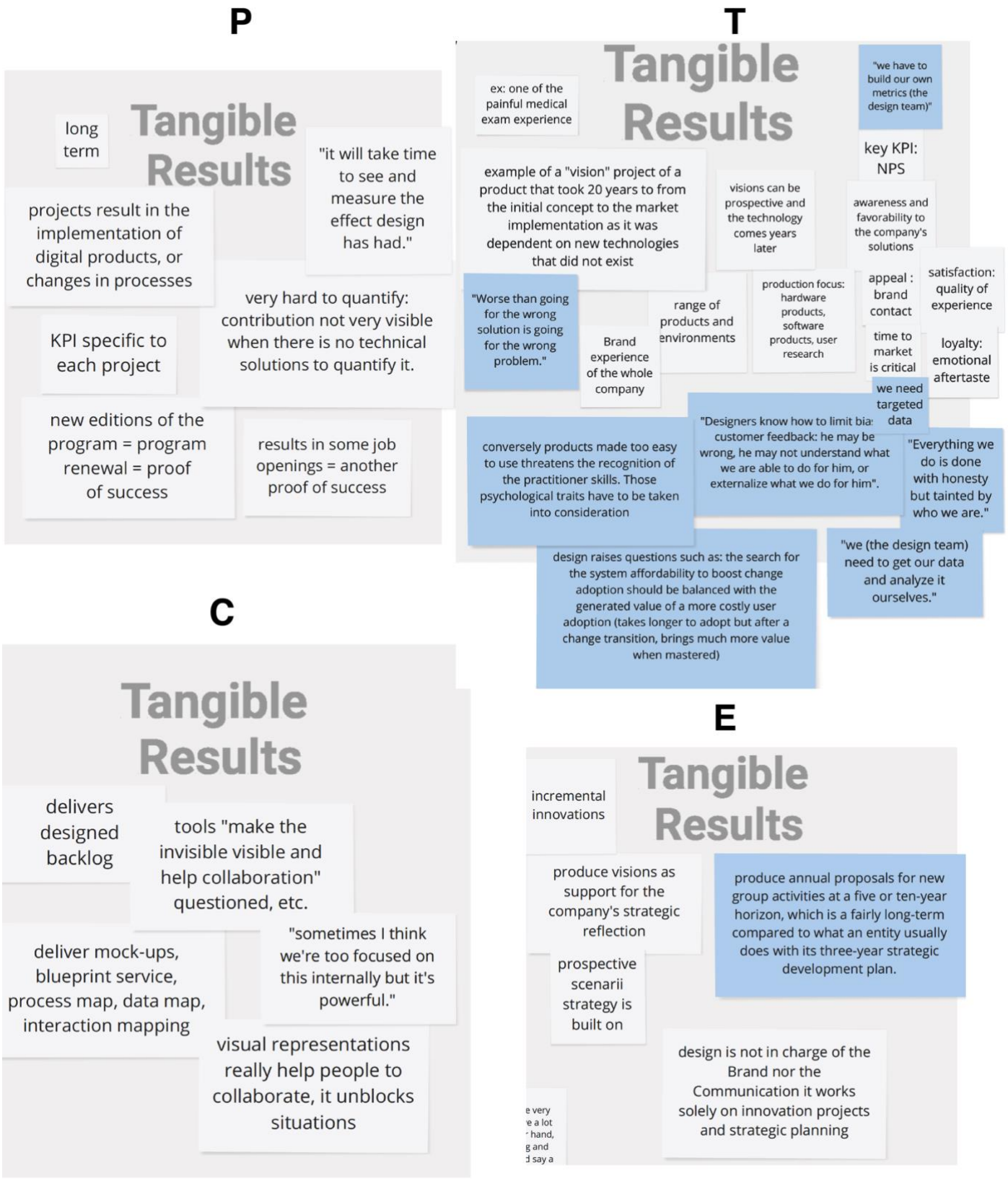


Figure 102 - Comparison of the descriptions of Capitalization characteristics in the four companies

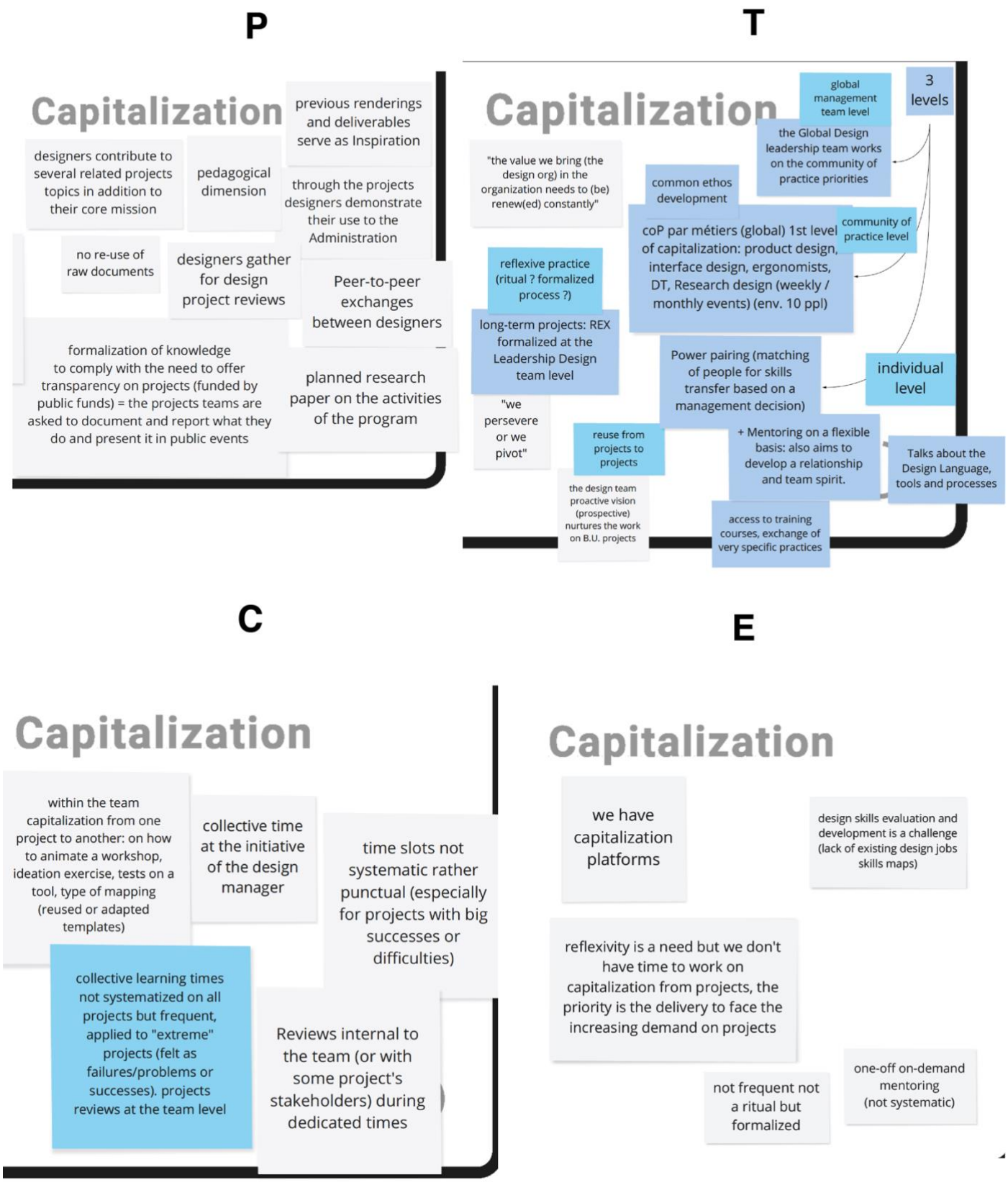
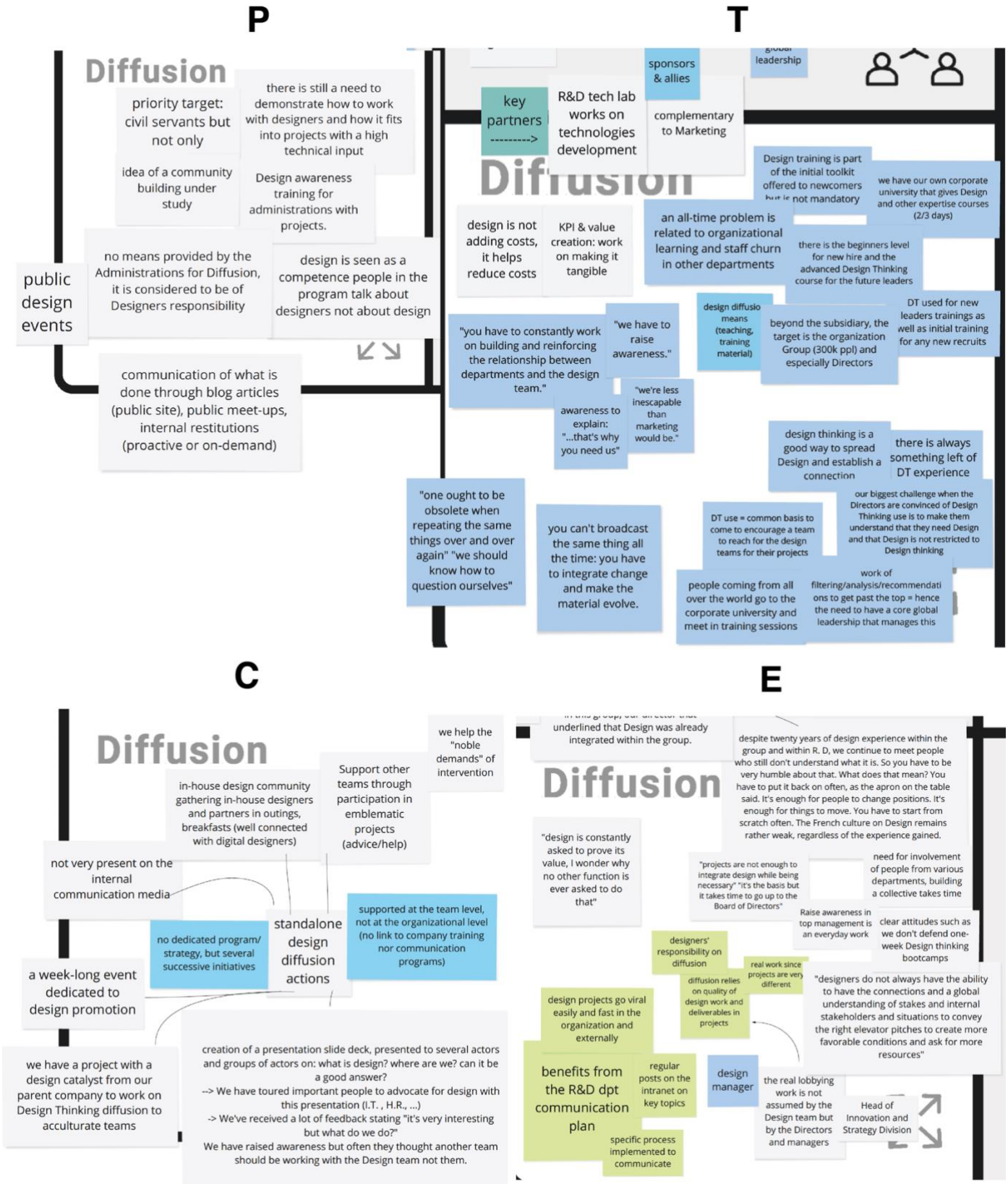


Figure 103 - Comparison of the descriptions of Expertise characteristics in the four companies

Figure 104 - Comparison of the descriptions of Diffusion characteristics in the four companies



3. Design integration in the companies analyzed with the Design Capability building model

As mentioned, after presenting an overview of Design in their firms, the interviewees discovered our model and illustrated the building blocks in the case of their organization.

Based on the data collected, we have illustrated Design integration in these companies through our model. Then we have undertaken a cross-analysis that we propose in Fig 97 to 104 that display a comparison of the different building block across the 4 cases (E, C, T, and P as designated in Table 23): strategic orientation, human resources, deployment, activities, results, capitalization, expertise, and diffusion. These figures are extracted from the model filled with the interviewees from the four companies. This comparison is commented on in the text below the figure he following descriptions per component present the data displayed in the previous figures 97 to 104. It proves the relevance and applicability of the model to describe in-house design capabilities. We share the results from the comparison in the next section (section B, p.318).

a. Strategic orientations

In organization P, after seeing Design in practice in pioneering projects, some Administrations integrated it into their roadmaps and brought in new Design resources.

In organization T, the Design department, as any other department, works on a 3-year vision and workload with a resources plan. Then, Design managers take part in the organization's Strategic Orientations definition and make recommendations for business unit strategies. The Design department also has its independent strategy and agenda. From the managers' propositions, the CEO prioritizes. Design contributes actively to strategy making and benefits from being part of this process as it can influence projects' priorities and ask for related Design resources allocation.

In organization C, Design follows the operational objectives, but no clear Strategic Orientations are defined. Design emerged from the digital transformation and the need to redesign the digital workplace. The manager is unsure about the existence of a vision and regrets the lack of customer-centricity at the corporate level that she thinks could foster design development.

In organization E, the most recent and core Strategic Orientation is adopting the purpose-driven status with the corporate purpose definition. Design has been asked to take part in this and will contribute to its implementation. Design is used to produce insights and a methodological frame for departments to work on Strategic planning. The adoption of the new corporate purpose offers a unique opportunity for Design development.

b. Human Resources

In organization P, designers are spread in project teams; they belong to a program renewed yearly and managed by a dedicated team within the public Agency. The government funds the public Agency as a structure parallel to the Administrations. It serves as an interface, an entryway to bring in new competencies such as Design. Designers' main partners are the I.T. department, the Data and IA experts, and the various Administrations they work for. There are 14 designers in the program that comprises 80 people and one in the Public Agency core team of approximately 40.

In organization T, designers are centralized in the Design studios. The studios are separate teams in several regions of the world. Those teams belong to the global Design department, which has been repositioned in various Business Units during multiple reorganizations. There are to this day, 60 designers are split into four locations. The Design leadership team reports to the CEO and the Head of the Business Unit they currently belong to. The Design teams' key partners are the R&D Technological lab and the Marketing department. Designers have various specialties, among which Product Design, UX Design (including the work on digital products, services, and experiences), and a recent team dedicated to Design Thinking facilitation (comprising Design Thinking Program leaders and Managers). The H.R. recognized career path includes four positions: Individual Contributor, Design (Operations) manager, Creative Director, and global Design Leaders.

In organization C, designers are present in 3 independent, unrelated teams: an in-house visual studio dedicated to the Brand working on the by-products and customer interactions, the Digital Factory working on Digital products for employees, and a Digital Design team in the parent company working on Digital Products for customers (e-commerce websites, Apps). The Visual studio commissions external Design agencies and counts no in-house designer. Apart from that team, the organization opted for in-house designers. Digital Factory is a team of 16, divided into three sub-groups: The Design sub-group with six designers. The parent company Digital Design department comprises UX/UI designers. In the latter, Design is part of the H.R. repository, while in the subsidiary, it is not yet.

In organization E, the Design team is one of the four sub-groups of an exploration team that belongs to the Innovation and Strategy division. It comprises fifteen designers. In addition to this team, external designers are commissioned in some projects across the organization by several departments. Five in-house UX/UI designers work in the I.T. department on Digital Products. However, the interviewee states that "*not all units in the group are likely to be aware of and use Design to its best advantage."* The Design team has no connection nor knowledge of the individual designers' work or the other teams in the organization. There is no official headcount, and Design is not part of the H.R. repository yet, nor does it fit into the current career path defined. Top management has limited knowledge of Design integration in the organization.

c. Deployment

In organization P, the deployment of designers is described as based on opportunism. The program management team hires designers to join new projects when they identify a project opportunity. This opportunity could be a specific need that fits a Design contribution, a Design demand, or a project that they become aware of and in which they think Design would be of value. The brief is open. It gives a methodological carte blanche and enables designers to build a proper context-based approach. A few rituals gather all of the designers once a week, once a month, and twice a year for workshops, demos, and meetings. The designer in the program management team offers one-to-one coaching to designers that can also count on their mentor, i.e., one person in the project team that acts as a project sponsor for the Administration. All the projects are based on briefs from an Administration.

In organization T, most of the projects come from other departments such as the Marketing Department. The Business Units VPs drive the solutions and projects portfolios. The Department asking for Design work is charged for it; the Design department revenue is its main performance KPI. In addition to commissioned work, the Design team also works proactively on projects of its own, usually prospective visions.

In organization C, the Design team also responds to commissioned work from other departments on issues that the interviewee defines as "not high-profile." It is at the disposal of the whole company. The Design backlog (ongoing projects) is limited to 4 simultaneous projects renewed every three to four months. A project portfolio manager works on project framing with the partnering departments. In its first three years, the team participated in thirty to thirty-five projects. We insist on the word "participate" because the Design team mandate is focused on knowledge transfer and facilitation rather than production; in other words, the designers' role is to accompany non-designers. The Design team quits the projects halfway. The project management model is based on Agile project management.

In organization E, designers assume both roles in projects: accompany and produce. The Design team deals with about 80 projects a year, 70% of which are commissioned work. The projects may last from 3 months for the shortest to thirty years from launch to implementation for heavy infrastructure ones. The interviewee describes the Design team's work as a bridge-building, or mediator, complementary to the other departments.

d. Activities

In organization P, every designer is free to carry on Design Activities in their way. A significant remark the interviewee made on the Activities was that "designers managed to integrate strategy beyond their initial scope: very much (centered on) a digital product"; in other words, they managed to enlarge their contribution scope moving from a focus on Digital products' appearance (first level of the Design ladder) to participation in the Administration strategy-making (fourth level of the Design ladder).

In organization T, the interviewee recounts the move from Design being "the last beautification station" to a Design that puts the "user at the center," explicitly stating that "Design in the company climbed the Design Ladder up to the strategic level." Design Thinking activities are distinguished from Design activities. The former is focused on equipment, machines, interfaces, environment, processes, or vision production. It is described as *"an approach to work on the evolution of people's needs,"* showing several types of users. Tension is expressed between the replication and the evolution of products, i.e., incremental instead of radical or sense-making innovation. Design thinking is said to be an asset at the launch of a project to "*create a team spirit that fosters collaboration" "aligning the stakeholders," "create the conditions for Design" and "infiltrating Design in projects";* in other words, it is seen as a preamble to Design work, that should be considered as "a mean, not a result." The interviewee added: *"once the Design Thinking training is completed, then the real Design work can start."* Designers are presented as users' standpoint advocates counterbalancing in decision-making the words from the "tech standpoint advocate" and "the economic standpoint advocate."

In organization C, Design Activities are described per Design focus, an example, and elements defining the approach. The Design foci include Digital products, services, processes beyond the Digital interfaces. Design is described as a *"Human-centered approach*" that *"collaboratively integrates various stakeholders,"* notably in workshops.

In organization E, the interviewee highlighted the variety of the projects, the novelty of working on societal instead of prospective technological thinking, and the changes in strategic planning practices induced by the Design team through techniques or approaches such as "Design Fiction." Design Activities are defined as *"making things visible through maps, itineraries, imaginary"* to help teams adopt a longer-term perspective. Explaining Design teams two types of customers: internal clients and the end customers, the interviewee, points to the difficulty of working with a substantial and varied customer base that includes small, medium, large public and private companies as well as individuals, in addition to the other stakeholders such as intermediaries.

e. Tangible Results

In organization P, the projects lead to new digital product implementation or changes in processes. Some projects' success led to new designers hiring. The impact measurement depends on the project.

In organization T, Design teams' activities resulted in new visions, hardware, software, products, environments, Brand experience implementation or incremental improvement, problem reframing in projects through user research reports, and the ongoing redefinition of the company's KPI and customer knowledge improvement. Several examples of value created through projects are quoted. Currently, the Design teams consider developing their own KPI and customer knowledge system.

In organization C, Design team activities stop once the project team finishes the project's backlog definition for the development phase. Mock-ups, service blueprints, and all sorts of maps may complement the backlog. The interviewee values those visual representations that *"help people collaborate and it unblocks situations"* but warns that sometimes people's understanding of Design ends up being restricted to visual deliverables.

In organization E, the Design team delivers visions (i.e., prospective scenarii the organization's long-term vision is built on) serving other departments' strategic reflection. They produce annual proposals for new group activities at a five to ten-year horizon. They also foster incremental innovations.

f. Capitalization

In organization P, designers meet for project reviews and benefits from previous projects experiences and peer-to-peer exchanges and the coaching from the designer in the program management team. In addition to their core projects, designers contribute to related peripheral projects sharing insights. The creation of a Design community of practice is under study.

In organization T, the interviewee distinguishes three levels of capitalization: *"Power pairing"* at the individual level, a Community of Practice, and the Community of Practice roadmap and priorities definition at the Global Design Leadership level (Design organization management). The *"Power pairing"* consists of a management decision asking two people with different skillsets to work in pairs for a year; it aims to foster knowledge and skills transfers. Besides, designers can ask for mentoring or access dedicated training courses. The community of practice ensures the development of a shared ethos; it gathers weekly to monthly events. Several communities of practice exist for Design team members depending on their expertise (e.g., Product Design, Interaction Design, Design Thinking, Ergonomists). Each community comprises approximately ten members.

In addition to these means, the Global Design Leadership team discusses adjustments to long-term projects roadmaps characterized as *"we persevere, or we pivot,"* and project teams share insights from project to project. For instance, a project vision can inform another one or trigger a new project.

In organization C, the Design manager organizes joint meetings to foster peer-to-peer exchanges. They organize frequent project reviews at the department level, welcoming project stakeholders, especially for success or failure review. This complements the spontaneous focus of the Design team, capitalizing on past projects to train others on workshop facilitation or a new tool.

In organization E, no specific capitalization means are set up, except a document sharing platform where designers can upload their documents and particular demands for one-off training or mentoring sessions coming from in-house designers. The Design team has organized a few project reviews, but it is not systematic nor frequent. The interviewee says it would be appreciated but is not compatible with the current workload. One issue formulated regarding skills development is the absence of H.R. skills maps and career paths for designers.

g. Expertise

In organization P, the program management team built a joint project documentation base that gathers all of the projects from the program since it started. In addition to this perennial database, each yearly renewed cohort starts its sharing platform to gather tools, resources, and all sorts of information. Two people from the program management team (including the in-house designer) foster the platform development, enriching it and ensuring the content curation.

In organization T, Design Expertise is built at the organizational level: a core team is dedicated to the common Design Language and Brand identity management, the Design teams developed. All the Design teams work together from remote locations. Therefore, they have to use Digital tools to collaborate, including facilitation tools for workshops and documents sharing platforms. This online documentation and knowledge sharing gives access to a lot of data exchanged globally. No formal information architecture or the norm for project documentation exists, except the Design system; this absence of standardization is partly due, according to the interviewee, to the complex naming of projects unrelated to the products' names.

In organization C, Design Expertise is built at the department level. Working sub-groups worked on the information architecture to organize knowledge sharing and document storage on a sharing platform. They share toolkits, method guidelines, training material, project documentation. In addition to the Digital Workplace the department built, which is specific to Design, they use the office space to communicate on ongoing projects and display interesting insights or deliverables they produced in projects. The Design team has built two tools: a style guide and a Design system to ensure visual and content consistency in the department deliverables.

In organization E, the interviewee describes Design Expertise in the organization as being "endemic," with tools and platforms used to share knowledge at the unit level, i.e., the team or department. The Design team is working on implementing the corporate purpose, which could lead in the near future to the building of a toolkit.

h. Diffusion

In organization P, the interviewee highlights, *"there is still a need to demonstrate how to work with designers and how they fit into projects with a high technical input."* Designers raise awareness on Design in projects and organize training for the Administrations; however, no dedicated resource is allocated to Design Diffusion. As part of the project's documentation and follow-up, regular public Design events are organized, but they mainly gather curious external designers; besides, articles presenting the projects are regularly posted on a blog. Design is presented as a competence emphasizing designers instead of the method or approach.

In organization T, we identified three pillars for Design diffusion: training, relationship-building, communicating. The Design organization created two Design Thinking courses that have been

incorporated in the parent organization training program and are offered to more than 300'000 employees. The first course is an introduction for beginners, while the second, "advanced Design Thinking," targets Future Leaders. Both are suggested in newcomers' initial training program that takes place in the corporate university. The Design team uses those courses to raise awareness and convince people – especially future potential top management directors- of Design use. They observed that Design Thinking experimentation in training paves the way for Design discovery; however, Design Leaders also noticed the need to make people understand the difference between Design Thinking and Design with expert designers. This training offer is combined with a communication plan displaying Tangible Design Results; the communication material broadcasted is updated regularly; this constant renewal is essential according to our interviewee who stated: *"one ought to be obsolete when repeating the same things over and over again(...) we should know how to question ourselves."* The last pillar -relationship-building- is about maintaining the connection to Design partners, with continuous efforts put to "raise awareness" and *"explain why they need with the Design department*," especially to newcomers in the partners' teams.

In organization C, the Design strategist successively used various means for Design Diffusion independently from corporate communication and training programs, ranging from a week-long event dedicated to Design discovery, the participation in emblematic projects, a presentation built on purpose to promote Design, the building of a community welcoming partners and designers.

In organization E, the interviewee insists on the continuous efforts necessary for Design Diffusion: *"Design is constantly asked to prove its value, I wonder why no other function is ever asked to do that."* This necessity stands particularly true as people in other department moves a lot and Design conversation partners change. It is consistent with the words from the organization T interviewee's experience. The Design team benefits from the department communication plan that offers visibility on projects in which tangible results tend to become viral and write regular posts on the company intranet to increase its visibility. They built a specific process to connect the Design communication objectives to the department communication plan. This project-based communication is complemented by lobbying efforts from the Head of the Innovation and Strategy department targeting top management and the Design managers targeting the Head of teams and departments. The interviewee suggests designers from the Design team are not equipped to assume this lobbying role.

B. Results from the applications of the in-house Design capabilities model

Based on the cross-analysis undertaken above, we deduce four propositions regarding the validity of our model and its potential usages.

1. From the partial depiction of Design capabilities to a normative description: corroboration of the model and building blocks

When asked to talk about Design, the interviewees essentially focused on Design positioning in their organization, the internalization and externalization of designers, the Design focus and results, their maturity level according to the Danish Design ladder, and key elements from the firm's environmental context. They highlighted as well, Design understanding difficulties and efforts developed to raise Design awareness. Recent events or changes tainted the descriptions. The model was useful to frame the discussion and help us uncover key Design capabilities attributes that were missing in the initial reports. The gap between the interviewees' spontaneous initial descriptions and the results from the exchange driven by a focus on each building block demonstrates the value of the model for Design capabilities studies.

In general, the interviewees acknowledged a value for the model to depict, share within a team and reflect on the Design integration in their organization. One of the interviewees asked for permission to present and use the model with his colleagues, stating it was accurately depicting the experience they are living, "*if you allow it, I would like to present the model to the team and use it in the context of an assessment of the way we work with some of my colleagues";* another underlined the interest of the model as a reflection tool describing it as *"clear and thought-provoking,"* and asked for export of the model, *"Can I have this? (the model filled during the interview) I think it's really interesting"*. Except from one interviewee suggestion to adapt the terminology (i.e., the names of the building blocks to the company context) because may resonate differently from one organization to another, interviewees spontaneously underline the conformity of the model to what they encounter in the field, stating that the building blocks accurately depicted their own experiences with Design capabilities-building.

2. Design needs to be continuously promoted and renewed: corroboration of the third-order capabilities, the "Building on Design Operations" ones

In addition to *Designing*, interviewees insisted that Design needs to be renewed and continuously promoted. As stated by one interviewee: "*in the absence of renewal, Design and Design thinking would be obsolete."* This echoes our *Building Design (Expertise through capitalization) capability*.

All of the interviewees underline the influence of some functions in their companies on Design development, explaining how they work on connecting to the right people to acquire support for the Design Team and build partnerships between the team and stakeholders. The need for a sustained lobbying effort on Design is due, according to the interviewees, to the highest staff churn in non-Design department compared to Design teams. Changes in Design support and departments working with Design teams call for additional efforts to keep the connection, constantly building a relationship with the new members. One interviewee insists on the advantage of integrating Design into newcomers' training and onboarding, especially Leadership programs, stating that Design-aware future leaders will be of help for Design development and deployment. The interviewees that suggested the need for sustained efforts are from the companies with the oldest Design experience. This echoes our *Advocating for Design* capability.

One of the interviewees suggested that whereas the virtuous cyclical dynamic would be long to mid-term, a horizontal dynamic in the upper part of the model one going back-and-forth from the strategic operations to the tangible results would be interesting to track on a short-term and frequent basis. While this suggestion of two temporal horizons would be interesting to be investigated further, it echoes with our distinction between the second-order Design capabilities, i.e., Design operations, and the third-order Design capabilities, i.e., Building on Design Operations.

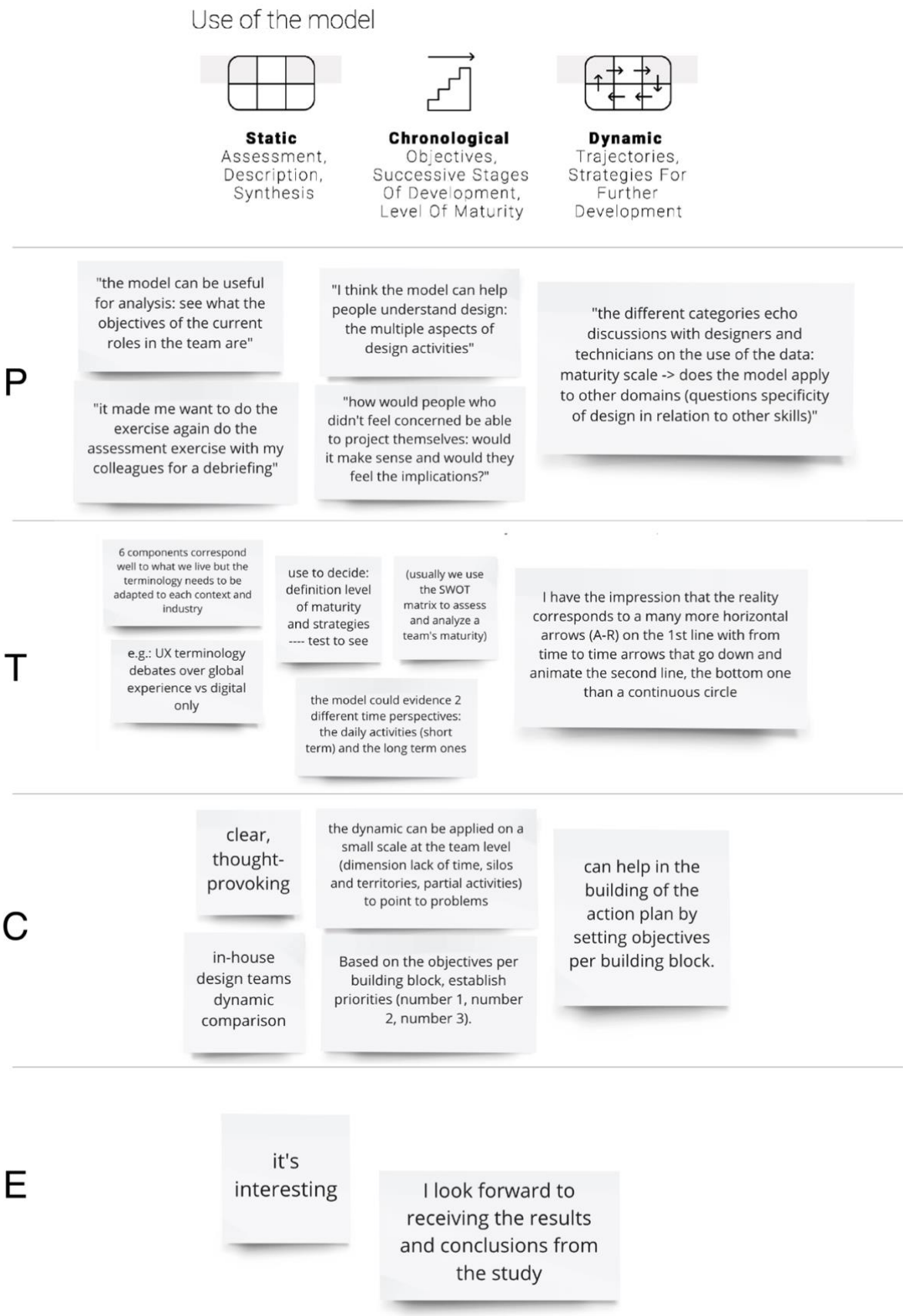
3. Potential usages of the model and its value

The interviews ended with open feedback on the model and its usages. Fig 105 summarized the interviewees' comments regarding the model's static, chronological, and dynamic use.
Several alternative usages were evoked:

- Its use as a maturity scale and the SWOT framework generally used to assess a team's strengths, weaknesses, opportunities, and threats. We will detail this use below.
- Its use to help the definition of a Design capabilities development roadmap (per building block)
- Its use to assess roles in the team and specify job descriptions scopes
- Its use to reflect on existing means and highlight problems
- Its use to help Design understanding for non-designers in the organization
- Its use to other new competencies aside from Design, such as Data management, for example.

One central limit is that this feedback relies on discussion and not on the interviewees' effective —autonomous— application of the model in the specific case of their companies. This will be considered in the further research that we intend to launch based on our model.

Figure 105 – Interviewees reviews of the usages proposed and suggestions



4. Maturity assessment: The Design-capabilities Maturity Rainbow

a. Presentation of the model

We advocate for using the model as a capability maturity assessment tool complementing the Danish Design Ladder. Based on the data analysis from the four companies as well as from the detailed longitudinal case that induced the model, we focus on two elements: first, the ability to fill in the eight model building blocks with facts. Second, the scale of the three basic building blocks (human resources, activities, and expertise).

We suggest that the inability to fill in all of the eight building blocks (the three basic components of the model, the three mechanisms, and the two sub-components) would indicate a low maturity level of Design integration. On the contrary, identifying several cycles of development of the eight building blocks would correspond to a high maturity level. An intermediate level would be filling in the eight building blocks with some iterations on each block, individually.

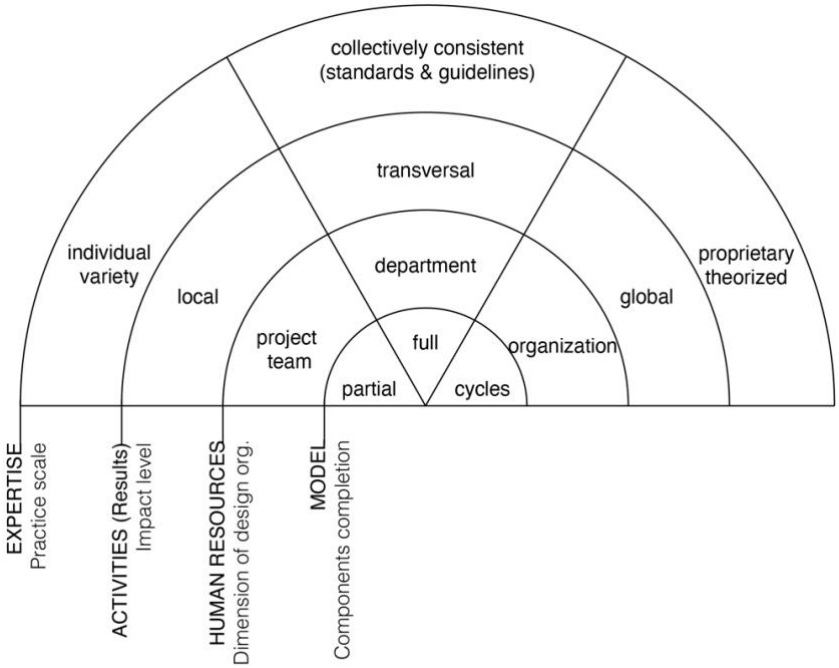
Regarding the scale of the Human Resources component: resources can be pooled at the project level in a project team (such as the experience company mission at MAIF), or in a sustainable structure in the organization such as a team or a department (such as Design teams within Innovation, DF and Experience teams of the Digital Department at MAIF) or spread across the organization in every division or in a central one, which makes Design presence the norm.

Regarding the scale of the Activities component: Design can serve at a local level a project for a specific department or product (e.g., an insurance product at MAIF), or at a transversal level working cross-functional projects that involves and impacts the activities of plural divisions (e.g., the omnichannel strategy for claim-making at MAIF) or eventually at a global level working on projects redefining the organization (e.g., rebranding projects, redefinition of the customer experience and segmentation).

The focus on the Expertise component corresponds to the practice scalability; in other words, the existence of a joint knowledge base shared and known by all that feeds the activities. The lowest maturity level is defined by the coexistence of a collection of individual practices that vary a lot from projects to projects (even for designers belonging to the same team), making it difficult for other stakeholders to understand Design. A higher maturity level would correspond to the definition of guidelines, shared principles, and the sharing of individuals' methods and tools, as well as tools, developed in-house that can be applied in projects or serve to non-designers to follow up with designers' work. In that case, the Expertise is collectively shared and ensures consistency and legibility. The highest Expertise maturity level would be developing a proprietary method (such as IBM or G.E. for non-Design providers or IDEO for Design providers). This Expertise evolves in time but serves as a reference and is taught to newcomers internally or sold externally.

We synthesize the various levels on the two elements in the following representation of the tool (Figure 106) that we designate as the Design-capabilities Maturity Rainbow:

Figure 106 - Design-capabilities Maturity Rainbow

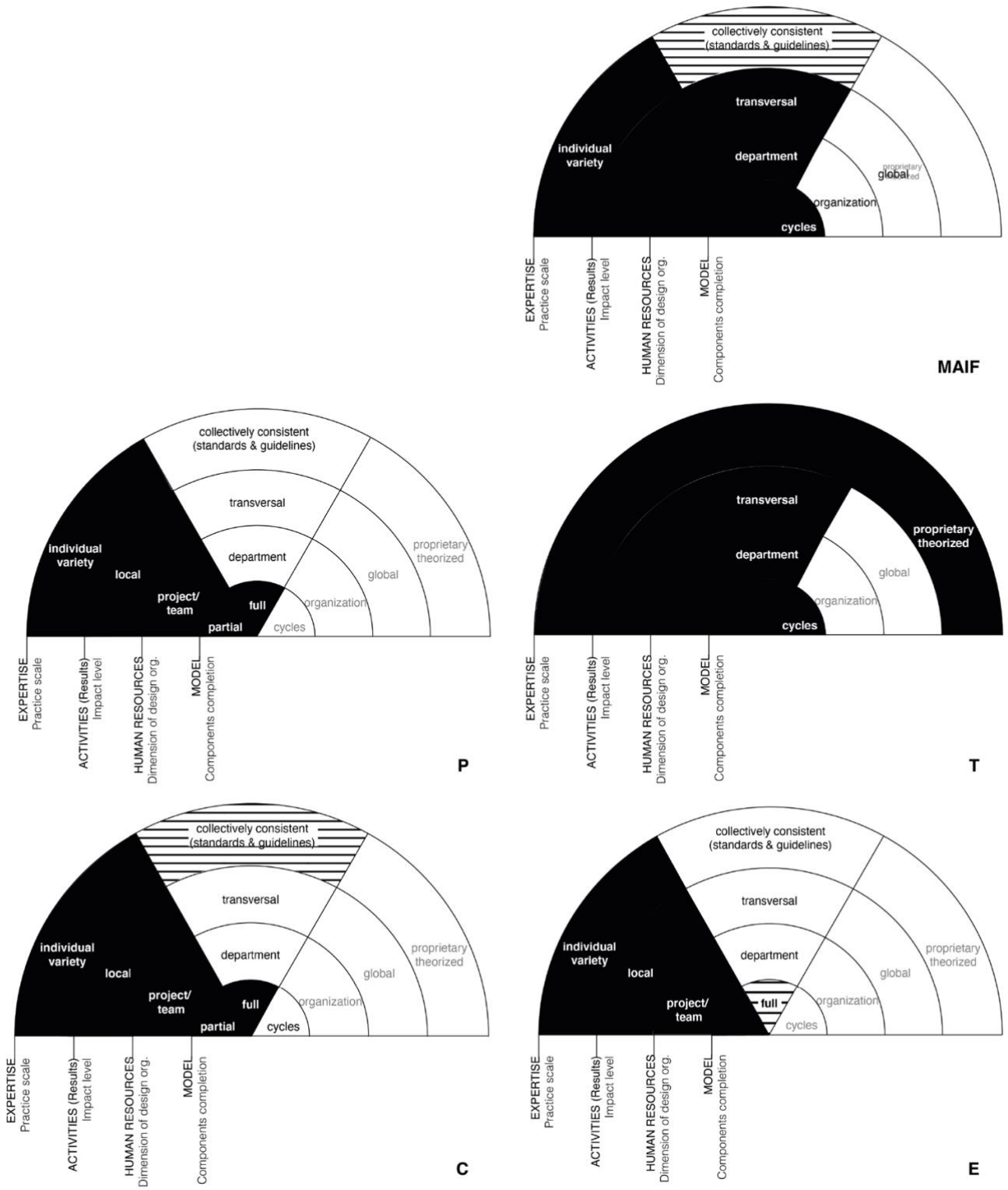


Based on our longitudinal case data, we have used the Design-capabilities Maturity Rainbow to present the Design integration maturity of MAIF and the four other companies in the figure next page (Figure 107). It shows the variance of the maturity between these five companies, in other words, different levels of Design capabilities-maturity. In contrast, the four interviewees have declared their capability as "mature," corresponding to the fourth level of to Design ladder.

b. Discussion: The Design-capabilities maturity Rainbow, an additional model to the Danish Design ladder

The Design ladder is relevant to determine Design maturity level in the activities. The first level corresponds to Design absence. At the second level, Design is considered, as one interviewee said, as a "beautification station" for aesthetical purposes only; Design is defined by the result it produced. The third level is the adoption of Design in a company as an approach integrated early in New Product Development projects. At the fourth level, Design contributes to the strategy definition, the identification, and exploration of visions for the future and plays a key role in the business renewal. All the companies we selected in this study integrated Design at the fourth level; however, we demonstrated that their Design capabilities maturities vary a lot. Hence, we suggest that the Danish Design Ladder is helpful to describe the maturity of Design use, but it is not enough to define the organization's Design capabilities maturity level. We recommend using our model coupled with the Design-capabilities Maturity Rainbow to assess the organization's Design capabilities maturity level and help practitioners reflect, plan and create new strategies or ways for Design development in their organization.

Figure 107 - Use of the Design-capabilities maturity Rainbow on the five companies studied



IV. Managerial Implications, Limits, and further research

We summarized our contributions in table 22 in part II of this chapter. In this part, we expose the managerial implications, discuss the limits of this investigation and the paths they could open for further research.

A. Managerial Implications of the dissertation

Our dissertation contributes to a better understanding of Design in organizations and how it can be a lever for strategic change. Our managerial implications relate to practitioners' potential use of the capability-building model we propose. We demonstrated that hiring and working with designers, while necessary, is not sufficient for proper Design integration that leads to Design-capability building. We suggest four usages of the model as a tool for Design managers and practitioners: a descriptive tool, an educational tool, a tool for reflection, and a maturity assessment tool. This suggestion is backed up by the feedback we got from our first batch of tests within four companies. Those model usages enable one to take a step back to reflect and plan, quarterly or annually, or define objectives for a multi-year strategy articulation.

1. Model use as a descriptive tool

The model can be used to help designers and Design managers describe in a more holistic way how Design manifests in their organization. It helps consider the resources related to Design in the organization and their configurations toward a specific aim from a capability perspective. The chronological use of the model can possibly shed light on resource configurations more productive than others, for instance, through the analysis of various experiment settings at the project level. We suggest that it can be as well a helpful tool to communicate with top management or other non-Design departments.

2. Model use as an educational tool

The model could help practitioners specify their use of the word "Design." It accounts for the coexistence of multiple acceptations in organizations. It can illustrate that Design is not restricted to a process, a tool, or the results it produced but corresponds to a function and expertise embodied in designers and the organization's knowledge. Indeed, many acceptations restrict Design to one of the Building blocks, defining it through the results it produces or referring to Design activities specificities such as prototyping or ideation, or tools such as the user journey or personae. According to the model,

each of the acceptations stands true but are only partial representations of the set of capabilities behind the in-house Design capability. We hint the model would be of value to teach designers and non-designers alike about Design capabilities-building and the diversity of Design settings in the organizational context.

3. Model use as a tool for reflection

The model can serve as a tool to inspire action, helping practitioners reflect on the current state of Design capabilities and planning for future steps or objectives. We argue the model can be used as a basis for reflection, support for discussion, to envision the capabilities development by defining targets to be reached, levers for action, needs to be addressed, and match those imagining and testing new solutions and means. Two illustrative applications would be Strategy elaboration and in-house Design roles definition. For the latter, referring to specific capabilities from the set of seven can help define the Design jobs description, for instance, the *Building Design (expertise through capitalization)* capability led MAIF to the creation of a new role this year -the Design Ops job- whose mission is centered on this specific capability; in the commercial carrier company, a similar role has been played by various designers sub-groups from the Digital Factory team in addition to their core mission focused on *Designing*.

4. Model use as a maturity assessment tool

Eventually, as suggested in the last part, the model can help organizations assess their in-house Design capabilities through the Design-capabilities Maturity Rainbow that we proposed. It invites to reflect, per building block, on what could be improved and provides inspiration from identifying other organizations' best practices. (see in the next part Section C, part 1-b, for more details about this use).

B. Limitations

We discuss in this part the limits of this research, especially regarding the case specificities. Indeed, even though a qualitative longitudinal abductive research method does not intend to produce a generalizable theory (Einsehardt,1989), we would like to highlight the specificities of our case that could have had a substantial impact on our model and the associated potential limits.

1. The findings in light of the case specificities

In the first chapter, we pointed out the case specificities, i.e., the preexisting human-centeredness, primarily through the mutualist structure of the firm. In this part, we discuss if it has been an enabler to Design integration.

a. The Customer- or Human- centricity: (preexisting) "Ordinary" usage vs. "Design" usage

As previously stated, MAIF has been recognized by competitors as a leading company for customer relationship excellence for the past fifteen years. This is significantly due to the Operations division's work on the quality-of-service delivery monitoring and proactive work on continuous improvement. MAIF has always been a user-centric company; one tends to assume that MAIF has always had a capacity for innovation, which is the case, but if before industrialization, it generated new products and coverage at a regular frequency, since the industrialization phase and before Design few new products focus on continuous improvement. The company was already integrating its customers in its innovation processes, but the projects reveal different approaches behind similar words like co-creation. Design compared to Marketing and Operations divisions, for example, brings new ways of interacting with customers targeting other objectives.

Concretely, the Sailing project illustrates the differences between the practice of designers and the marketing team's participants in a project. For instance, Marketing team members rely mostly on quantitative data, and the marketing mix serves as the primary thinking model. In contrast, Design team members rely mostly on data from field exposure and build various thinking models according to the project.

Due to the mutualist nature and values, the Operation division, which comprises all front-line employees, is mainly focused on customer satisfaction. However, while sharing the same data sources and field exposure, the customer-centricity approach of Design teams and Operations teams are different regarding the customers' data collection processes and their use, as highlighted in the following table

Table 24 - Focus on the Operations vs. Design customer-centricity and field data management

About Customer-centricity	Operations teams	Design teams
Data collection processes in place at MAIF	**MAIF is contacted by the customer:** Social media for spontaneous feedback The central claims management system for unhappy customers It results in response to the customer, providing an immediate solution or a denial to their request **Measurement/control devices:** ---(one-off measure) Round tables (Collect testimonies from MAIF members in the presence of employees). ---(continuous measurement) MAIF on-the-spot surveys ---(annual measurement at MAIF barometers, market surveys, the mirror tracker It results in an indicator (rate, satisfaction, progress)	**Field exposure:** ---(In projects) Field immersion(observation), Interviews, User testing, Focus group, Shadowing of front-line employee ---(Off-projects): Personal experience with the brand, immersion in the field, shadowing It results in a collection of observations, insights, leads for problematization or creative lead **Secondary data:** Surveys, reports, data collected from the operations department It consists of trends and performance reports

Temporality	Immediate action and response to a situation (present-oriented)	Analysis, reflexivity, delayed improvement of a problem (future-oriented)
Level of action	Immediate solutions for individual cases followed by changes in the organizational processes	Scalable solution to the organization level
Focus	Bring a solution to a customer problem, deal with claims	Collect necessary insights for projects, explore various creative alternatives
Goal	Competitivity and performance	Renewal and Value creation (for the customer, the organization, and the society)
Result	Continuous improvement (exploitation)	Innovation (exploration)

Building on Danneels' (2011) analysis of Smith Corona's customer understandings, we could argue that the data collected by the Operations teams are service-specific, focused on customers-satisfaction with the service, and therefore is not fungible for innovation purposes. Besides, building on Topalian's (2011) suggestion that Design is about exploring "Prospect beyond the horizon," we further explicit the difference between the preexisting customer-centricity and its renewal thanks to the Design integration. The former is mainly embodied in the Operation processes and anchored in the current response to the customer pressing issues or needs. In contrast, Design practice is focused on a mid-term or long-term improvement or change of customer experience or the anticipation of emerging needs. The two are thus different while complementary.

Design teams collaborate with the Operations teams through projects initiated by the latter and transversal projects that include digital touchpoints. However, a closer collaboration, or to a further extent, the merger of those two teams, could be interesting for the corporate roadmap definition (opportunity identification that leads to projects prioritization).

b. Is the mutualist nature of the company a more favorable ground for Design integration and development?

Being mutualist means that for a company to be owned by the policyholders (the customers) instead of external shareholders. Therefore, they take part in the governance and search for the organization of a perpetual balance between the economic performance for the firm survival and the value created for the customer (policyholder). For instance, when making benefits, the firm may redistribute exceeding funds to its customer base. This happened lately during the Covid-19 crisis, the diminution of car accidents allowed for a redistribution of the savings generated.

Due to this mutualist model, customers demonstrate their trust and benevolence regularly through correspondence and surveys, and therefore the access to customers and implication in the organization is facilitated.

While we could think that it may be easier to integrate Design in a mutualist organization, we argue that it is not. Indeed, identified challenges in line with those identified by Carlgren et al. (2016a), Bjorklund et al. (2020), Wrigley et al. (2020), who studied organizations that are not mutualists.

Furthermore, one of the biggest challenges faced by teams in projects has been precisely the fact that due to their preexisting attention to customers, teams partnering with Design feel like they are already user-centered, resulting in conflicting scopes. We have shown that their user-centricity is different from the Design approach and could be complementary to it. The mutualist nature can make Design be perceived as an old thing disguised in new clothes and thus be rejected.

c. More than a predisposition, a momentum for Design integration?

While the mutualist nature may not be better suited for Design integration, it may have played a part in combination with the context of the "digital transformation," MAIF's move towards a purpose-driven company, and other changes in the firm's strategic orientations in response to internal and external triggers.

Design emerges at MAIF in response to the firm's difficulties in addressing new fields of problems: the need to work on the user experience through digital, combined with the search for the firm singularity. The latter was addressed by top management by the decision to reinforce the mutual model, which is still one of the key distinctive features of MAIF compared to its competitors. This led to the choice of becoming a purpose-driven company.

Design was not adopted as a new profession but as part of a new field of problems that led to new capabilities. As Design capabilities develop in the organization, the Design organization emerges (second half of the year 2018), and the recognition of Design as a new profession comes late in Design integration (late in 2019, early 2020).

We suggest that the conjunction of the following four strategic orientations opened the door for Design integration and provided an appropriate context for Design fulfillment:

- The adoption of a purpose-driven corporate form (Levillain et al., 2019; Levillain and Segrestin, 2019) means that the resulting performance measurement includes searching for meaning and the societal impact measurement to more traditional economic and financial indicators. As Design is uniquely suited to increase firms' competitiveness and help in search of meaning (Papanek, 1985), it may be instrumental in the context of purpose-driven corporations.
- Environmental changes that push the firm to cope with the stakes of user experience and the digital transformation and tackle new fields of problems (Barrett et al., 2012; Calabretta and Kleinsmann, 2017; Buchanan, 2015)
- The search for a competitive advantage through a singularity
- A willingness to reinforce human centeredness in the company culture and its structure.

Several studies shed light on the structural difficulty of implementing Design in several types of organizations. One hypothesis emerging from this thesis is that these four strategic orientations in response to the context may represent a particularly favorable context for Design integration. They could be necessary and not sufficient conditions, and thus they do not exempt the firm from working on the conditions for Design integration.

2. Limits of the research

We claim two types of limits: one related to our approach and the other associated with the research context. The former is about our lack of focus on Design. The latter is that, while particularly emblematic and suitable for our research question as presented in the first chapter, the case studied present two limits: the lack of senior designers and the end of our research before the end of the transformation studied.

a. Our analysis focused on Design-capabilities building and the organization from a management perspective.

We chose to build a model to understand Design capabilities, but we did not dig deep into each capability's specificity. We have adopted an organizational and management perspective on Design, and we did not focus on the content of Design activities. Our research would benefit from further investigations following a Design action-oriented perspective focusing on the designers' standpoint in projects. However, in light of the research context, this seemed tricky and would require a different context.

b. Limits related to the research context

The Design teams at MAIF during this research were, for the most, composed of junior designers (recent graduates) and retrained designers, i.e., people from varied backgrounds that moved to a Design job generally after a two-week training in Design. There are few senior designers. Thus, this questions the Design expertise in the Design teams studied. This a limit Cross (2004) pointed out in Design studies. However, the designers we interviewed are the senior designers, and on several projects, external senior designers were backing up junior designers. Furthermore, this relates to one of our findings showing the difficulty in the hiring process to find senior designers candidates in firms not used to Design and from the service sector compared to firms from the industrial sector.

We seized the opportunity to join the field in the early days of the Design-capabilities building at MAIF. The longitudinal study approach is uniquely suited to follow the development of those capabilities. However, such development is slow to unfold and takes years. Our study ends before the end of the delimited era for the current strategic orientations (the second strategic plan) and in the beginnings of the "Design at scale" mission identified as the last step of Design integration at MAIF. This previous part lacks the understanding of the in-house Design capability development history. We will not observe the impact of some of the decisions and actions in the institutionalization phase that started this year. This is the first limit inherent to the field of study. The second one deals with the lack of seniority of a large part of in-house designers.

C. Further research

In this research, we proposed and used a model that enhances the understanding of the development of an in-house Design capability through a firm's longitudinal study. We argue that the model opens up several directions for further research projects.

1. Design-capability development

The model offers several opportunities to conduct research that could generate new knowledge on in-house Design capabilities development.

a. Building on the virtuous circle trajectory

Further studies could explore the trajectories of Design capabilities development in several contexts, exploring how this circle can be initiated and sustained over time, as well as shedding light on enablers and blockers. They could as well check the existence of alternatives to the virtuous circle as a Design development capability.

b. Typology and maturity

Further research based on our model and more specifically on the Design-capabilities Maturity Rainbow could focus on testing and refining the definition of each arch of the rainbow, especially in a comparative setting through quantitative research. One example could be the exploration of a designers ratio in comparison with other key competencies or the total employees' headcount, as the Project Manager Officer from MAIF Digital Factory did for digital product innovation projects, or as the Design Genome project from Invision[21] suggested from the analysis of a dozen of companies' Design capabilities. This would lead to a more objective and fined-grain assessment tool. Such research could build on existing maturity scales such as Storvang et al.'s (2015) matrix of Design maturity or help enrich recent contributions on capability types such as Aitchinson et al.'s work (2019) in-house Design profiles. It could serve at first for descriptive purposes and then for classificatory purposes.

2. In-house Design activities and expertise specificities

Building on our findings, the set of Design capabilities, and identifying the levers for their development, we suggest two follow-up research directions. We mentioned several tensions involving compromises from the Design teams for Design integration. We suggested that one capability of in-

[21] See the Design Genome Project here : https://www.invisionapp.com/enterprise/design-genome

house Design capabilities is “Building Design Expertise” capability through capitalization on the project experiences. Then, we infer a focus on understanding the in-house "Designing" capability compared to external "Designing" capability could be relevant, primarily through an analysis of Design integration impact on such capability. This could nurture another research focus investigating in-house designer profiles.

a. Training in-house designer profiles for their dual role and new fields of problems

As underlined in the findings, further research could focus on in-house designer profiles, particularly investigating Design education to shed light on designers’ “Diffusing Design” capability and second on the best ways to train designers. Such research could help advance Design education for train equip designers for new Design opportunities, i.e., the latest fields of problems beyond the symbols and things (Buchanan, 2015; Findeli, 2001; Borja de Mozota, 2018; Dunne & Martin, 2006; Meyer 2011; Boland & Collopy, 2004), and prepare them for in-house designer job specificities that includes assuming a dual role and developing multidisciplinary competencies (Carlgren 2013 citing Kimbell, 2011 and Cross, 1990). In light of debates over Design not being left to “designers” and the necessity to acquire competencies from other disciplines, one can question the need for an addition to the initial Design curriculum (Findeli, 2001) or, conversely, the need for Design to be taught on top of another initial curriculum such as management, engineering or psychology (Martin, 2015).

b. Professional designers’ contribution

The debate over "anyone can Design" versus "designers are needed to Design" engaged plural researchers with opposite views. Ezio Manzini (2015), in his book *‘Design, When Everybody Designs: An Introduction to Design for Social Innovation*,' advances Design as an innate human ability every human being possesses when trying to change or solve problems in our world. The same year, Warren Berger shares a similar standpoint in his book dedicated to Design thinking. He insists on the "Briefing" (Foreword) on everyday problems non-designers address through silent Design or Design thinking approaches. Earlier, Tim Brown (2011) advocated for Design thinking as a lever for non-designers to Design. MAIF promoted this view that "anyone can Design," designers were hired and supported this. A large part of Design resources has been allocated to events, workshops, and training sessions for people all over the organization. The Innovation team and the Experience team organized days of training for other departments and events to promote Design diffusion. It represented one-third of the experience mission activities. Nonetheless, those efforts put in Design diffusion happened to either empower teams for continuous improvement of their practices at an individual or team level or facilitate designers' integration in projects. Professional designers (i.e., designers by training) were brought to projects to perform Design activities. We identified two examples of professional designers' contributions to projects: designers help facilitate multidisciplinary workshops, and designers help for

prototyping and testing. We pointed in our findings to several differences between professional designers and other teams members contribution in projects such as: (i) professional designers' ability to work with uncertainty; (ii) their continuous adaptation of the practice through capitalization that involves crafting custom-made methods, and tools depending on the context; (iii) and problem reframing or pain point identification in projects that gave birth to new projects; or eventually (iv) the frustration felt on a project where designers lacked a holistic approach and were constrained to work on a narrow scope. Further work could investigate the specificity of professional designers' contribution compared to Design thinkers, silent designers, or non-Design practitioners, in line with Cross's (2004) preliminary contributions to this question.

3. Dynamic Capabilities building in organizations

a. Test of the model on other Dynamic Capabilities

We invite researchers to test the model on other capabilities, either related to a new function or existing recognized Dynamic Capabilities. New Dynamic Capabilities may emerge subsequent to the newly created jobs from the digital transformation such as Data Scientists, Artificial Intelligence, or Machine Learning experts. This could lead to a comparative analysis of various capabilities that enrich the understanding of Dynamic Capability building and organizational learning mechanisms.

b. Focus on the exploration of higher-order competence in light of second-order ones.

Further research could investigate the differences between second-order and higher-order competencies to show the specificities and articulation of the two. Through our In-house Design capability model, we have suggested an explanation that could be pursued further.

To conclude, we believe that this model opens new avenues for research on Dynamic Capability building on the one hand and on Design (including Design and Design thinking through the study of expert designers, Design thinkers, and silent designers) in the context of organizations on the other.

Conclusion

This research investigated from the inside, Design integration and its development through Design capabilities building in an organization new to this competence. This integration took place in the context of a broader transformation. We were aiming for a better understanding of what Design capabilities encompass and how they are built, as well as how in-house Design capabilities transform the organization.

Our results come from an analysis at three different levels: (i) the organization transformation and especially the nascent Design organization, (ii) the creation of four Design teams, and (iii) two emblematic projects selected from the Design teams' portfolios.

We inductively built from our longitudinal case study in a French insurance company a model that helped define in-house Design capabilities and used it to process the data. We proposed a Design-capabilities building pattern revealed from the analysis of the development trajectories at the three levels mentioned above. Spotting obstacles and stops in this pattern, we highlighted challenges associated with the conditions for Design integration.

Then, we suggested that in-house Design capability in an organization relies on a set of seven Dynamic Capabilities that we regrouped in two categories: the first three, *Designing, Spreading Design, Managing Design*, correspond to the *Design Operations*; and the four others, *Building Design (expertise through capitalization)*, *Enhancing Design, Advocating for Design, and Anchoring in-house* correspond to *Building on Design Operations* capabilities *(see chapter 5, Table 19)*. The latter modify existing organizational processes and ways of working.

We suggest that Design Dynamic Capabilities are of two different orders: *Design Operations* are second-order capabilities, which means that they contribute to renewing the organization's operational capabilities (first-order capabilities). The other *Building on Design Operations* are third-order capabilities that contribute to the renewal of the *Design Operations* per se.

We summarized our contributions in a synthesis Table 22 presented in chapter 5, where we highlighted for each contribution the existing literature that we discuss and with which we initiate a conversation. Table 25 below reuses Table 22, highlighting the contributions that open further research (in italic).

Table 25 – Design as a Dynamic Capability to achieve strategic change in organizations

	Our Propositions	Discussion / Our contributions complement
1	The *Dynamic Capability-building model comprises* eight building blocks: three components interrelated by three mechanisms and complemented by trigger and results. *Design Maturity Rainbow*	Existing Design management frameworks (Lockwood, 2009; Borja de Mozota, 2019, Cooper et al., 2011; Lewis et al., 2009), Existing innovation capability framework (Carlgren et al. 2016b; Börjesson and Elmquist; 2012) Existing Design maturity scales: The Danish Design Ladder (Ramlau, 2004); Storvang et al. (2015)
2	*A virtuous circle dynamic (reinforcement dimension) (punctual)* *A horizontal dynamic on Design Operations (frequent)*	Wrigley et al. (2020) "cultural capital"; Björklund et al. (2020) combination of wide and deep expertise; Junginger (2015) "organizational legacy."
3	About Design-capabilities-building: - Six practical recommendations for Design capability-building derived from the challenges observed (Helping old dogs to develop new tricks; Adapting designers to the organization; Planning for Design impact; Top management necessary endorsement; Prevent confusion over "Ordinary usages" and "Design usages" of the same terminology; Follow a direction, not a route) - The definition of the right conditions for Design integration. - A capability is about moving practice from a local to an organizational level; it takes time. *Four conditions that foster Design integration (hypothesis)* (Human centeredness, competitive advantage search through singularity, environmental changes and the digital transformation, purpose-driven companies)	Carlgren et al. (2016a) challenges identification for DT integration; Bjorklund et al. (2020) pitfall; Buchanan (2015) new fields of problems identification; mixed Management and Design education (Buchanan, 2015; Findeli, 2001; Conley, 2007; Borja de Mozota, 2018; Dunne & Martin, 2006; Meyer 2011); Meyer's (2011) advice on embedding Design in organizations; Seidel and Fixson (2013) risks of early novices' deceptive experiences detrimental to DT integration; Martin (2005) distinction between "reliability" versus "validity." Wrigley et al. (2020) four organizational conditions for Design integration; Börjesson and Elmquist (2012) work on innovation capability building Ben Mahmoud-Jouini et al. (2019) adoption of Design Thinking
5	An organization's Design capability is: a set of seven Design capabilities of two types: : (Designing, Spreading, Managing) and Building on the Operations (Building and Transforming)	Jevnaker (2000) set of six capabilities; Lockwood (2009) seven steps behind Design (Operations) capability building
6	The two types of Design capabilities correspond to two different orders of Dynamic Capabilities: second and higher-order. *Service companies count three first-order capabilities: the customer, the technological, the business*.	Collis's (1994) and Winter (2003) debate on higher vs. second-order capabilities; Schön's (1990) view of Design as a reflective practice Danneels' (2002) two first-order competence and Lenfle's (2008) six variables service innovation characterization.
7	*In-house Designers* assume a dual role and three-fold contributions. Designers are not a necessary nor sufficient condition for Design to happen; however, their absence may be a limit.	Bjorklund et al. (2020) alert on time spent educating others on Design; two roles for in-house designers (Junginger, 2015; Bjorklund et al., 2020) Gorb and Dumas (1987)

Indeed, based on these research limitations, we delineate further research opportunities based on our model following three foci: in-house Design capabilities, in-house designers, and Dynamic Capability-building and renewal.

First, for the study of organizations' in-house Design capabilities, we plan to continue our research in this area in two directions: on the one hand, investigating in a comparative setting the trajectories of Design integration and capabilities development in several

organizations; on the other hand, refine the Design-capabilities maturity Rainbow to offer for instance a typology of organizations maturity and Best practices per building block.

Second, it seems that further work is needed on the understanding of how to shape in-house designer profiles. This would call for a better understanding of in-house Design practitioners comparing Design-thinkers, retrained designers, junior expert designers, and senior expert designers' behaviors.

Third, apart from Design, we suggest using the model on other Dynamic Capabilities, especially for examining higher-order capabilities specificities and the related challenges.

To sum up, we show that our model opens new avenues for research on Dynamic Capability-building and a specific research program on Design in organizations.

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ECOLE DOCTORALE

Titre : Le design comme levier de transformation stratégique des organisations. Un modèle pour la construction d'une capacité dynamique.

Mots clés : Innovation, Transformation de l'organisation, Design, Capacités dynamiques, Intégration.

Résumé : Du fait de la digitalisation, du passage à une économie de l'expérience qui remodèlent les comportements des clients et d'un dynamisme croissant des marchés qui menacent la survie des entreprises établies; celles-ci cherchent à renouveler leurs capacités d'innovation. Ce contexte génère un intérêt pour l'intégration du Design dans des organisations qui n'y sont pas familières. Cette intégration peut prendre plusieurs formes: d'une expérimentation ponctuelle dans le cadre d'un projet à la construction d'une capacité spécifique qui se renouvelle en passant par la création en interne d'une entité dédiée à la pratique du design. À travers une étude de cas longitudinale de la transformation d'une mutuelle d'assurance française, nous étudions l'intégration du design par la construction et le développement d'une capacité interne. En conduisant une analyse inductive multi-niveaux de ce cas (le projet, l'équipe, l'organisation), nous proposons un modèle pour la construction d'une capacité dynamique de design constitué de six composantes principales interdépendantes qui se renforcent mutuellement (les ressources, leur déploiement, les activités, la capitalisation sur les activités, la constitution puis de la diffusion d'une expertise organisationnelle). Nous soutenons que la construction d'une capacité de Design consiste à passer ces composantes d'un niveau local (qui correspond à des mobilisations ponctuelles ou à l'échelle d'individus) au niveau organisationnel.
Nous montrons les changements que ces composantes induisent dans l'organisation et comment cette capacité de Design permet de répondre à deux orientations stratégiques : l'adoption du statut d'entreprise à mission (la recherche d'un impact positif sur la société comme un élément essentiel de performance), et la différenciation par la singularité plutôt que par le prix. Nous suggérons que la capacité de design d'une organisation se décompose en cinq capacités dynamiques de deux natures différentes : "Designing", "Spreading Design" et "Managing Design" correspondent à l'exercice du design, quand "Building Design" et "Transforming through Design" sont des capacités d'ordre supérieur qui contribuent au renouvellement permanent des premières. Tout en soulignant la spécificité du caractère mutualiste de l'organisation étudiée et son impact sur la validité du modèle, nous appliquons le modèle proposé comme grille d'analyse pour étudier la maturité en Design d'autres entreprises qui intègrent le Design comme nouvelle capacité d'innovation. Enfin, nous suggérons l'utilisation du modèle développé dans le cadre de futures recherches pour enrichir la compréhension de la construction et du développement des capacités dynamiques impliquant des compétences totalement nouvelles pour les entreprises.

Title: Design as a strategic lever for change in an organization. A model for Dynamic Capability building.

Keywords: Innovation, Organizational Transformation, Design, Dynamic Capabilities, Integration.

Abstract: As a result of digitalization, the shift to an experience economy reshaping customer behavior, and increased market dynamism that threaten their survival, established companies seek to renew their innovation capabilities. This context generates increased interest in the integration of Design in organizations. This integration can take several forms: from a one-off experiment within the framework of a project to the construction of a specific capability renewed by creating an entity dedicated to the practice of design.
Through a longitudinal case study of the transformation of a French mutual insurance company, we study design integration through the construction and development of a dedicated in-house capability.
Conducting a multi-level inductive analysis of this case (the project, the team, the organization), we propose a model for design dynamic-capability building consisting of six interrelated and mutually reinforcing key components (the resources, their deployment, the activities, capitalization on the activities, and the building and diffusion of new organizational expertise). We argue that building a Design capability consists of moving these components from a local level (which corresponds to one-off or individual-level contributions) to the organizational level.
We demonstrate the changes these components induce in the organization and how this Design capability enhances two strategic orientations: the adoption of the purpose-driven company legal status (the search for a positive impact on society as an integral part of the company performance) and differentiation through singularity rather than price.
We suggest that an organization's design capability can be broken down into five dynamic capabilities of two different natures: "Designing," "Spreading Design" and "Managing Design" correspond to Design Operations, while "Building Design" and "Transforming through Design" are higher-order capabilities that contribute to the permanent renewal of the former. While emphasizing the specificity of the organization's mutualist character and its impact on the validity of the model, we apply the model as an analytical grid to study the Design maturity of other companies that integrate Design as an innovation capability.
Enfin, we propose the use of the model developed for future research to enrich the understanding of the building of dynamic capabilities that incorporate new skills in an organization.