Innovation in a large scale agile organisation

A case study of ABN AMRO

Master Thesis

Jasper van Eck
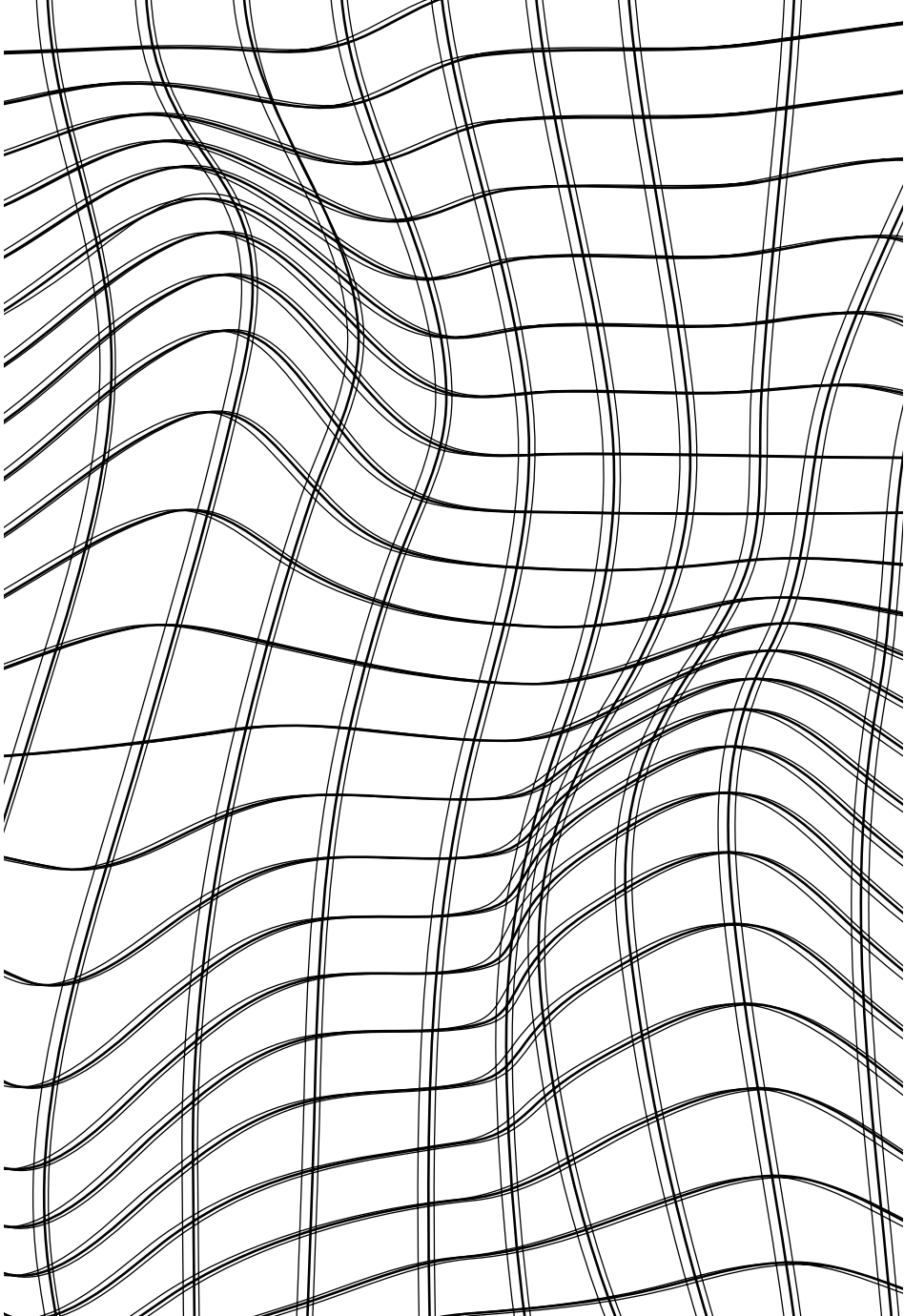
Innovation in a large scale agile organisation

A case study of ABN AMRO

Graduation Thesis

Delft University of Technology
MSc. Strategic Product Design
Faculty of Industrial design engineering
ABN AMRO Bank b.v.

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Executive Summary

Globalisation, digitalisation and digitisation have already affected many industries, the financial services sector included. However in recent years there have been developments that further increased market volatility. New regulations, new entrants and new technologies pressure established firms to respond. Agile methods seem to be the answer for these turbulent industries, and with it roots in software development, coincides neatly with the increasingly digital world we live in. It's not surprising to see traditional financial services firms use large scale agile transformations to get a grip on their environment. ABN AMRO also decided to implement a large scale agile framework tailored to their company. Agile methodologies are known to work well at small scale and in an IT context, however at ABN AMRO they've implemented it for over 6000 employees from both business and IT departments. Unsurprisingly ABN AMRO faces challenges within this agile organisation. One area in which they're struggling is managing innovation in a way that aligns with the flow of the tailored and scaled agile organisation. The objective was therefore;

To design solution that better aligns innovation processes with the flow of the tailored and scale agile landscape.

In addition, literature on large scale tailored agile transformation and innovation management within financial services firms is scarce. Both areas are relevant, however no research was found that combined these topics. Therefor in this thesis we attempt to answer the following question to fill this gap.

What are the challenges when managing innovation in a large scale tailored agile organisation inside the financial services industry?

Scaled & Tailored Agile Landscape

A revelatory single-case study design was used to uncover the challenges for implementing a tailored and scaled agile operating model at ABN AMRO. Firstly, data was collected from 10 semi-structured interviews with ABN AMRO agile coaches, 7 meeting observations and multiple internal documents. This data was coded and analysed based on Glaser's version of the Grounded Theory Method. The data was further validated with 12 ABN AMRO employees on different roles in the agile organisation. The resulting model was compared to an extensive Systematic Literature Review that included 76 sources of which some empirical papers but mostly experience reports. Within ABN AMRO's grid landscape teams work according to the Scrum Framework. Their organisation is largely based on the Spotify model, however they've added extra layers to it cope with the complexity of the organisation. A total of 17 challenges were identified, however the most prominent ones were: lack of clear vision and strategy, organisational siloing, linking strategy to execution, dependencies & limited autonomy, and traditional mindset and behaviour. The case study indicates that agile values like "autonomy" and "self-organisation" can work counter effective in a large complex agile organisation with many dependencies. Adequate support is recommended to overcome these challenges. Future research could look into which organisational structure types better support large scale agile frameworks.

Innovation Management

This study seeks to understand ABN AMRO's current efforts and challenges regarding innovation management, whilst also expanding the currently sparse literature on this topic. Through clustering insight cards based on data from 18 semi-structured interviews with innovation stakeholders and internal document analysis, a set of six challenge areas emerged. These findings are compared and extended with findings from literature, three case company interviews (Bol.com, Booking.com, RBS), three expert interviews, and two expert lectures. The six challenge areas were; lack of clear company vision and focus on innovation, organisational politics and management, "deficiency in skills, mindset, and support needed for innovation", trying to get (any) innovation onto a full backlog, lack of governance and guidance on innovation processes, and siloed innovation. A lack of discovery skills was found to be a significant problem, especially for incremental innovation and extends existing literature on innovation within large financial firms which have found these skills not to be a relevant barrier for radical innovation.

Define

Both the challenges from a large scale agile perspective and the company-wide innovation were merged into a set of six new challenges; "governance on innovation in the agile organisation", "deficiency of exploration skills", "getting innovation on the backlog", "Lack of clear guidance & leadership on innovation", "Dependencies & Limited Autonomy", and "Organisational and Cultural legacy". A workshop was organised with ABN AMRO employees as a way to gather generative data, which served as validation for these challenges. Based on the challenges and the underlying values discovered in the workshop the following design challenge was posited:

Design a solution that stimulates ownership and awareness amongst idea owners in the grid landscape towards customer problems and needs. This solution needs to provide clear guidance to enable autonomous and successful realisation of these customer centric innovations in the product and system oriented agile organisation

Develop & Deliver

Ideation sessions with SPD students, ABN AMRO employees and individual session served as a base to create ideas. Through selecting, clustering and conceptualising a first solution was created. This solution was further developed through the use of four iteration cycles each with improvements based on the learnings from the previous cycles. These learnings from feedback sessions and experiments further gave insight into challenges for innovation management. The main learnings throughout all four iteration cycles were; guidance and structure for innovation processes is essential, active support and training are needed to assure the correct interpretation of tools and processes, and a one size fits all process is unrealisting with varying contexts and maturities of agile teams.

Solution

As a solution to the design challenge and in order to help ABN AMRO with their innovation management efforts, the "User Needs Integration Canvas" was created which is an innovation process that focuses on bridging the gap between customer needs and the complex nature of ABN AMRO's agile organisation. It attempts to do so in three phases; immerse, internalise and inquire. The immerse phase focuses on discovering who ABN AMRO's customers and their respective goals are. In the internalise phase the goal is to understand which pains they experience in reaching that goal. The third phase is focused around understanding what the underlying systems and processes are for a particular pain (and thus part of the customer journey), and who is needed to improve that part of the customers' experience. Each of these phases offers templates and tools with explanations per step, so that teams can autonomously go through the process. The canvas can be used in a variety of ways and doesn't have to be followed from start to finish, this way teams can tailor it to their needs. The process zooms in specifically on the problem finding and does not yet cover solution finding, which is suggested as a recommendation for further development.

Conclusion

In order to survive, a financial services firm must manage to both innovate incrementally as well as radically. Since agile methods don't cover the innovation process in full, extra efforts and support should go towards managing incremental innovation, the front-end of innovation specifically. Barriers are faced when trying to implement both radical and incremental innovation initiatives into the existing organisation, as they're faced with challenges such as organisational siloing, and the not-invented-here syndrome that withhold them from being prioritised on the backlogs of agile teams. This also partly fuelled by dependency prone organisational structure which stems from its complex IT landscape. In addition traditional financial service providers carry cultural legacy, lack innovation legacy and explorative competences. The role of the individual, with their skills, mindset and behaviour are imperative in in the journey towards a nimbler and more innovative financial service provider. There is no shortcut in becoming an innovative company, whilst a large scale agile framework is a step in the right direction, still a lot of time, effort and patience is needed beyond this step.

Preface

In front of you lies the summary of the last six month of my life. It's the final deliverable to my Strategic Product Design Master, and it's a big one. It embodies a lot of what I've learned in the last six years during both my BSc. and my MSc. at the IDE faculty as well as the internships I've done during this time. One of these internships actually sparked the idea for this thesis.

During my internship in London as a Product Owner, I experienced what it was like to work in an agile team. A small interdiscplinary team, delivering working software incrementally, with continuous feedback from clients and users. My interest in the agile way of working sparked there. At that moment in time I noticed that our way of working didn't align with the client, which was a large traditional financial service firm. I was intrigued by the slow, political and arduous processes of this bank, especially in contrast with our way of working. In most cases, their way of working held the team back and that's when I started to wonder, why can't traditional financial service firms work the way we did?

On the other hand, I've always been engaged with the digital world, following trends, new products releases and even writing articles about upcoming technologies for Mirabeau. During my time at Microsoft I further confirmed my interest in the digital world and even further narrowed it down to IT. This interest in IT and the Agile way of working neatly coincided in the role as a product owner. I loved the broad spectrum of responsbilities of a Product Owner role and how they aligned with what I've been learning over the past six years; being the glue between human desirability, technical feasibility, and business viability.

One of the goals for writing my thesis for ABN AMRO was to better understand the organisational culture and processes, as a way to better prepare myself for what's coming once I finish this thesis and use this to my advantage in combining the desirability, feasiblilty and viability successfully. During the past six months, my learnings have exceeded my expectations manifold. From understanding organisational environments to finding new opportunities in the financial services industry, all of these insights and learnings unfortunately don't fit in this thesis. I would have never been able to learn as much on my own, therefor I would like to thank some people that have enabled me on this journey of learning.

I would like to thank Joost, for giving me the opportunity to graduate within ABN AMRO at such an amazing spot in the company. Your positivism and enthusiasm have always motivated me to keep going, whilst also taking some stress of my shoulders. To all my colleagues at ABN AMRO, a big thank you for all the support, coffee and laughs you've given me during my time at ABN AMRO. Your interest in my work and the appreciation you showed towards it really gave purpose to my time at the company. Next, I would like to thank Deborah for giving me the freedom and trust in approaching this projects, whilst alwaysl giving honest, clear and concrete feedback where needed. Tomasz, your critical questions and open-mindedness have really helped me throughout the project in taking a step back and looking at the problem from a different perspective. I liked your approachability and the informal nature of our coaching talks. To all the individuals from external companies that were willing to set some time aside for me, I thank you for your insights and different and refreshing perspectives. Lastly, I would like to thank my family and my friends for helping me and supporting me in this journey which sometimes was an emotional rollercoaster. The value of your constant support throughout this thesis jouney as well as my Masters can't be expressed.
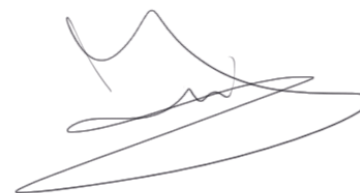
Im excited to present to you my master thesis.

Jasper

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Reading guide

Examples
In the thesis, examples will be positioned next to the main text in an italic typeface with a dotted line above it. See the example below for indicative purposes.

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Human Figures
Throughout the thesis, human icons will be used multiple times. This human figure can indicate both ABN AMRO employees, ABN AMRO customers or just humans in general. There is thus no association between the figure and a type of stakeholder
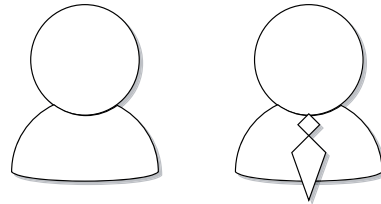
Abbreviations
Some terms which will be used on a regular basis throughout this report. If you're ever lost on the meaning of a word youcan always return to this page.

ASD	Agile Software Development
PO	Product Owner
GO	Grid Owner
GTM	Grounded Theory Method
SM	Scrum Master
VPB	Value Proposition Block
VDB	Value Delivery Block
SAFe	Scaled Agile Framework
QPR	Quarterly Portfolio Review
SIP	Strategic Innovation Portfolio
UX	User Experience
CX	Customer Experience
UNI Canvas	User Needs Integration Canvas
MT	Management Team

Glossary
Some terms will be used on a regular basis throughout this report. If you're ever lost on the meaning of a word you can always return to this page.

Agile	Being able to deal with new situations or changes quickly and successfully
Agile Software Development	Agile software development is an evolutionary (iterative and incremental) approach which regularly produces high quality software in a cost effective and timely manner via a value driven lifecycle.
Scrum	The most famous agile method/framework which represents an interative and incremental approach to software development using cross-functional and autonomous teams.
Backlog	An artefact used in scrum in which work items are prioritised based on value
Product Owner	is representative of the customer and the stakeholders of the project and has responsibility of the product backlog. His goal is to maximaise the value that the team delivers to all stakeholders.
Scrum Master	The scrum master, facilitates the entire scrum process and has responsiblity over removing impediments that obstruct the teams from delivering the product goald and deliverables
Sprint	Naming for a single timebox within the Scrum Framework, generally lasts between 1 to 4 weeks
Kanban	An approach to visualise workflow that uses lanes (to-do, doing, done is the most well known and simplest one).
Innovation	is a multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace."
Innovation Management	What companies habitually do to manage the process of carry ing out innovation.
Exploration	Includes things captured by terms such as search, variation, risk taking, experimentation, flexibility, discovery, and innovation
Exploitation	Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, and execution
Organisational Ambidexterity	An organisation's ability to manage both today's business efficiency and profitability as well as long term adaptability (interplay between exploration and exploitation)
Grid Landscape	Name of the agile organisation that's part of ABN AMRO
Block	An autonomous and agile development team in the Grid landscape
Grid	A grouping of blocks in the same business area (e.g. mortgages)
Value Proposition Block	A block that focusses on supporting the value proposition blocks with new proposition development and business implementation (mainly consists of business employees)
Value Delivery Block	A block that has end-to-end responsibility over a certain piece in the value stream (e.g. systems and components). The block generally consists of mostly IT employees.

1.1 Innovate or die!

Our human survival instinct is very powerful and large parts of what we as humans have become - how we think, what we feel and how we interact with peers - can be attributed to that instinct (Taylor, 2012). In order to survive, mankind was always forced to find and create solutions that helped them adapt to the changing environments. Our prehistoric ancestors known as the hunter gatherers for example (e.g. human beings living in societies in which food is obtained by collecting and hunting), had to adapt to survive in their environment as well. In order to stay safe from predators they used fire, in order to survive cold temperatures they created shelter and clothing, and hunting larger and nimble animals became much easier through the invention of the bow and arrow (History.com, 2018).

Whilst survival is still one of mankind's base motivations, the meaning of it has changed significantly since the day the first hunter-gatherers walked the earth. Imagine standing face to face with a hungry tiger, your options are rather clear; run for your life or die. Today's threats are however not as immediate, obvious and predictable as the ones our ancestors faced. No longer do we worry about shelter and food for survival (in developed countries), however we worry for example about our status, next pay-raise and/or promotion. Similar to individuals, businesses are also driven by this survival-instinct, as they continuously have to survive new threats in an environment that changes at an accelerated pace. Taking a glance at the average lifespan of companies on the S&P 500 (a list of U.S.A.'s 500 largest companies), gives an impression of the increasing turbulence in the business environment, as there's a clear downward trend in the average lifespan of the companies in the list. In 1965 the average tenure of companies on the list was 33 years, whereas now that has shrunk to 24 years and the expectation is that in the next decade half of the companies on the list will be gone (Anthony et al., 2018). Instead of wild tigers or harsh winters, the threats for businesses today take complex and unpredictable forms such as technological advancements like artificial intelligence, blockchain, augmented reality or new market entrants (e.g. "startups") that take advantage of digitalisation, globalisation, and other developments. These examples are only a few of many that illustrate that in order to survive these hostile environments, incumbent firms need to adapt and respond adequately. Much like the hunter-gatherers, firms need to create, find and embrace solutions to survive their competitive landscape or as Dr. Matson (award winning innovator) conveniently summarises in his book title, its either "Innovate or die!".

1.2 Disruption in the world of finance

Throughout recent decades globalisation, digitalisation and digitisation seem to leave no industry untouched. In recent years, the financial services industry has been increasingly receiving attention as a result of multiple developments. Especially after the financial crisis in 2008, change in the market started to accelerate (Das et al., 2017)

New technological developments like artificial intelligence, big data, cryptocurrencies and blockchain are bound to have a great impact on the industry. New legislations like GDPR, PSD II, MIFIT, and BASIL III to name a few, are aimed at opening up the market and will increase the financial service offerings for customers whilst simultaneously driving prices down (Das, 2017). PSD II for example will require all financial service providers to share data about their customers with third parties, both banks and non-banks (if the customer permits them to do so), and allows these third parties to retrieve account data and perform transactions on behalf of the customer. This will for example allow customers to have all of their banking accounts in one location (also known as multibanking). See the example of Yolt (Fig. 1-1), which is a multi banking app that aggregates all of your banking accounts in one place.

Digitisation and digitalisation has already reached into the lives of customers and seamless, personal and digital experiences are (becoming) the standard. Take a look for example at Netflix and Youtube which are the services used on a daily basis by customers which heighten customer demands and expectations for amongst others, financial services as well. New market entrants that better respond to new technological developments (better known as Fintechs) or deliver on customer demands and expectations with regards to a seamless banking experience (known as "challenger banks") are quickly gaining traction or have already done so.

Technological progression, new legislations, heightened customer demands and new entrants altogether put a serious strain on traditional financial service

Fig 1-1 "Yolt Multibanking app"

I Introduction
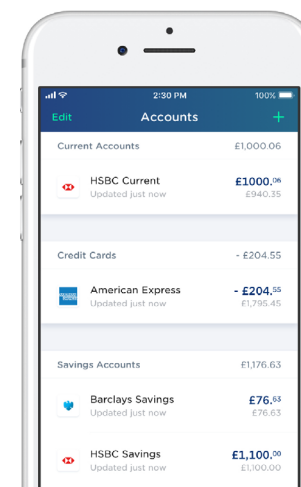
providers. Not surprisingly a shift is happening in the approach these traditional firms are taking on innovation. Rapidly adapting to these changing market and technological changes and continuous innovation of products, services as well as operations are crucial for the survival in these environments (Denning, 2011)

1.3 The age of agile

In the age where increasingly we're surrounded with products that have a digital component to them, a more common way of innovating is by incrementally and iteratively building and improving products and services to allow for flexibility in the process. Just as how Apple and Android release new versions of their operating system multiple times per year to add or remove features to improve their product (for instance interface design updates, safety features or even a "portrait"-photography feature). This time-boxed, iterative and incremental approach to product and software development is called "Agile" and stems from software development industry. The Manifesto for Agile Software development was defined by a group of anarchistic software developers in the 90's who all created lightweight software development methods in response to heavyweight processes that didn't allow for changes in the process, and has received much positive attention throughout the 2000's. Not surprisingly, as literature has proven the usage of agile methodologies to result in; improved creativity and productivity, faster adaptation to change, improved value for the customer, and faster delivery (Hobbs & Petyt, 2017). Agile methods seem to be the answer for the current day turbulent industries, and with it roots in software development, coincides neatly with the increasingly digital world we live in. It wasn't long before companies tried to reap Agile's benefits on a larger scale. Companies like Microsoft, IBM, Cisco and more have attempted to scale Agile Software Development (ASD) to a larger context and frameworks like the Scaled Agile Framework (SAFe) aim to support other companies that also want to work agile on a larger scale. Increasingly agile is applied in industries outside of software development. It's not surprising the financial services industry is one of them with ING being one of the first to make the transition to the agile way of working in the Netherlands. Large scale agile transformations are increasingly used within these incumbent financial services providers in the hopes of getting a grip of their unstable environments.

Being among the top three of the financial service providers in the Netherlands and serving as a case company for this thesis, ABN AMRO places itself third behind Rabobank and ING. Whilst a spot in the top three might sound comforting, ABN AMRO feels the pressure from the changing financial landscape and understands that they need to progress and innovate in order to survive. Therefore, they started an agile transformation in 2014, in order to keep up. Whilst frameworks like SAFe serve as a starting point for Agile practices within large-scale contexts, ABN AMRO made the decision to introduce a fully tailored approach guided by a dedicated department within their company.

1.4 Case company: ABN AMRO

Whilst an organisational transformation might sound like a big step for any company (which it is nevertheless), ABN AMRO has a history of rigorous changes for the sake of survival. ABN AMRO Bank N.V. has a complex history of company acquisitions, mergers and fusions that go all the way back to the 18th century. The origins of their name give away some of its complexity;

The primary ancestor of ABN AMRO is the "Nederlandsche Handel-Maatschappij" (NMH), which was an initiative of King Willem I established in 1824. In 1964, the NHM merged with "de Twentsche Bank" to form "Algemene Bank Nederland" (ABN). In that same year the "Amsterdamsche Bank" (Established in 1871) and the "Rotterdamsche Bank" (Establishd in 1863) fused together to form the AMRO bank. Later in 1991 a fusion between AMRO bank and "Algemene Bank Nederland" formed the ABN AMRO.
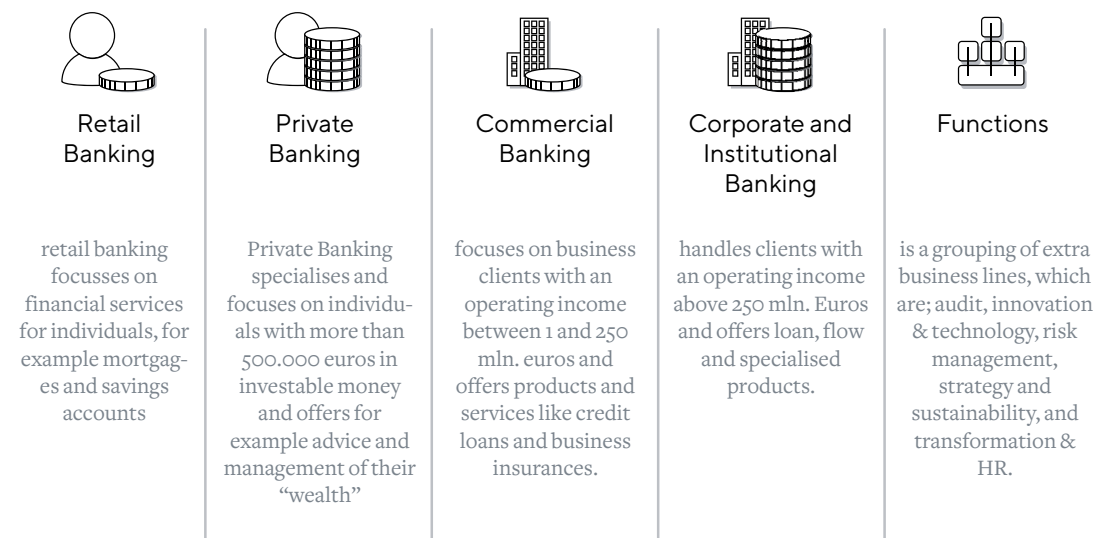
In the years that followed for ABN AMRO, many acquisitions were made and the bank kept on growing. However in 2007, ABN AMRO bank ran into a future crisis and started to look for bidders. After an acquisition war that included many different bidders a decision was made to split ABN AMRO bank between Royal Bank of Scotland (RBS), Banco Santander and Fortis. Many deals, changes and agreements later in 2010 2ABN AMRO bank N.V fused with Fortis bank N.V to become the ABN AMRO bank N.V as it exists today.

New kids on the block
Coinbase with an estimated $1.6bln market value, is a cryptocurrency exchange that allows user to buy and sell cryptocurrencies and is a perfect example of a company making use of these new technologies. The "fintech" Avant is no different in that sense, by offering personal loans using artificial intelligence and consumer data to determine personalised interest rates, they've been valued at $2 billion. N26 is an example of a "challenger bank" who focuses on being the "mobile bank". They offer a mobile banking application that focuses on the user experience and offers features that allow you to invest your money through the app. Last June they've hit a 1 million user milestone and managed to do so in 5 years, although it should be noted that they've doubled from 500.000 user to 1 million in merely nine months. These "Fintechs" and "Challenger Banks" are growing fast and shouldn't be taken lightly by traditional market leaders.

ABN·AMRO

ABN AMRO has four different business lines that each focus on different types of customer segments

Retail Banking
retail banking focusses on financial services for individuals, for example mortgages and savings accounts

Private Banking
Private Banking specialises and focuses on individuals with more than 500.000 euros in investable money and offers for example advice and management of their "wealth"

Commercial Banking
focuses on business clients with an operating income between 1 and 250 mln. euros and offers products and services like credit loans and business insurances.

Corporate and Institutional Banking
handles clients with an operating income above 250 mln. Euros and offers loan, flow and specialised products.

Functions
is a grouping of extra business lines, which are; audit, innovation & technology, risk management, strategy and sustainability, and transformation & HR.

CEO
Kees van Dijkhuizen

Headquarters
Amsterdam Zuidas

Employee count
19.954

Operating income
€9,92 bln

Net Profit
€2,97 bln

ABN AMRO's purpose during the writing of this report was "creating space for dreams and ambitions; driven by passion, guided by expertise". This purpose serves as a compass and helps to create shared goals. This purpose is carried by four strategic pillars; customer-driven, "invest in the future", moderate risk-profile and sustainable growth. These four strategic pillars are further translated in four strategic priorities towards 2020; expertise, enhance customer experience, innovation & growth and fast delivery. ABN AMRO aims to be a customer and knowledge driven bank with the ambition to belong to best banks in the digital area. In sum ABN AMRO's strategy is to be customer driven, to invest in the future, not to take unnecessary risks and focus on sustainable growth.

1.5 The problem

It's no surprise ABN AMRO isn't known for their innovativeness (just like many other banks), as traditionally banks have focussed on incrementally improving their offerings with little focus innovation (Das et al., 2017). Whilst ABN AMRO understands that they need to innovate, their lack of focus on it historically doesn't mean they're incapable of doing so. Imagine an old man that doesn't speak Spanish but want to do so for example. He can practice and learn to eventually master the language, however learning the language when he was a kid would have been much easier for him (Schmid, 2016). This same situation can be compared to ABN AMRO, who is trying to learn the language of innovation at a later age, where the environment and systems that have been established over the years don't necessarily support this language. Besides serving as a stepping stone towards their strategy, the large scale tailored agile transformation can be perceived as a redesign of the environment that better enables them to speak the language of innovation.

Though as warned in literature, the large scale tailored agile transformation at ABN AMRO did encounter multiple challenges. Transforming a total of 6000 employees from both business departments and IT departments into a single agile organisation consisting of over 500 agile teams isn't something that can be expected to go right in a single go. With the help of the agile transformation department called "Fast Forward", they're continuously trying to improve and solve challenges in this agile organisation responsible for (new) product and service development, which they call the Agile Grid Landscape.

One of the challenges they're facing is related to the management of innovation within their large scale tailored agile organisation. Whilst agile methodologies are known to deliver successful products faster than traditional methodologies, they are mainly innovating on the feature-level (Hobs & Petyt, 2017; Kettunen, 2009). This is known to work well in an isolated IT context, however in ABN AMRO's tailored agile landscape they've included large parts of their

business departments and it's starting to spread to larger parts of the organisation as well. Existing agile methodologies do not cater for managing innovation within an organisation as it starts to go beyond software development organisations solely and touches parts of the organisation like marketing and HR (Kettunen, 2009; Hannola et al., 2013). ABN AMRO finds it challenging to manage innovation in a way that aligns with the flow of the tailored and scaled agile organisation. The objective is therefor as follows;

To design solution that better aligns innovation processes with the flow of the tailored and scale agile landscape.

In addition, this thesis also aims to extend the current literature on innovation management in an agile organisation. In order to do so this thesis will look at the problem from two seperate literature streams; large scale agile transformations (from a software development stream) and innovation management (from a business management stream).

From a large scale tailored agile transformation perspective, research is still in its infancy and lacks empirical research on the topic of tailoring and scaling agile approaches (Moe & Dingsoyr, 2017). Existing scaling frameworks like SAFe and Spotify do incorporate "innovation" as elements in their frameworks, however materials they provide on these elements is scarce (Kniberg & Ivarsson, 2012; Scaled Agile Inc, 2017). The outcome of this thesis will shed more light on this as well. From an innovation management perspective, multiple studies have been conducted investigating the use of appying agile methods as an approach to innovation processes (Hannola et al., 2013; Juhola et al., 2013; Tervonen et al., 2014), however articles about the management of innovation within a large scale and tailored agile organisation were absent during the writing of this thesis (Fig. 1-2). Furthermore, few studies focus on challenges for innovation within large financial service firms (Das, 2017), which indicates a lack of research on this topic as well. The main research question posited therefor is:

The answer to this question will help in reframing the problem which subsequently serves as a base for finding ways to manage innovation that align with ABN AMRO's large scale tailored agile landscape. Moreover it will add to the literature gap on managing innovation in a large scale agile organisation. With the increasing amount of organisations that plan to (or already have) transformed to agile ways of working at larger scale, an answer to this research question will help them in their individual journeys in becoming agile. Moreover, this information will provide insight into what to keep in mind when adopting an agile methodology and how it might influence their innovation management efforts and subsequently a firm's innovative capability.

1.6 Project Approach

In order to find an answer to the previously stated question, an adapted variant of the double diamond approach is used (Nessler, 2018). This adapted version can be found on the next page (Fig. 1-3). The discover phase is split into two separate streams; ABN AMRO's large scale tailored agile operating model and their innovation management efforts. Based on this split two sub research questions are formulated that are answered in each of these sub sections;

1. *What are the challenges within this large tailored and scaled agile operating model?*

2. *What are the challenges for innovation management within ABN AMRO?*

The outcomes of these phases are combined into a set of challenges that helps to redefine the problem statement for ABN AMRO. Based on this problem statement an interative approach is taken in developing and delivering a fitting solution to the problem statement (See Appendix A for the initial graduation assignment).

What are the challenges for managing innovation in a large scale tailored agile organisation inside the financial services industry?
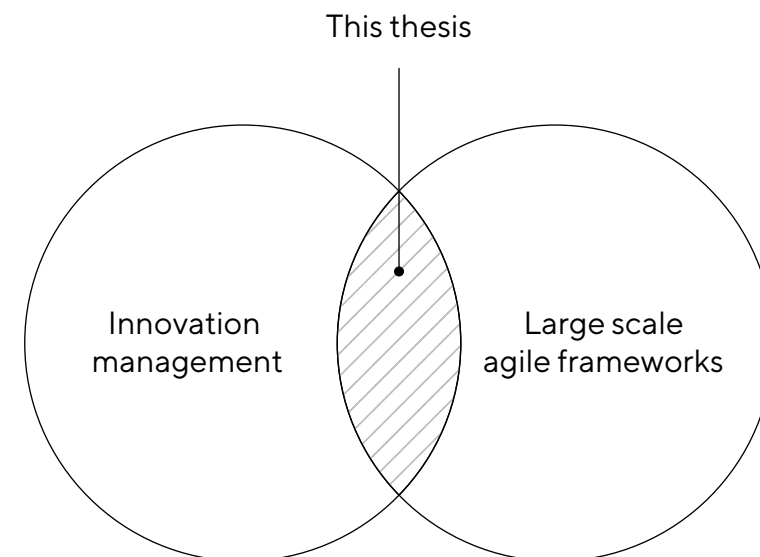

Fig 1-2 "Focus of thesis"

1.7   Report Structure

Large Scale & Tailored Agile Landscape

The second chapter is built around finding an answer to sub-research question 1. Through the use of an extensive literature review, interviews and meeting observation data an answer was formulated this question. The section starts with a more in depth explanation of agile and extends on ASD in a large scale context. It elaborates on ABN AMRO's tailored agile landscape presents the challenges within it.

Innovation Management

Similar to the approach in the previous section, a literature review and interviews both with internal and external parties were used to answer the previously stated sub-research question 2. This third chapter, informs you of how ABN AMRO has organised innovation across the entire firm and briefly explains the challenges related to it

Define

Through combining the challenges found within both preceding chapters, a crossover was made to find challenges for managing innovation within the tailored agile landscape. The section further elaborates on these challenges and follows up with a more refined problem definition

Develop & Deliver

The aim of this chapter is to explain the approach taken in finding a solution and the iterations that preceded the final version. The learnings of the experiments and tests in this iterative approach are discussed in relation to the challenges for innovation and what that means for the further tackling of these problems.

The Solution

This chapter presents the latest iteration of the solution; the "User Needs Integration Canvas". Furthermore, an implementation plan is presented along with directions for further improvements and recommendations about the canvas

Discussion & Conclusion

In the discussion and conclusion the findings from "large scale tailored agile organisation", "innovation management", and "Develop & Deliver" are jointly discussed in the light of the main research question. Moreover, the implications of the found challenges are discussed in a broader context and what they mean in the context of a large scale agile as way to survive the competitive landscapes.

Reflection

The thesis finishes with a critical reflection on the project, the approach taken and the overall progression. Besides personal thoughts and opinions on the subject matter, this chapter also presents reflections on personal developments and the goals that were set at the start of the project.

Scaled & tailored agile framework
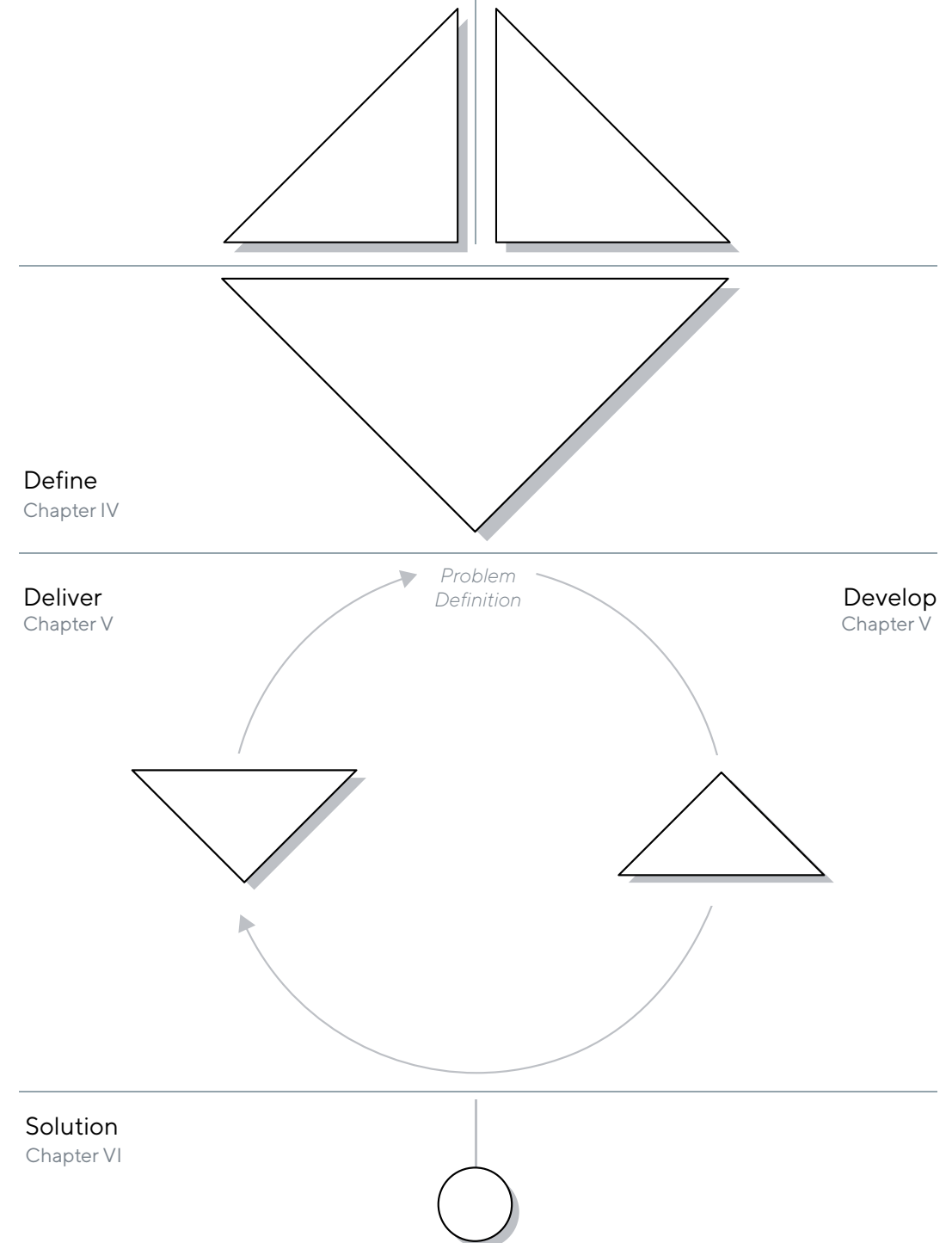Chapter II

Innovation management
Chapter III

Define
Chapter IV

Deliver
Chapter V

Problem Definition

Develop
Chapter V

Solution
Chapter VI

Fig 1-3 "Thesis Approach"

II Scaled and tailored agile framework

2.1   Introduction

Little did Japanese emperor Hirohito know that when he, on the 15th of August 1945, officially announced the surrender to the Allies (USA), he started a chain reaction that contributed greatly to "agile" as we know it today. World War II was over and a time of uncertainty and chaos fell over Japan, which was a perfect breeding ground for new ways of thinking. After years of knowledge exchange between the U.S and Japan in amongst other areas, manufacturing and quality control, Japan managed to refine and apply the newly gained knowledge and eventually even redefine manufacturing. In 1986, a paper was published called "The new new product development game" by Takeuchi and Nonaka, seeking to explain the success of these japanese companies and their secret "techniques". In this paper the writers likened the teams in the companies they studied to rugby teams, specifically the scrum formation. This article later formed large parts of the Scrum agile software development approach, which was invented by (amongst others) Jeff Sutherland and Ken Schwaber and is now the most widely used and known agile method (Rigby et al., 2016; VersionOne; 2018). They developed Scrum as a response the the heavyweight development methods (for example waterfall which was popular back then) which used upfront planning of requirements and "freezing" them, which proved to be problematic when changes needed to be made late into the development (which happened frequently back then as well as today). Sutherland and Swaber were not alone, on February 11-13, 2001 at The Lodge at Snowbird ski resort in the Wasatch mountains of Utah, they met with fifteen others that shared their point of view; they were fed up with the heavyweight traditional development methods and embarked on a journey to find solutions in the decades before. This "gathering of organizational anarchists" as Beck proclaimed resulted in the birth of the "Manifesto for Agile software development" as we know it today. A set of four values and twelve principles that form the basis for lightweight approaches, labeled by the term "Agile", which worked remarkably well for marketing purposes (Ebert & Passivaara, 2017). See Appendix B for the 12 principles.

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

(Fowler & Highsmith, 2001)

Agile approaches have received favorable responses over the years in the software development industry (Hobbs & Petyt, 2017). Experience reports and case studies from companies like Microsoft, Cisco and IBM further fueled the spreading of "Agile" in software development in its early years (Ambler, 2009; Begel & Nagappan, 2007; Power, 2001). It wasn't long after the first reports on the benefits on agile for software development that companies and practitioners alike tried to replicate it on a bigger scale. Large firms like Nokia, Ericsson, Cisco and Amazon all tried to adopt agile to a larger scale and quite soon after, agile was scaled in companies from other industries as well such as the financial services this thesis focuses on, despite the dissuasions made by researchers and practitioners (Reifer et al., 2003). Agile was built for software development projects that fall within the "Agile Sweet Spot", described by Kruchten (2013) as projects which consists of small collocated teams working on small, non-critical, greenfield, in-house software projects with stable architectures and simple governance rules. And the benefits gained from agile approaches don't apply directly to a larger scale. This interest in scaling agile practices is exemplified

by the fact that "Agile in the large" was chosen to be the most important topic by practitioners at the XP2010 conference (Dingsøyr et al., 2016). Whilst the concept of using an agile approach on a larger scale sounds enticing, in practice scaling agile has proven to be a significant challenge and has "little empirical evidence of successful cases" (Rolland et al., 2016; Haaster, 2016).

Challenges for large scale agile frameworks are widespread. Some challenges for example are related to coordination between multiple teams or organisational mismatch (Chow, & Cao, 2008; Paasivaara et al., 2018). However there are also challenges on a more holistic level as agile transformations generally require changes to an organisational culture (Paasivaara & Lassenius, 2017). Evenmore, in highly regulated environments, which the financial services industry is, additional challenges and constraints should be expected (Weiss & Brune, 2017).

As companies and practitioners who embarked on their large scale agile journey increasingly ran into challenges, a need for frameworks and models arose which addressed these issues. Over the years many types of scaling frameworks have been conceived (mostly by consultants), such as SAFe, LeSS (Large Scale Scrum), Spotify, Disciplined Agile Delivery (DAD), and Nexus. Even though these frameworks do provide a useful starting point for those aspiring to implement large scale agile, most of them lack empirical evidence of their claimed benefits, some are even received with criticism as they add to "bureaucracy" and hierarchy, and many researchers and even creators of these frameworks state that the tailoring of these methodologies to the companies' environment is crucial (Ambler, 2009; Ambler & Lines, 2014; Ebert & Paasivaara, 2017: Laanti, 2014; Nerur et al. 2005; Tian, 2014).

Paasivaara (2017) only recently stated that there is a lack of "proven models and research results on how to do a large-scale agile transformation". Only a handful of empirical case studies on scaled and tailored agile methods exist, even less on how to tailor agile scaling frameworks and the challenges related to it (Dingsøyr & Moe, 2017; Dikert et al, 2016). Moreover, this literature deficit extends into the area of agile transformation within the financial services industry (Cawley et al., 2010; Weiss & Brune; 2017). Unfortunately, this hinders both researchers and practitioners in understanding and acting on the complex nature of tailoring and implementing large scale agile frameworks (Begel & Nagappan, 2007; Dikert et al., 2016).

In this chapter this knowledge gap is attempted to be addressed through describing a case study on how ABN AMRO tailored a large scale agile framework. It does so by trying to find an answer to the following question;

What are the challenges for tailoring a large scale agile framework within a large financial services firm?

2.2 About Agile

"Agile" is an umbrella-term, that gained its popularity from the "Manifesto for Agile Software Development". It covers many different methodologies and frameworks such as Extreme programming (XP), Crystal, Scrum, Kanban and many more. The meaning and defnition of "Agile" has received many different interpretations and has over the recent years gained its status as a buzzword. The size and breadth of the meaning of the word "Agile" causes confusion sometimes as to what is exactly meant with it. In order to avoid confusion throughout the thesis, a clear definition will be given in this section. Furthermore, general concepts related to agile and large scale agile will be introduced.

2.2.1 – Defining agile

There is no singular definition of the construct "Agile". In Table 2-1, some definitions are presented to give an implression of what is meant with agile.

Whilst the applicability of the Cambride dictionary definition is all-encompassing, it fails to inform on the core differences in interpretation of the concept between different industries and between different applications of it. So in a software development context, the definition of Scott Ambler wil l be used.

There isn't a singular definition in literature of large scale agile, which is exemplified by the variations in definitions as well as scope and size of the cases which are studied (Dingsøyr et al., 2014; Dingsøyr et al., 2017). A taxonomy of what exactly is meant by "large" in large scale agile was put forth by Dingsøyr, Fægri and Itkonen to provide clarity for future research. In this thesis we take their definition going forward where large-scale agile development is defined as

Their definition does not account for the appliance of agile methodologies in large enterprises, which is generally called "Enterprise Agile". Since this thesis touches upon elements of Enterprise Agile, an adapted definition of "Enterprise Agility" is taken from Overby et al. (2006)

Concept	Context	Definition	Example	Source
Agile	General	"able to deal with new situations or changes quickly and successfully"	Your train got cancelled, to attend an important meeting you grab a cab.	Cambridge dictionary
Agile Software Development	Software Development	"Agile software development is an evolutionary (iterative and incremental) approach which regularly produces high quality software in a cost effective and timely manner via a value driven lifecycle. It is performed in a highly collaborative, disciplined, and self-organizing manner with active stakeholder participation to ensure that the team understands and addresses the changing needs of its stakeholders. Agile software development teams provide repeatable results by adopting just the right amount of ceremony for the situation they face." (p. 6)	A small team of developers that are working on a banking app. Recently, Apple released Apple Pay and customers are begging for it. They set everything aside and start to build the Apple Pay support.	Ambler, 2009
Large Scale Agile	Software Development	"Agile development efforts that involve a large number of actors, a large number of systems and interdependencies, which have more than two teams and very large-scale as agile development efforts with more than ten teams"	Multiple agile teams working on the newest version of PowerPoint.	Dingsøyr et al. 2016
Enterprise Agility	Business	"A firm's approach aimed at improving its capability to sense environmental change and respond readily"	A firm like Disney that decides to build a TV streaming platform	Overby et al., 2006

Fig 2-1 "Agile definitions"

The Scrum framework is by far the most popular Agile method. 56% Of the respondents of one of the largest agile survey's (State of Agile) use Scrum. Scrum is one of the iterative and incremental agile frameworks used for developing, delivering and sustaining complex products (Sutherland & Schwaber, 2018). It's used by small teams generally between 3 to 9 people that break up their work in smaller chunks generally called user stories, which can be completed within timeboxed iterations called sprints (generally between a week & 4 weeks). They track progress on this work and possible replan during 15 minute meetings every day, called daily scrums.
Scrum introduces three artefacts: the product backlog, the sprint backlog and the product increment. The product backlog is a prioritised list of pieces of work/ requirement (generally user stories) based on a product vision and user and stakeholder needs. From the backlog items are pulled into the sprint backlog. The selection of the work that's going to be done happens before a new

sprint and is called a sprint planning. A sprint backlog is a list of work items that the team aims to complete within the set timebox for a sprint. After a sprint is finished, the team presents the sum of work that was finished in that sprint integrated with all the previous work, also called the product increment, to stakeholders in the sprint review. The team reflects on the past sprint during the sprint retrospective.
In Scrum there are two very specific roles in a team; the product owner and the scrum master. The product owner is representative of the customer and the stakeholders of the project and has responsibility of the product backlog. His goal is to maximise the value that the team delivers to all stakeholders. The scrum master, facilitates the entire scrum process and has responsibility over removing impediments that obstruct the teams from delivering the product goals and deliverables.
The entire process from stakeholder needs all the way up to product increment is visualised in Fig 2-2.
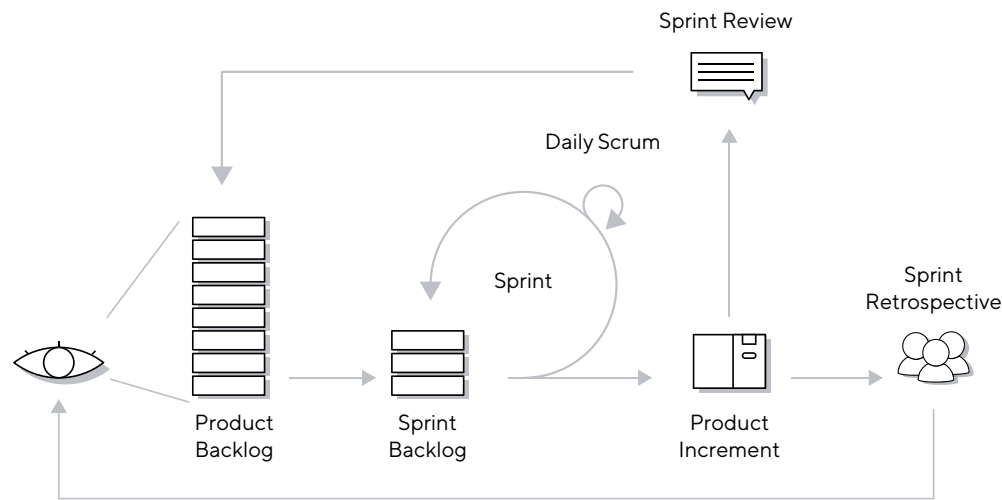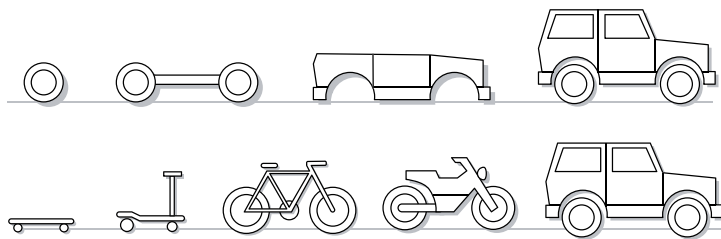

Fig 2-2 "Scrum Framework"

Fig 2-3 "Incremental Value Delivery"

Delivering value
A common example used for agile software development is the example on the left. It examplifies the way value is delivered in each iteration or in scrum terms; sprints. Instead of building something big and then showing it at the end, yout deliver value up front and build from there.
(See Fig 2-3)

Fig 2-4 "Agile Scaling Frameworks"

In this thesis, it's important to acknowledge the different levels on which agility can be applied. As Power (2014) describes; there's a difference in "agile approaches used by a team in a large organization, agile approaches used on a large development effort, and organization agility (p.84)". In software development agility is mainly concerned with project-level processes, where there's a different connotation to agility on a company-level (Kettunen & Laanti, 2008). Enterprise Agility is seen a concept that goes wider than software agility, and is often combined with ideas from the Lean movement (van Haaster, 2016). Arguably, since agile software scaling practices have increasingly been adopted, these software development approaches are also "moving up" into more holistic and broader fields of agility.

As for the scope of "Agile" in this report, "software development" will be the default. This is in line with ABN AMRO's reorganisation scope: IT "change" (so production of software as new products or product improvements). However throughout this report, it becomes evident that the scope of "Agile" reaches beyond just software development within ABN AMRO, in cases where this scope changes it will be made explicit (and will be mainly indicated by "agility" or "Enterprise agility.")

2.2.2   Reasons for scaling agile

Reasons for practitioners and companies to scale and adopt agile is widespread, but the end-goal for all is largely similar: to be able to respond quicker and better to the accelerating change in their environments (Botanni, 2010; Weiss & Brune, 2017).

The top five key motivators/reasons for adopting agile as reported in Version One's (2018) survey results were; accelerated software delivery, enhanced ability to manage changing priorities, increased productivity, improved business and IT alignment and enhanced software quality. In research multiple studies have reported similar motivators for scaled agile adoption; (1) to be faster, more efficient, and more responsive in software delivery and to the customer, (2) to improve the product and software quality and innovativeness, (3) to improve collaboration and organisational alignment and (4) an improved internal company climate (Birkinshaw, 2018; Hobbs & Petyt, 2017; Korhonen, 2013; Roman et al., 2015). It's important to note that there's variation, and that each company is different in the way they approach these goals (Korhonen, 2013).

In the same Version One report (2018), the top five perceived benefits of adopting agile methodologies are; the ability to manage changing priority, project visibility, business/IT alignment, Delivery speed/time to market, and increased team productivity and morale. These findings also overlap greatly with what has been reported in literature (Fry & Greene, 2007; Hobbs & Petyt, 2007; Laanti et al., 2011; Schwaber, 2004; Thomke & Reinertsen, 1998).

It's important to note that research has proven the above mentioned advantages to be more likely to be gained for projects that fall within the "Agile Sweet Spot", described by Kruchten (2013) as projects which consists of small collocated teams working on small, non-critical, green field, in-house software projects with stable architectures and simple governance rules. Scaling agile practices brings along many new challenges, and has as stated earlier "little empirical evidence of successful cases" (Rolland et al., 2016). The challenges and success factors when scaling agile will be further discussed in the following chapter.

2.2.3   Agile scaling frameworks

As companies and practitioners who embarked on their large scale agile journey increasingly ran into challenges, a need for frameworks and models arose which addressed these issues. Over the years many types of scaling frameworks have been conceived (Fig 2-4).

One of the most popular frameworks by far is the Scaled Agile Framework (SAFe), with 29% of Version One's State of Agile (2018) respondents working with it and according to Leffingwell (founder of SAFe) 70% of Fortune 100 US companies have in house Certified SAFe practitioners. Though SAFe isn't positively received by everyone and receives criticism for being too prescriptive and adding to "bureaucracy" and hierarchy (Ebert & Paasivaara, 2017). Another popular more pragmatic approach is the Disciplined Agile Framework created by Scott Ambler during his years at IBM. Although less prescriptive than SAFe, the Disciplined Agile framework is very project focussed and lacks multi-layered guidance (Hastie, 2015).

The Spotify model is another popular framework, representing of course the organisation of the world famous music streaming service Spotify. Kniberg & Ivarsson (2012) have received positive responses, although some are skeptical about its applicability to entire enterprises (Hastie, 2015). Fig. 2-5 presents the Spotify model where squads are the name of agile teams, and tribes group these squads together per area. One lesser known framework is Large Scale Scrum, also known as leSS (no pun intended). Another relatively new but promising framework is Nexus, created by Ken Schwaber, one of the founders of the Agile Manifesto, Scrum.org and contributor to the Scrum methodology itself (Schwaber, 2018).

Even though these frameworks do provide a useful starting point for those aspiring to implement large scale agile, many researchers and even creators of these frameworks propagate the tailoring of these methodologies to the companies' environment (Ambler, 2009; Ambler & Lines, 2014; Ebert & Paasivaara, 2017: Laanti, 2014; Nerur et al. 2005; Tian, 2014). This aligns well with the results from the Version One report, where 10% of respondents stated to have created their own internal scaling methods.

The tailoring of large scale agile methods can be done in a multitude of ways. Paasivaara (2017) only recently stated that there is a lack of "proven models and research results on how to do a large-scale agile transformation". Only a handful of empirical case studies on scaled and tailored agile methods exist with even less on how to tailor agile scaling frameworks (Dingsøyr & Moe, 2017). Multiple studies and journals have confirmed this literature deficiency on this topic (Nuottila et al., 2016). Unfortunately, this hinders both researchers and practitioners in understanding the complex nature of large scale agile methodologies (Begel & Nagappan, 2007; Dikert et al., 2016). Therefore more empirical research on this topic is evidently desirable.Whilst some of these case studies on tailored methods at scale prescribe tailoring and transformation factors, they fail to cover the entire tailoring and transformational process.

In sum, knowledge on large scale agile tailoring and transformation is fragmented, this hinders the possibilities when it comes to defining an approach to scaling agile. Research on agile method tailoring on a team-level is more mature with widely used tailoring approaches such as theories proposed by Kalus & Kuhrmann (2013). While these work on tailoring for team level they miss crucial elements of a large scale setting. The following section will go on about the challenges organisations face when they decide to hop on the large scale tailored agile train.

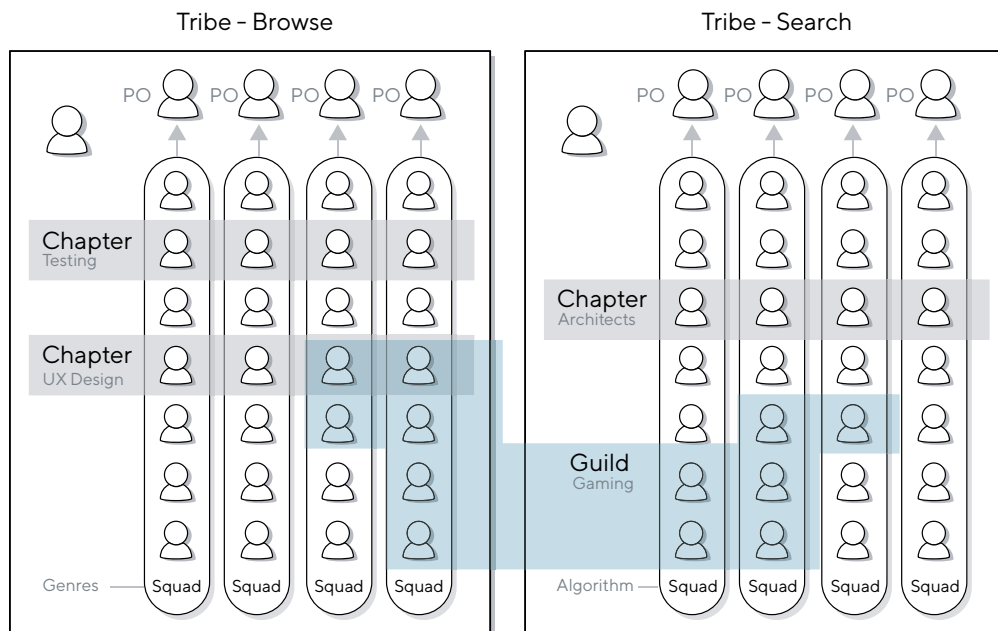## 2.2.4   Challenges for large scale agile
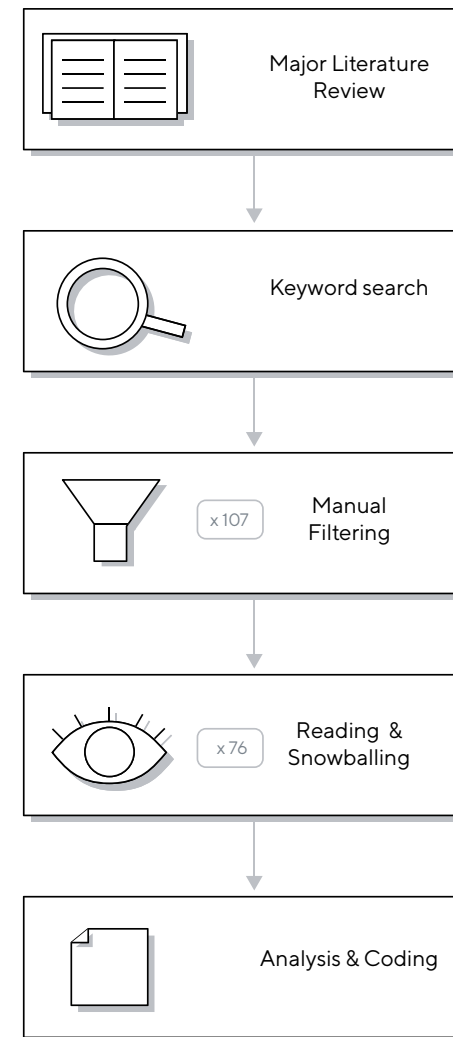
Fig 2-5 "Spotify Agile Framework"

As explained earlier, a wide array of reasons exist for companies to implement agile in the large. Despite the warnings, organisations still decide to let go of their Taylorian Scientific Management methods to move towards the promised land of "agile" (Vaiyda, 2014, Dybå and Dingsøyr, 2009). As they do so, many find themselves swimming in a sea of "problems and challenges" (Gandomani et al., 2015; Nerur et al., 2005; Pikkarainen et al., 2012). Academics and practitioners have reported on these journeys towards large scale agile and can help anyone planning to implement large scale agile to traverse around these known issues and problems.

Dyba & Dinsoyr (2009), showed that agile methods don't necessarily fit in large scale environments. Currently, literature on large scale agile transformation is dominated by experience reports that confirm their claim (Dikert et al, 2016). Still the amount of companies that engage with an agile transition continues to grow (Gandomani et al., 2015; Nerur et al., 2005; Pikkarainen et al., 2012; VersionOne, 2018).

Only a limited set of literature reviews on the problems of large scale agile transformations exist. Firstly, Dikert et al. (2016), have analysed 52 papers (mainly experience reports) on the challenges and success factors in large scale agile roll-outs. Rohunen et al. (2010), performed a systematic literature review looking into the different approaches taken for large scale agile transformation. Secondly, Through the analysis of 49 papers and an industrial inventory they present strategies for large scale agile transformation approaches, stages and dependency management. With only two SLRs on this topic, it is argued that there's a lack of overview on the topic. In order to get a better understanding of the challenges and success factors, a systematic literature review, built largely on the approach of Dikert et al. (2016), was performed. Unlike Dikert et al. (2016), this SLR also included papers that focussed on "scaling up from small; a single agile team in a large setting", as it's argued this will provide more detailed insights into the challenges on a team level for scaling.

The research was performed in 5 steps. Firstly, a set sources were identified by using keyword searches in electronic databases. Secondly, this array of sources was manually filtered. This filtering process was performed by me (the author). Thirdly, a set of extra sources was added based on the principle called "snowballing", where in the selected sources' references new pieces were selected. A total of 76 relevant articles and papers were identified. After that data extraction was performed. Lastly, data extracts were coded and categorised based on results from the Case Study Report (See Fig. 2-6). For the full overview of the SLR, see Appendix C. The categorised challenges can be found on the next page

Fig 2-6 "Research Design SLR"

Organisation

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Regulatory Demands
Companies like financial institutions and public organisations, face a constant stream of regulations like compliance and governance requirements. Regulations generally require documentation heavy processes and provide imminent tasks on development teams' backlogs in order to keep up with regulation and avoid fees.

VersionOne, 2018; Roman et al., 2015; Fitzgerald et al., 2013, Nuotilla et al., 2016: Gregory et al, 2015

Mismatch Agile & Traditional structure
Many firms experience a significant dissonance between newly introduced agile methods and the traditional organisation. Traditional and agile processes both follow different paths at different velocities, so a discrepancy between the two is self-explanatory (Rigby et al., 2016). One much reported problem was the integration of the agile processes into the existing ones. One example would be where large organisation have centralised specific process activities such as testing, whilst agile teams should typically be responsible for that (Boehm & Turner, 2009). These external interfaces to the traditional organisation are reported to lead to external pressure follow traditional waterfall processes and limited involvement of business (Kim et al., 2016; van Vliet & van Waardenburg 2013).

Iivari & Iivari, 2011; Nerur et al., 2005; Conboy et al., 2011; Boehm & Turner, 2005; Nuotilla et al., 2016; López-Martínez, 2016; Pries-Heje & Krohn, 2017; Paasivaara et al., 2018; Kim et al., 2016; Gregory et al 2011; van Vliet & van Waardenburg, 2013; Rigby et al., 2016

Distributed Development
Distribution of development teams (even within a single large building) hinders their ability to coordinate and communicate effectively, whilst agile practices do assume co-location (lindvall et al 2004). Add to that cross-site, cross-country or cross-continent distribution of teams, which is a common phenomenon for large firms, and you have an even bigger coordinative and communicative challenge if not adequately supported (Paasivaara et al., 2018; Ktata & Levesque, 2009; Razavi & Ahmad, 2014

Lindvall et al., 2004; Nuotilla et al., 2016; Cao et al., 2009; Conforto et al., 2014; Ktata & Levesque, 2009; Bass, 2016; Paasivaara et al., 2018; Roman et al., 2015;Ktata & Levesque, 2009; Razavi & Ahmad, 2014; Lopez-Martinez et al., 2016; Gandomani et al., 2013

Organisational Silos
Internal Silo's limit an the autonomy of an agile software develop team in building a specific end-to-end feature (Paasivaara et al., 2018). It's nearly impossible to give full autonomy over the entire process resulting in hand over and the need for functional managers (Conforto et al., 2014). A companies historical orientation (e.g. system oriented) also has implications of the skills of the developers, meaning that even when you would organise end-to-end, they developers would lack the needed capabilities to develop for the end-to-end solution (Vaidya, 2014).

Dikert et al., 2016; Vaidya, 2014; Conforto et al., 2014; Paasivaara et al., 2018; Kalliney, 2009

Size increases inertia & complexity
As an organisations' size increased, the more complex the internal landscape will be. Size brings inertia, making it difficult to pivot within the organisation. In order to create truly autonomous teams within these organisations, many different individuals are needed in order to cover the full breadth of the process, going at the cost of the teams size. Appropriately sizing the team size in large scale agile is a tricky and complex matter (Miller & Carter, 2007).

Chow, & Cao, 2008; Kim et al., 2016; Campanelli et al., 2017; Power, 2011; Miller & Carter, 2007

Culture

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Mismatch organisational culture & Agile culture
As the transition is made towards implementing agile in a traditional organisation, people experience a significant misfit between the traditional cultural values and the agile values. Organisational culture discrepancy has been reported as one of the most challenging barries for agile adoption (Hoda & Noble, 2017).

Version One, 2018: Nerur et al., 2005; Christou et al., 2010; Gandomani & Nafchi, 2016; Kim et al, 2016; Martínez et al., 2016, Hoda & Noble, 2017; Iivari & Iivari, 2011; Chow, & Cao, 2008; Xu & Ramesh, 2007

Traditional Management Behaviour
Traditional management behaviour is another barrier for agile adoption. Managers are still perceived to adhere to traditional values and pressure agile teams into doing so as well. This traditional an hierarchical management form flows down as "business as usual" into the agile teams, making it difficult for them to adhere to the new way of working.

Dikert et al., 2016; Nerur et al., 2005; Kuusinen et al., 2016; Gandomani & Nafchi, 2015; Christou et al., 2010; VerionOne, 2018; Chow, & Cao, 2008; Smits & Rilliet, 2011; Campanelli et al., 2017; Carew & Glyn, 2017; Gregory et al, 2015; Pikkarainen et al., 2012; Power, 2011; Nuotilla et al., 2016

Lack of Leadership, Vision & Strategy
Traditional firms have an abundance of managers and middle-managers, however a different skillset is needed for managing agile teams (Rosenberg, 2015). Moving from command & control, towards leadership, strategy and visioning.

Hobbs & Petit, 2017; Rosenberg, 2015; Power, 2016

People

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Lack of Skills
In an agile way of working, much is expected from developers as more emphasis is put on autonomy and interaction. This requests developers to be more T-shaped and have stong social skills. As traditional organisations didn't hire developers based on these skills, a serious lack of skills exist on the development side, and this deficiency sparks fear in developers mind as it exposes their shortcomings (Conboy et al., 2011).

Nuotilla et al., 2016; Gandomani & Nafchi, 2016; Chow, & Cao, 2008; Smits & Rilliet, 2011; Martínez et al., 2016; Khalid et al, 2015; Conboy et al., 2011; Nerur et al., 2005; Maples, 2009

Change Resistance
As with every change in an organisation, there's a resistance to the new. The new agile way of working will be received with skepticism, or implementing the change top down will force a reaction the opposite way and this holds vice versa as well.

Dikert et al., 2016; VersionOne, 2016; Gandomani & Nafchi, 2016; Chow, & Cao, 2008; Worley & Lawler, 2010; Paasivaara et al., 2018; Gregory et al., 2015; Korhonen, 2013

Reverting to traditional behaviour patterns
As the transition to agile is done, it's easy for people to fall back into traditional behavioral patterns if not guided correctly. New ways of working are always challenging and since the human brain is hardwired follow behavioural patterns, it's important to facilitate the replacement of these patterns.

Dikert et al., 2016; Maples, 2009; Khalid et al., 2015; Campanelli et al., 2017

Importance of PO underestimated
A much reported problem in literature was the underestimation of the importance of a Product Owner. Challenges where a PO wasn't dedicated to a single team, difficulty in defining the role, incapability of effectively managing a backlog.

Paasivaara et al., 2018; Chow & Cao, 2008; VersionOne, 2018; Vaidya, 2014; Ktata & Levesque, 2009; Gandomani et al., 2013;

Implementing a different mindset
Implementing agile goes beyond simply introducing as set of tools and practices into an organisation. It's crucial to communicate and change the mindset toward the principles, and not just focussing on the tools (Martinez et al., 2016)

Pries-Heje & Krohn, 2017; VersionOne, 2018; Gandomani & Nafchi, 2016; Chow, & Cao, 2008; Gregory et al, 2015; Martinez et al., 2016

Outsourcing/Cultural
Multiple studies report challenges when it comes to outsourcing the development. Different reasons come forth. One study reports that there's a limited understanding towards the agile way of working by these external parties(Ktata & Levesque, 2009). Others report the difficulty to establish effective relationships with outsources parties that operate in different continents, of which cultural barriers and time-zones are examples (Bass, 2016)

Bass, 2016; Gregory et al, 2015;Razavi & Ahmad, 2014; Gregory et al, 2015; Ktata & Levesque, 2009

Process

Mismatch Traditional & New Processes
Similar to cultural and organisational facets, there's a mismatch between agile processes and traditional ones. An example is where work is duplicated because business does traditional refinement, and agile teams perform sprint refinements (Livari & Livari, 2011; Lindvall et al., 2014). Another example is where ad-hoc requests significantly interrupt the flow of the agile teams (Carew & Glynn, 2017). Lastly, as for some firms only part of the entire end-to-end process works agile and yield successes, there's still a traditional lengthy release process undoing all the gains (Maples, 2009)

Gandomani & Nafchi, 2015; Hoda & Noble, 2017; Iivari & Iivari, 2011; Lindvall et al., 2014; Carew & Glynn, 2017; Maples, 2009; Hobbs & Petit, 2017

Dependency management
In large organisations, development teams are bound to have more dependencies and stakeholders. This increases the need for more formal documentation and impacts the ability to be agile. Lindvall et al., 2014 argues that for these large scale agile settings, projects can never be "truly independent", yet will always have to face the multiple interfaces to the organisation.

Dikert et al., 2016; Lindvall et al., 2004; Xu & Ramesh, 2007; Ktata & Levesque, 2009; Roman et al., 2015; van Vliet & van Waardenbrug, 2013; Gregory et al, 2015; Fitzgerald et al., 2013; Nuotilla et al., 2016; Khalid et al., 2015

Inter & Multi-team coordination
Coordination of multiple development teams has been a much reported challenge in literature. As the amount of teams working on a project grows, so does the complexity of the network. Informal and ad-hoc conversations are no longer sufficient for synchronisation and coordination. Extra tools and arena's are proposed in general to help solve these coordination problems (Dingsøyr et al, ,2016; Bass, 2016)

Hobbs & Petit, 2017; Dikert et al., 2016; Lindvall et al., 2002; Dingsøyr et al, ,2016; Bass, 2016; Gandomani & Nafchi, 2016; Chow, & Cao, 2008; Paasivaara et al., 2018

Traditional HR processes
Traditional processes like rewarding based on an individual's' performance or scoring based on short term metrics are at odds with agile principles (Lopez-Martinez et al., 2016; Conboy et al., 2011). Evenmore, studies reported that there was a lack of agile specific recruitment procedures in order to ensure a fit between new personnel and the agile organisation

Nuotilla et al., 2016: Nerur et al., 2005; Kim et al., 2016, Khalid et al., 2015; Conboy et al., 2011; Lopez-Martinez et al., 2016;

Portfolio Management
For organisations involved in development programmes or large initiatives, creating agility on such a large scale is challenging. It is however a crucial step in managing the vast amount of interdependencies and risks. The iterative nature of agile requires different ways of doing so. Unfortunately, little guidance exists in the literature on how to do this effectively (Dingsøyr et al., 2016).

Dingsøyr et al., 2016; Bass, 2016; Kalliney, 2009; Nerurkar & Das, 2017; Chow, & Cao, 2008

Requirements Engineering
Doing agile in a scaled setting has implications for the flow of requirements and the refinement of it. Many report challenges such as refinement of very high level requirements down to user stories, the time-consuming nature of the task and difficulty in work estimation(Dikert et al., 2016; Chow, & Cao, 2008; Xu & Ramesh, 2007; Paasivaara et al., 2018 ; Ktata & Levesque, 2009; Roman et al., 2015;). Others report that a dissociation happens between the long term and short term plans (Dikert et al., 2016).

Dikert et al, 2016; Chow, & Cao, 2008; Xu & Ramesh, 2007; Paasivaara et al., 2018 ; Ktata & Levesque, 2009; Roman et al., 2015; Maples, 2009; López-Martínez, 2016, Fitzgerald et al., 2013

Knowledge Management
As you scale agile and the amount of teams that work Agile, more dependencies and connections arise. Simple ad-hoc informal meeting mechanisms are not sufficient for effective knowledge sharing. One of agile methods strengths at small scales, is the tacit knowledge sharing that happens, which is very limited in a scaled setting. One example posits that as agile scales further and teams are allocated to different teams, knowledge domains arise that further complicate knowledge sharing (Kalliney, 2009).

Ktata & Levesque, 2009; Gregory et al, 2015; Power, 2011;Kalliney, 2009

Inconsistency in Agile approach
As agile is scaled within the company and a multitude of teams start to work agile, inconsistencies and alterations to the agile approach start to appear. This effect is further fueled if teams are recommended or given freedom to tailor the methods to their needs, which is shown to be beneficial. These differences however complicate collaboration throughout a large firms.

VersionOne, 2018; Paasivaara et al., 2018; Gregory et al, 2015

Technical & Tools

Challenge	Literature Reference
Quality Assurance Difficult As explained earlier, large firm generally centrally organise their testing and release processes. This results in delays and hinders the agile work-flow for example when agile teams finish a piece of software and needs to be revised based on testing results. Other challenges which are mentioned are the lack of automated testing and ambiguity of requirement against which to test seriously affecting the quality assurance.	Dikert et al., 2016; Razavi & Ahmad, 2014; Fitzgerald et al., 2013; Maples, 2009
Existing Software Architecture complex Legacy systems of traditional firms tend to inflexible, complex and seriously expensive to replace (Paasivaara et al., 2018; Roman et al., 2015). Existing software architectures of companies affect their ability to be agile as their often restricted by specifications and limitations of their current architecture (van Vliet & van Waardenburg, 2013).	van Vliet & van Waardenbrug, 2013; Paasivaara et al., 2018; Roman et al., 2015; Dingsøyr et al., 2016; Bass, 2016
Existing Toolset mismatch Traditional collaborative and communicative tools do not cater for the needs of the agile way of working. Agile requires more intensive and visual tools that foster effective collaboration and communication. An example of this would be traditional project management software tools that did not cater well to the nature of agile methods (where software packages like JIRA are catered to it).	Hoda & Noble, 2017; Nerur et al., 2005; Christou et al., 2010; Chow, & Cao, 2008; Smits & Rilliet, 2011; Roman et al., 2015

Transformation

Challenge	Literature Reference
Lack of investment Investment into the large scale agile implementation is a much reported challenge. Examples of facets that lacked investment are; coaching of existing agile teams, training agile teams beforehand, not investing in co-location.	Dikert et al., 2016; VersionOne, 2018; Paasivaara et al., 2018; Kim et al., 2016; Gregory et al, 2015; Gandomani et al., 2013; Roman et al., 2015; Khalid et al., 2015; Nuotilla et al., 2016
Finding right balance Agile & traditional Challenges are found in determining the right scope for the transformation, where decisions need to be made about which departments or units to include in it (Power, 2016). Finding the right balance between autonomy and structure/processes was a different challenge, where one study found that in a large scale agile transformation, employees were more negative towards a lack of structure, which seemingly contradicts with the agile principle of autonomy (Power, 2016).	Power, 2016; Roman et al., 2015

2.2.5 Agile in regulated environments

The challenges found in the previous section provide a solid comparison base, however cover broad set of industries. Surprisingly little reports exist on large scale agile transformations in the financial services sector. This further indicates that empirical research on this topic would improve on the current scarcity of knowledge.

In a literature review by Cawley et al. (2010), they indicate that there's a lack of evidence of the adoption of lean/agile principles in the highly regulated industries. However they do state that when adopted in these settings a more balanced and tailored approach between plan-driven and agile methods should be considered.

Stålhane et al. (2012), reported on challenges for tailoring scrum to safety-critical software, however focus solely on small-scale practice and method tailoring. They however report challenges on the mismatch between plan-driven requirements versus the agile methodologies such as: requirements engineering and planning.

Nuotilla et al. (2016) performed a Grounded Theory analysis on the challenges for adopting agile software development practices in a public organisations. Even though their research was based on team-level agile, their results seemed relevant. They reported challenges in the following areas: documentation, personnel education, experience and commitment, stakeholder communication and involvement, roles in an agile set-up, location of the agile teams, legislation, and complexity of software architecture and system integration.

Christou et al. (2010), looked at implementing the Agile Unified Process (created by Scott Ambler as a simplification of Rational Unified Process) into a bank. Their main finding was positive as it stated that agile processed can be altered and tailored to fit the highly regulated environment of the bank.

Fitzgerald et al., (2013) further confirms that little rigorous research exists on the topic of scaled agile in regulated environments. Their findings in their case study moreover align with what Christou et al. (2010) found, and they've successfully altered the scrum process to fit the regulated environment through concepts which they call "Continuous Compliance" and "Living Traceability".

In sum, little empirical research exists on the topic of large scale agile transformations in a corporate financial services provider. Presented works all focus on either agile on a team level or have no coverage of challenges and success factors when scaling agile within such an enterprise. The covered papers show positive results for agile within a highly regulated environment, where some are successful in tailoring and adapting the process to the environment.

2.3 Research Design

The goal of this research is to uncover what the challenges are for a large scale tailored agile implementation within the financial services industry. In order to do so, the research question will be handled is divided into two sub-questions;

1. *What does ABN AMRO's tailored and scaled agile framework look like?*
2. *What are the challenges within this tailored and scaled agile framework?*

For this research an exploratory single-case study design was adopted. Case studies are appropriate where descriptive and exploratory research is performed and can help in creating an understanding of a phenomenon or reality (Yin, 2003).To the best of my knowledge, this research is one of the first to empirically document such a large agile transformation, which makes this a revelatory case study according to Yin's description.

In order to cover as much facets of the organisational transformation at ABN AMRO, data was collected from different sources. Data was collected from meeting observations, semi-structured interviews and documentation, a concept familiar to the case study research called "triangulation". However, only a single unit of analysis was utilised which makes it a holistic single-case study. For the analysis of the data, the Grounded Theory Method was applied, based on the Glaserian variant (Glaser, 1967). In order to further improve validity of the emerged challenges and success factors, the results were tested with a set of employees. See Fig 2-7 for an overview. Data collection and data analysis will be further elaborated upon in subsequent sections.
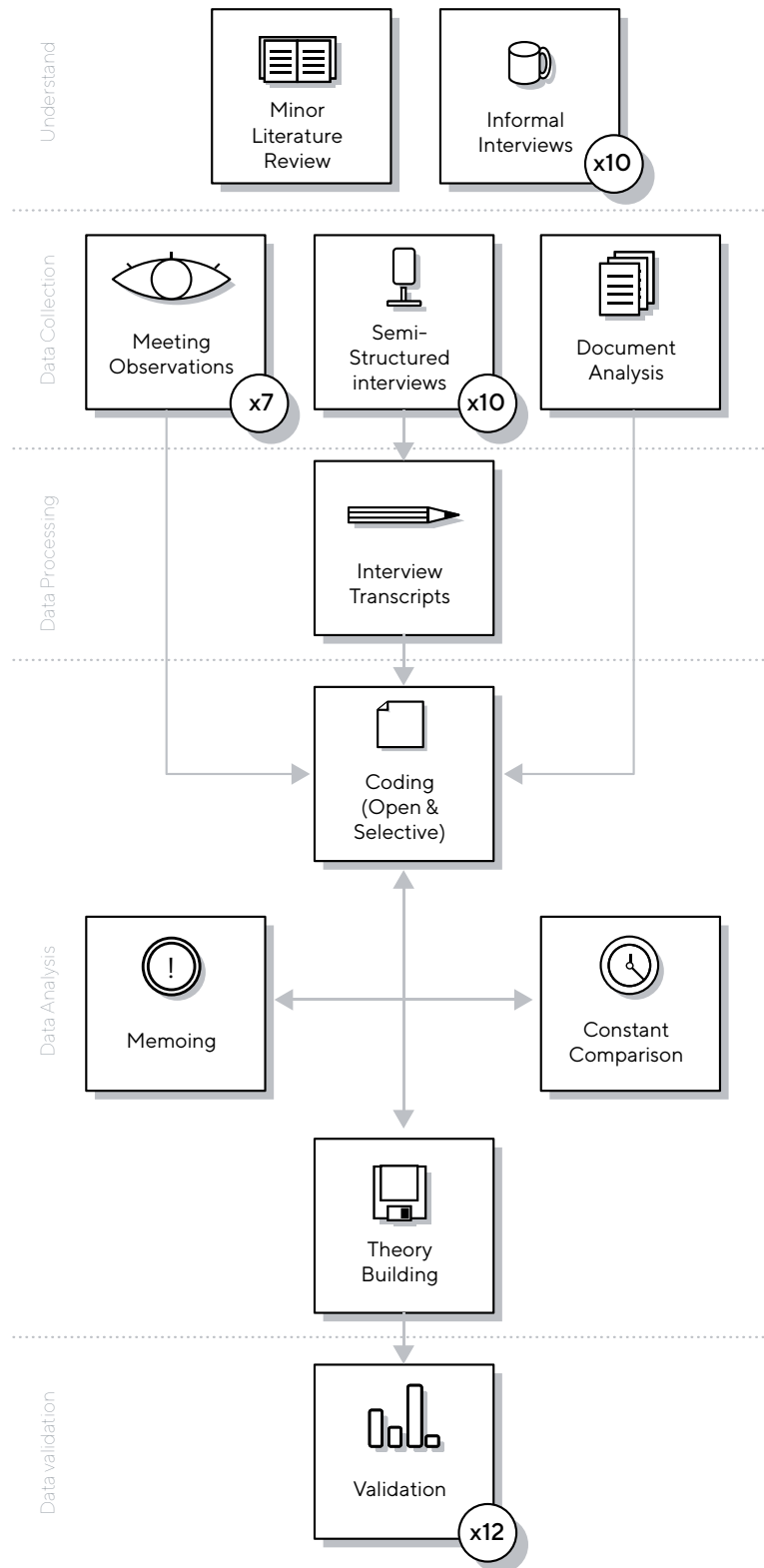
Understand
- Minor Literature Review
- Informal Interviews x10

Data Collection
- Meeting Observations x7
- Semi-Structured interviews x10
- Document Analysis

Data Processing
- Interview Transcripts

- Coding (Open & Selective)

Data Analysis
- Memoing
- Constant Comparison
- Theory Building

Data validation
- Validation x12

Fig 2-7 "Research Design"

2.3.1 Data Collection

In order to establish correct ways for data collection, contextual information and input was gathered within ABN AMRO. The insights from these conversations served as a basis for the data collection strategy.

The first unit of data collection was through semi-structured interviews. An interview guide was prepared in advance of the interview to guide the discussion on the topic of the research (Appendix D). Each of the interviews lasted between 45 and 75 minutes. For the selection of interview participants an expert sampling technique was used (Table 2-8). This technique entails selecting individuals with more knowledge on a specific topic, and is known to be useful in exploratory research. The sample selected all came from the same department, with their role being focussed on having an overview of existing challenges and successes in the organisation, and acting upon those, it was argued that they would be able to provide the most objective and detailed information on what was happening in the organisation. Participant bias is a possible risk in this case, however this effect was attempted to be mitigated through the collection of data from different sources.

A second unit of data collection was through meeting observations. In order to avoid departmental and specific meeting bias, different agile arenas from different departments were observed (See Table 2-9). This sampling is better known as maximum variation sampling (Coyne, 1997).

As a third datasource, documentation surrounding the agile transfor mation was included in the analysis. In addition to the documentation, full access to internal communicative and collaborative tools further improved the dataset for analysis

Lastly in order to further improve data validity, an exercise with people from within the agile organisation (Grid members), were asked to prioritise and remove challenges and success factors found during the GTM, more will be explained on this in the "Data Validation" section.

#	Role	Responsible for
1	Agile Business Line Coach	Functions (Risk, Finance, HR)
2	Agile Business Line Coach	Private Banking & Fast Forward International
3	Agile Grid Coach	Commercial Banking
4	Agile Business Line Coach	Corporate & Institutional Banking
5	Agile Business Line Coach	Retail Banking
6	Agile Grid Coach	Accounts, Payments & Packaging
7	Agile Grid Coach	Data Quality, Data Analytics
8	Agile Business Line Coach	Commercial Banking
9	Agile Grid Coach	Investments & Advice
10	Agile Grid Coach	Financial Risk

Table 2-8 "Interviewees Semi-Structured Interviews"

Table 2-9 "Meeting Observations"

#	Name	Grid	Description
1	Daily Stand-Up	CB Digital	A daily meeting in which an agile team discusses work that's completed in the day before, work that's going to be done today and any impediments (if any)
2	Sprint Review	Consumer Credits	Meeting in which work that's finished in the preceding sprint is presented to stakeholders.
3	Sprint Planning	Corporate Credits	Meeting in which work is selected and discussed that's going to be pulled into the sprint backlog.
4	Product Demo	Corporate Credits -	A demo of a finished increment, presented to stakeholders. (generally includes work of multiple sprints)
5	Grid Sync	Savings & Deposits	Meeting in which PO's and GO's come together to add new pieces of work, discuss strategic priorities of the grid and update each other on progression.
6	"Zeepkist"	Non-Financial Risk	Weekly meeting in which the entire grid comes together to discuss miscellaneous things related to the grid.
7	Team-Off-site	Reporting Grid - VPB	A day in which an agile team comes together in a remote location (to work on a specific task: for example determine a team purpose)

2.3.2   Data Analysis

For the analysis of the data, the Glaserian variant of the Grounded Theory Method was used. Even though the GTM receives criticism on its generalisability, it was still chosen to be suitable for this case study for the following reasons.

- The Grounded Theory Method has been used in previous studies in the field of agile software development and transformations.
- As a qualitative research methodology, the Grounded Theory Method allows us to study the social aspects and interactions, on which agile methodologies heavily rely.
- Besides, the GTM is applicable to analyse situations where social problems to which people need to adjust, which in this case aligns with the organisational reorganisations that happened simultaneously to the introduction of agile.
- The GT is also suitable for research areas that show a lack of literature.
- Since a revelatory case is studied, the goal is not to create generalisable results. However its main purpose is to inform and report on this phenomenon.

The full transcripts of the interview, observational insights and documents where imported into a word-processing program during the data collection period. Similar to other researchers the data was initially analysed in a line-by-line open coding approach. During the coding of the transcripts and the insights, the concept of constant comparison was applied. Meaning that as new codes emerged, they were checked against existing codes to either form new codes or adjust the previous ones. In parallel to open coding, selective codes were made to categorise the open codes into a coherent structure.

The previously mentioned concept of constant comparison was used here as well to adjust, add and remove selective codes from the emerging theory. Another activity called "Memoing" was used, where if during the coding theoretical insights or new theoretical propositions were gained, I stopped coding and wrote down the emergent knowledge. Based on the selective codes and memos, new theoretical codes and theories were established. This process of coding, constantly comparing, and memoing was repeated until theoretical saturation was reached (within the chosen samples). An example of code structure can be found in table 2-10. (See Appendix E for coded interview transcripts

As the GT emerged, it's inability to explain specific challenges faced in the large scale agile transformation was noticed despite its insightful holistic characteristics. Hence, the decision was made to extend the Grounded Theory by re-coding the available codes, based on Glaser's 6C's coding family;

- Context
- Cause
- Condition
- Contingency
- Consequence
- Covariance

This way of coding family has been adapted in other studies on the challenges in agile software development and has shown to provide more contextual information and challenges.

The interviews, meeting observations and documentation will be analysed using the GTM in an attempt to postulate answers to the prior mentioned research questions. The results from this analysis can be read in full in following section.

Theoretical Code	Selective Code	Open Code	Quote
Organisation & Management	Vision & Strategy	IT & Business Misalign	"That does lead to confusion sometimes, as IT has an agenda, and so does business" [NL] "Dat leidt tot soms onduidelijkheid, want je hebt een IT agenda en ook een Business agenda.

Table 2-10 "Theoretical Cascading"

2.3.3   Data Validation

In order to improve reliability of results data validation was performed. Only the challenges and success factors were checked upon validity as the answers to the other questions were grounded in "official" documentation.

The challenges, were presented to ABN AMRO employees on challengecards. These cards contained a title and a short description of the challengefactors (see Appendix I). All of the challenges were printed and cut into challenge cards. Each participant was given the task to prioritise the challenges based on their importance. The challenge cards were given to the participant in a randomised order and they were asked to lay them down onto the template that was provided to them(See Fig 2-11). The participant was given the option to leave challenges out, based on their own perceptions. Evenmore, they were handed empty cards to fill out if they felt challenges were missing based on their own experiences. This choice was made to check for gaps in the findings. After the participant finished the exercise a picture was taken for later reference.

During the exercise, notes were made about questions and comments the participants had which wer e later used to refine the framing of the challenges.

Representative sampling was used in order to recruit participants for the test. Multiple workplaces of random departments were visited where subsequently invidicuals were approach randomly. In order to ensure representative sampling, the participants were asked for their job role. If they were part of the grid landscape, they would be taken on to the next stage of the validation.

In total 12 participants were used for validation of the challenges. All participants were part of the grid landscape and varied in their role and positions.

All the results were collected into an excel sheet for analysis. If more than half of the participants did not perceive a particular challeng, it was removed from the findings. Challenges that were submitted by the participants personally were checked against existing challenges and if it could be part of an existing one. If no fit with existing challenges was found, a new challenge was created based on it's severity and relation to the topic of the research. See Appendix J for a list of participants and the results.
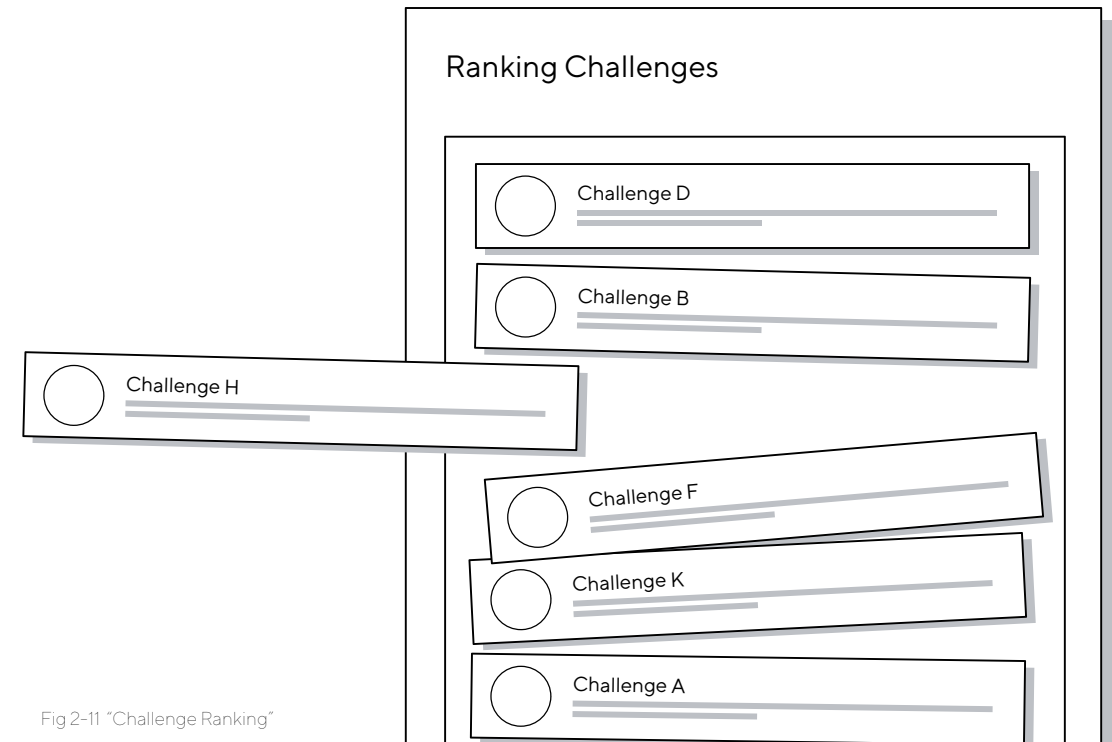

Fig 2-11 "Challenge Ranking"

2.4 Results

The results of the case study are presented in this section. This section follows the structuring of the earlier posed research questions. It starts by explaining the reasons for ABN AMRO to start a company wide agile transformation are explained. Secondly, their approach and transformation journey will swiftly be elaborated upon. Third, their current operating model will be explained in detail. Lastly the challenges and successfactors within their large scale tailored agile operating model will be presented.

2.4.1. Tailored Agile Operating Model

This section zooms in on the tailored and scaled agile framework of ABN AMRO. For this thesis the framework will be explained based on the definition of an operating model, which is; "The structures, processes and methods employed to execute a business strategy" (Spacey, 2017). An operating model basically describes the way a business is run. For this section the target operating model will be described according on a set of facets that have been adapted from the Strategy& Operating Model Blueprint (2018). This framework has been chosen as a leading example in this thesis as is had been found to have the greatest overlap with internal documents. An important note is that the scope for the operating model is solely on the agile organisation within ABN AMRO, excluding business units that do not fall within it. The Operating Model Blueprint (OMB) exists of 6 facets;

- People and Organisation
- Processes
- Governance Interactions
- Culture
- Measure and Motivators (Appendix G)
- Tools & Technology (Appendix G)

This section of the report will be laid out in a similar structure, however an extra "support" facet will be added since this thesis talks about the transformation from one operating model to the new agile operating model (AOM). Evenmore, the "Processes" and "Governance Interactions" will be merged into one section as there's great overlap between these two in the agile Operating Model. The first part describes the general high-level organisational model, including the structure, roles and responsibilities. The second part will focus on processes and meetings used in this scaled agile landscape. The third part swiftly describes the culture. "Measures and Motivators" & "Tools & Technology" are left out as they were found not to be crucial with regards to the eventual outcome and can be viewed in Appendix G . The section finishes with the support that was offered in the transformation.

People and Organisation

ABN AMRO has chosen to reorganise (part of) both their IT and Business departments into the single AOM. Their scope included departments that were stakeholders in the product development and maintenance (e.g. change and run). The transformation scope didn't include the product sales side, so for example none of the account managers were included (ABN AMRO calls this type of work "use"). Moreover, marketing and customer experience departments weren't included in this transformation either.

In the new agile organisation a set of structures were chosen to indicate different teams and interactions between them. ABN AMRO has borrowed most of these concepts from the famous Spotify Model, which are squads, tribes, chapters and guilds. However ABN AMRO made the decision to rebrand these names to; blocks, grids, circles and triangles (Fig. 2-12)

Family Operating Model

*Imagine a family of 4 (**Organisation**), the mother (**People**) has just finished cooking dinner and calls her son. He knows whenever his mom calls for dinner he has five minutes to come done (**Governance and Interactions**). The mom turns of the stove and makes the table ready for dinner by laying down the plates, after which she puts the food on the table (**Process**). When the boy comes down he sees, to his delight, that they're eating nasi goreng (**Culture**). The mother makes amazing Nasi Goreng as she has learned to cook from her Indonesian mother. After finishing dinner the boy is asked to clean the table and if he puts everything in the dishwasher (**Tools & Technology**), he will get a 30 minutes extra on the game console tonight in return (**Measure and Motivator**s).*
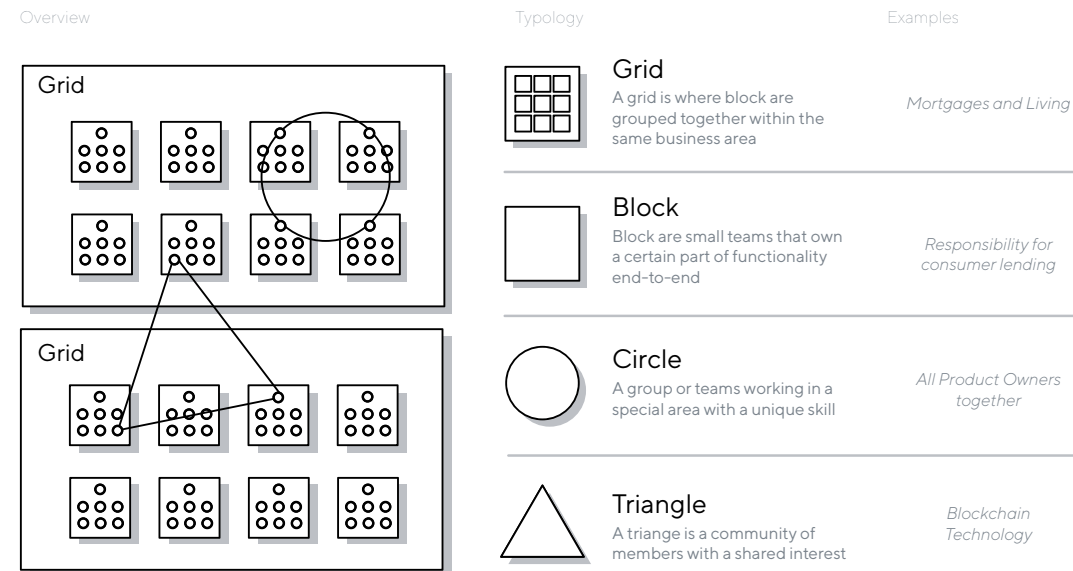
Fig 2-12 "ABN AMRO Agile naming"

Grid
A grid is where block are grouped together within the same business area
Mortgages and Living

Block
Block are small teams that own a certain part of functionality end-to-end
Responsibility for consumer lending

Circle
A group or teams working in a special area with a unique skill
All Product Owners together

Triangle
A triangle is a community of members with a shared interest
Blockchain Technology

- A **Grid** is where blocks are grouped together within the same business area. For example the Savings & Deposits, aimed at maximising financial and commercial performance of ABN AMRO's savings portfolio.
- **Blocks** for ABN AMRO are small cross-functional teams that own a certain part of functionality end-to-end. They are co-located and generally consist of 6 to 10 people. Building on the example of the Savings & Deposits grid, there's a block responsible end-to-end for Account Savings (So an example product would be an account that offered you a higher interest rate if you'd choose to leave the money in the account (untouched) for a period of ten years)
- **Circles** are a group or a team of employees working in a special area or with a unique skill, for example all the Product Owners together.
- A **triangle** is a community of members with shared interests. An example from within ABN AMRO would be group of 12 people that meet regularly because of their shared interest in Biometrics (e.g. authentication through face scan or fingerprint)

The Grid Landscape

ABN AMRO's entire agile organisation is called the "Grid Landscape" (See Fig 2-13) . It depicts the organisation of grids that focuses on (new), product development and maintenance. Each one of the blocks in the figure represents a single grid. In the introduction, ABN AMRO's high-over organisational structure was presented. The "Grid Landscape" groups the grids per the earlier mentioned business lines. These grids are positioned hierarchically under these business lines, however that does not prevent them from doing work for other grids. Moreover, a grid like CRM (Customer Relationship Management) services the entire breadth of the grid landscape, however had most work to do in the Commercial Banking business line and was therefore hierarchically positioned under that business line. One of the products they deliver for example is the internal website on which employees can request holidays.
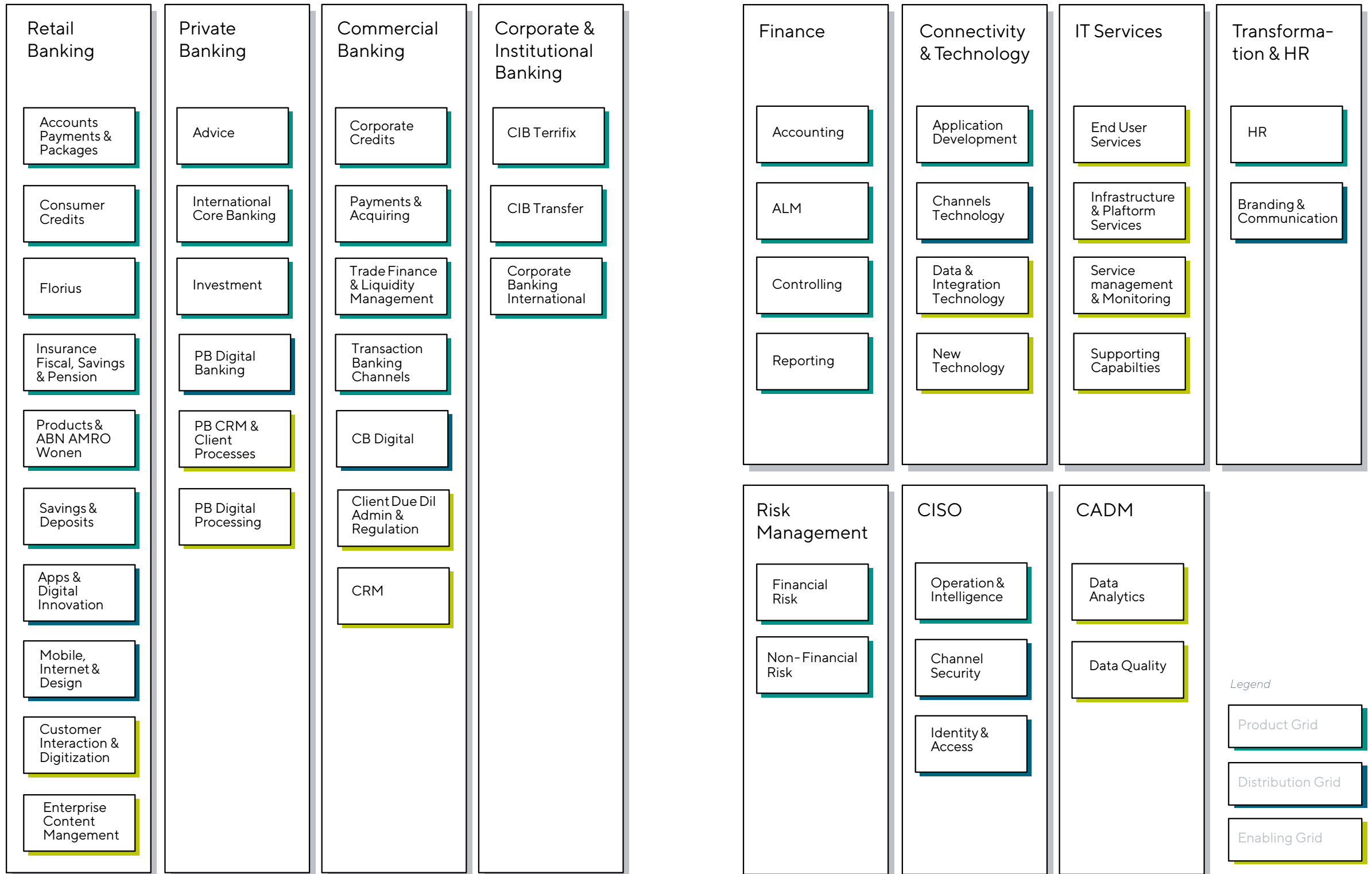
Retail Banking

- Accounts Payments & Packages
- Consumer Credits
- Florius
- Insurance Fiscal, Savings & Pension
- Products & ABN AMRO Wonen
- Savings & Deposits
- Apps & Digital Innovation
- Mobile, Internet & Design
- Customer Interaction & Digitization
- Enterprise Content Mangement

Private Banking

- Advice
- International Core Banking
- Investment
- PB Digital Banking
- PB CRM & Client Processes
- PB Digital Processing

Commercial Banking

- Corporate Credits
- Payments & Acquiring
- Trade Finance & Liquidity Management
- Transaction Banking Channels
- CB Digital
- Client Due Dil Admin & Regulation
- CRM

Corporate & Institutional Banking

- CIB Terrifix
- CIB Transfer
- Corporate Banking International

Finance

- Accounting
- ALM
- Controlling
- Reporting

Connectivity & Technology

- Application Development
- Channels Technology
- Data & Integration Technology
- New Technology

IT Services

- End User Services
- Infrastructure & Plaftorm Services
- Service management & Monitoring
- Supporting Capabilties

Transformation & HR

- HR
- Branding & Communication

Risk Management

- Financial Risk
- Non-Financial Risk

CISO

- Operation & Intelligence
- Channel Security
- Identity & Access

CADM

- Data Analytics
- Data Quality

Legend

- Product Grid
- Distribution Grid
- Enabling Grid

Fig 2–13 "ABN AMRO's Grid Landscape"

The size of the entire agile organisation has changed significantly over the past year. But at the time of writing this report the statistics were as follows (Fig-2-14):

6000+ Employees	500+ Blocks	47 Grids	5 Business Lines
.. are working in the Grid Landscape across..	.. which are located in..	.. grouped per business sub-area..	..cover this entire agile landscape.
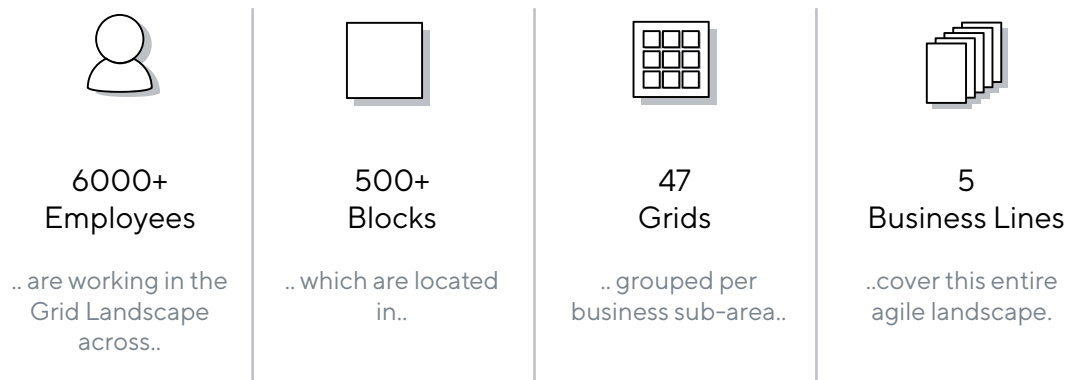
Fig 2-14 "Size of Transformation"

Types of Grids

ABN AMRO made a distinction between three different types of grids (See Fig. 2-15).

- **Product grids** are mainly focussed on product development and its portfolio. An example of a product grid would be Mortgages.
- **Distribution grids** are responsible for development of the channels to the customer, for example the ABN AMRO mobile banking app or the website.
- **Enabling grids'** responsibility lies with the development and maintenance of tools and systems used by all of the other grids (hence called enabling).

	Product	Distribution	Enabling
Responsibility	Product Develepment and Portfolios, including Product P&L	Channel development and distribution of products, including channel P&L	Development and maintance of tools and systems used bank-wide
Example	If the Mortgage grid would develop a feature on the website that allows non-ABN AMRO customers to quickly get an indication of a mortgage price based on the data they input themselves.	If the"Mobile, Internet and Design" implement a new feature in the mobile banking app that allows you to open an ABN AMRO account through the app.	The Customer Relationship Management grid could for instance add a feature that allows relationship managers to upload and add documents to a specific meeting with a customer.

Fig 2-15 "Types of grids"

Types of Teams

ABN AMRO made the decision to make a split in types of blocks. There are Value Delivery Blocks and Value Proposition Blocks (See Fig. 2-16). From the outset, there was a distinct difference between the two blocks where Value Delivery Blocks have end-to-end responsibility over a specific piece of software or process. Their teams are generally IT heavy with more IT roles (e.g. software engineers and IT architects) than business roles (e.g. business developers, business experts, and product managers). Value Proposition Blocks on the other hand focus on new product development, product rationalisation (e.g. product reviews, pricing updates etc.) and in general are more business heavy. Another clear distinction was made between the ratio between the amount of these two types of teams in a grid. Where there's always a larger number of Value Delivery Blocks (VDB) than there are Value Proposition Blocks (VPB).

Every Block, consists of about 5 to 12 FTE and has a Product Owner that owns the backlog of the team. In each team, as discussed earlier, there's both a combination of business and IT roles. in the Value Delivery Blocks there will be more emphasis on IT with more development engineers and less business development roles. In the VPB's on the other hand the emphasis is on business with many business development roles and some IT roles with a more architectural background. Another difference exist between the two teams where the VDBs have a scrummaster to guide their scrum process, whereas the VPBs don't have a scrummaster.
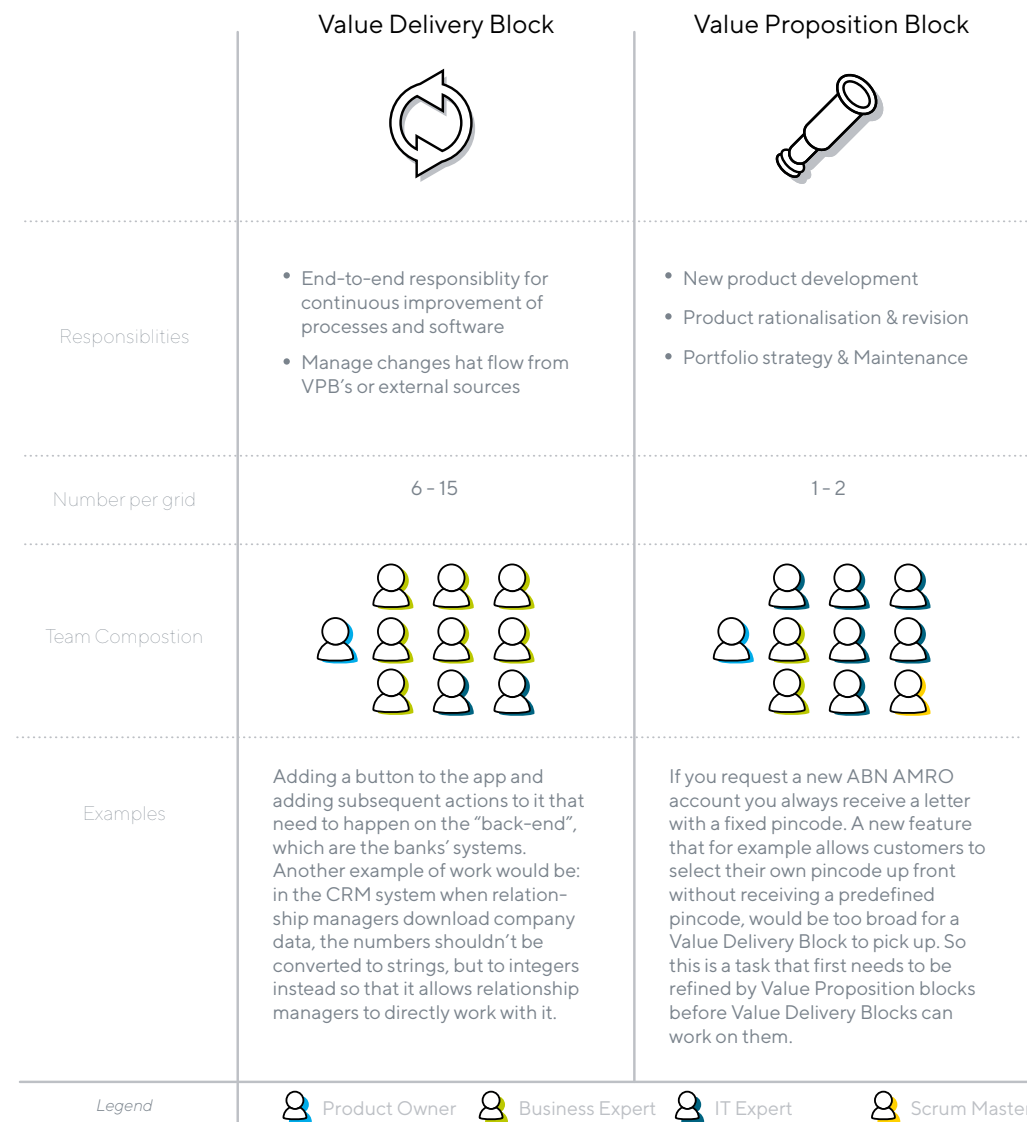

	Value Delivery Block	Value Proposition Block
Responsiblities	• End-to-end responsiblity for continuous improvement of processes and software • Manage changes hat flow from VPB's or external sources	• New product development • Product rationalisation & revision • Portfolio strategy & Maintenance
Number per grid	6 - 15	1 - 2
Team Compostion		
Examples	Adding a button to the app and adding subsequent actions to it that need to happen on the "back-end", which are the banks' systems. Another example of work would be: in the CRM system when relationship managers download company data, the numbers shouldn't be converted to strings, but to integers instead so that it allows relationship managers to directly work with it.	If you request a new ABN AMRO account you always receive a letter with a fixed pincode. A new feature that for example allows customers to select their own pincode up front without receiving a predefined pincode, would be too broad for a Value Delivery Block to pick up. So this is a task that first needs to be refined by Value Proposition blocks before Value Delivery Blocks can work on them.

Legend: Product Owner Business Expert IT Expert Scrum Master

Fig 2-16 "Types of teams"

Roles and Responsibilities

There are specific role descriptions for the agile landscape, these can be found in Appendix F. The general setup and "hierarchy" of a grid is depicted in Fig. 2-17. Because ABN AMRO made the decision to keep both the Business and IT organisation, there are two different hierarchical lines. Whilst the general role descriptions give an overview of what the responsiblities are, it's good to have some examples of what kind of people work within the agile landscape. On the right hand side you find some Persona descriptions of people in the agile landscape based on all the conversations, observati ons and interviews done throughout this thesis.
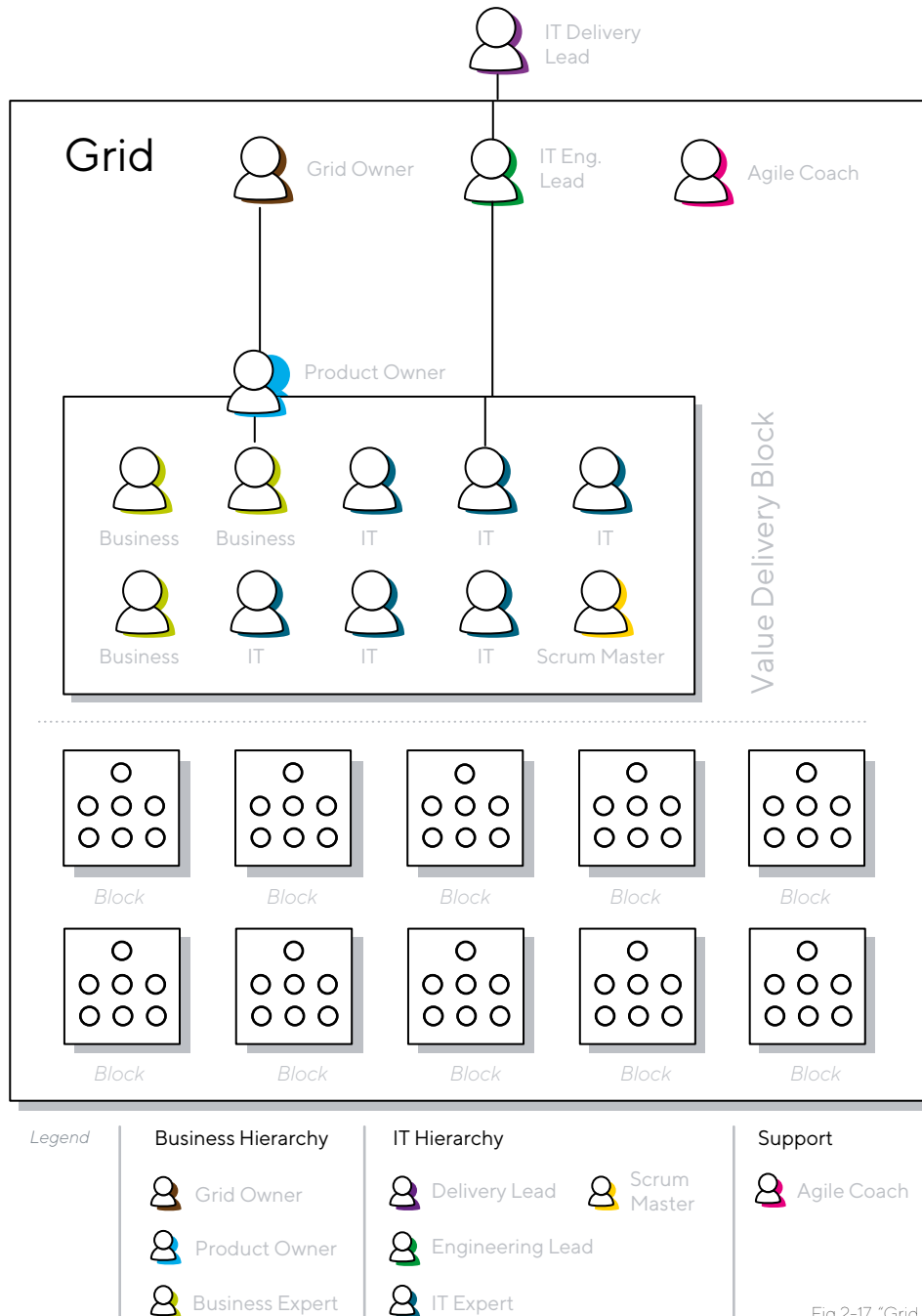
Fig 2-17 "Grid Hierarchy""

Name	Rene Zwagemaker	Age	53
Role	Grid Owner	Years at ABN	34
Family	son wife		

News inlets: The Guardian fd. colleagues

Tag Description: Timepoor, efficient, finance

Meet Rene, a 53 year old ABN AMRO veteran, who has seen many departments within ABN AMRO and is now sits in Grid Owner role within Private Banking. Rene has a background in transformation and cost efficiency programs and more specifically focussed around private banking. He lives together with his wife in Amstelveen. His son already moved to London and works for a large investment bank. His days are generally filled with senior management meetings in which strategy is discussed. In addition he has to present at many different places and often prepares for them the evening before. Rene doesn't have time to get to know the details so he generally requests clear spreadsheets that indicate the performance of the teams in his department or grid. He needs to worry about making the right strategic choices to keep shareholders and especially senior management happy, and focuses on the performance of his grid. In general, he doesn't really care how problems get fixed, as long as they do. Based on these numbers, he sets out new requests or answers if something doesn't look right. In order to make up for his busy life he takes a week of some now and then to relax in his cottage near the French coast, where he finds rest in reading a book. In order to stay updated on the latest developments, he relies on his colleagues and peers as well as an occasional title sweep on NU.nl or the "Financieel Dagblad".

Name	Harm Rietveld	Age	45
Role	Product Owner	Years at ABN	27
Family	kids wife		

News inlets: NRC fd. PAUW & WITTEMAN

Tag Description: Structured, Networker, Realist

Meet Harm, he is 45 years old and works at ABN AMRO as a Product Owner within Commercial Banking. He's worked at ABN AMRO for over 25 years. He used to work as a Project Manager and before that as a Business Developer, so he's always been eager for developments in the market to act upon them. He has written dozens of business cases so far and knows exactly how to get stakeholders on his side. He's very good at gathering requirements from these stakeholders and making sure these are delivered on time, that's also why he is so appreciated by his managers. His goal is to optimise value for the business, and right now he's doing that through managing the backlog. He likes to keep things structured and documented as he has to attend many meetings and he has plenty of requests coming in. Therefor he doesn't have time to worry about the way of working for his team. His main sources of information are the "Financieel Dagblad" and NRC online. Late at night he likes to watch shows like Pauw & Wittemand and RTL late night for amusement. Outside of his work, Harm has a very busy with his wife, two children and cycling. He has a bachelor in "Business Management" and has always been active in the field of finance, through investing time.

Tessa Maanster

Name	Tessa Maanster	Age	28
Role	Business Developer	Years at ABN	3
Family	Boyfriend		

News inlets — LinkedIn, YouTube, NU.nl

Tag Description — Adventurous, Curious, Social

Meet Tessa, a business developer at ABN AMRO. She's 28 years old and lives together with her boyfriend near the city center of Amsterdam. She's been working at ABN AMRO for 3 years now. She and her team members in the Value Proposition Block work to create better propositions for mortgage clients. She reads a lot of posts and articles on LinkedIn about the Business Model Canvas and Design thinking for example, and often puts forth these tools and methods towards her team. Whilst she has no experience in using them, she still believes it could be valuable but struggles to link it to the context of ABN She spends a lot of times with her friends and loves to travel. Very often she goes away for long weekends to places within Europe with her boyfriend. She loves to binge-watch Netflix series and stays up to date with the latest trends through youtubers. She has a Bachelor in Business Administration and is currently doing a part time Master in Business Finance.

Els van Vleteren

Name	Els van Vleteren	Age	42
Role	Business Expert	Years at ABN	14
Family	Daughter Husband		

News inlets — Facebook, NU.nl, IBM Connections

Short Description — Dependent, Risk aversive

Els is a 42 year old woman with two kids, who has worked at ABN AMRO for over 14 years. In this time she's generally had roles revolving around business expertise and business development. She started working in banks after finishing her master in Management and Commercial Economics. She's always had a certain set of tasks which fit to her role description, such as stakeholder overviews and spreadsheets with competitive overviews. She has even created templates that made her do her work faster. Now with the agile transformation however, there are a lot of new and different tasks coming in and she's quite unsure on how to handle these tasks. She therefore relies on team members and the product owner to provide ways of working so that she can find structure in her work again. For now she continues to work on those items which she feels most familiar with. Besides her job at ABN AMRO, els is active as a volunteer for her local orchestra. In the evenings she likes to watch her favourite TV shows and mainly stays update through news on Facebook and through reading the NU.nl and Intranet webpage.

Akshay Varhshi

Name	Akshay Varhshi	Age	53
Role	Software Developer	Years at ABN	8
Family	wife		

News inlets — GIZMODO, tech keynotes

Short Description — Focused, Introvert, Humble

Akshay is a 31 year old coder. He has moved from India to the Netherlands in order to work for ABN AMRO in assignment of his vendor. He has a lot of experience working with ABN AMRO's internal system that processes payments and orders of large sums of money, which he adjusts using a very old coding language. He is humble towards his product owner and generally awaits for items to be assigned to him after which he gets to work on them. His main focus is coding as that's what he is good at and was hired for. He prefers not to be involved in business related work items. In his free time he likes to spend time with family and friends and makes frequent trips back to India to visit his family members that haven't been relocated to the Netherlands. He is very interested in new developments in the software development industries and thus watches keynotes by the big public cloud providers, reads new articles by Indian tech news outlets and also experiments with the cloud in his free time.

Alex Hanzo

Name	Alex Hanzo	Age	24
Role	Digital Analyst	Years at ABN	1
Family			

News inlets — THE VERGE, TC, keynotes

Short Description — Structured, Networker, Realist

Meet Alex, he's 24 years old and works for ABN AMRO as a digital analyst. He just graduated from his Master's in Marketing. He's very interested in the latest technological developments and therefor reads a lot of tech news sources such as The Verge, Techcrunch, online financial news outlets that report on fintechs and always watches important keynotes from Apple and Microsoft. He always shares the most important developments with his team and always tries to think about the new possibilities these technologies offers He likes to drink beers with his mates and discuss the status of their cryptocurrency wallet. His main goal is to make sure new services and products includes new and advanced technological components, however is often annoyed by the limiting factors of the existing IT systems and sometimes just decides to ignore them in new concept development.

This section focuses on how the work flows throughout the agile organisation, where it comes from and how decisions are made. Firstly, the cascading of work is discussed. Secondly, the scaling mechanisms and artefacts will be discussed. Third, the entire flow from strategic theme to daily work will be explained. Lastly, alternate workflows will be discussed to stress and exemplify the fact that work is not solely pushed from the from the top down.

ABN AMRO has made the shift to the agile organisation and explicitly made the decision to focus more on interactions and informal communication, and group consensus rather than structures and rigid processes. There were a limited set of boundary items provided to the employees in the Agile Organisation in order to organise the flow of work, however they were free to adapt, employ and tailor processes to fit their needs for as long as they adhered to the agile principles.

In order to facilitate a flow from strategy to execution, ABN AMRO makes use of the epic - user story typology used in the Scrum framework, however extend these from strategic pillars all the way down to tasks (See Fig 2-18)

In order to deal with the complexity and coordinative issues within this vast agile landscape. ABN AMRO has created a set of scaling practices that help foster communication, collaboration and eventually help in keeping everyone aligned. These scaling practices are perceived to be key in aligning the strategy with the execution. The scaling arena's ABN AMRO Fast Forward proposes touches upon all hierarchical levels of the organisation (See Fig 2-19). The most important ones are disccussed on the next page

	Name	Description	Example	Level
Big ↑	Saga	Indicates the strategic themes of a business line.	*Digitize & Optimize product processes*	Business Line
	Episode	Breaks down from saga's and should be able to be completed in 3 months to 1 year	*Improve & Expand digital sales processes for insurance*	Grid
	Epic	Further breakdown from episode, this is where things get more concrete. Work generally takes 1 month to 3 months.	*Requesting Car insurance online*	Blocks
	User Story	A work item that gets pulled into the backlog during the sprint review. Should be able to be completed in a single sprint	*As a customer I want confirmation that my request is being processed and coverage is granted, so that I know my car is insured*	Single Block
Small ↓	Task	Sometimes user stories are still considerable in size and are broken down into tasks and subtasks. They should be able to be completed in several hours up until a few days	*Front-End Modelling of confirmation page.*	Individual

Fig 2-18 "Work Cascading"

Fig 2-19 "Scaling Arena's"
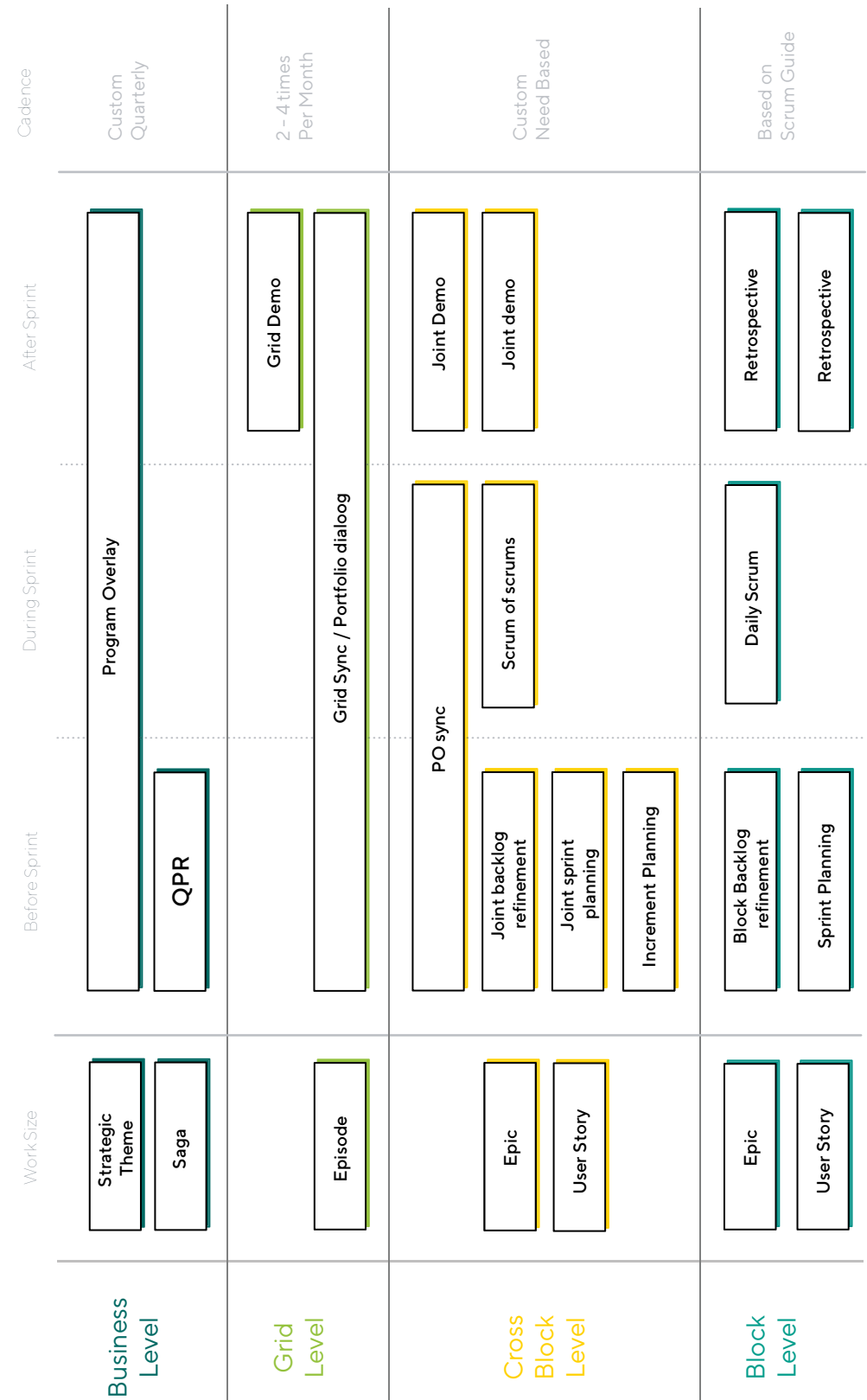
- **The QPR** - involves management teams and senior managers, who come together once every three months to discuss the strategic themes they're going to focus on for the next quarter. These decisions are made outside of the agile organisation by senior management. Occasionally Grid Owners join these meetings to give input on these strategic themes.
- **The Grid Sync** -mainly concerned with updating the Grid Portfolio (a backlog for the entire grid). This meeting involves the GO, Engineering Lead and all the grids PO's, to talk about the episodes the grid is going to work on in the next couple of sprints. The decisive power lies with the Grid Owner as being Profit & Loss responsible for his product. However, again these decisions are generally made in dialogue with the stakeholders.
- **Joint Sprint planning** - this is used for teams who work together closely and need to sync on the epics and user stories that are going to be worked on in the next sprint. Decisions are made in consult with all involved parties and there's no decisive power. When in conflict, the Grid Owner will have mandate on what will happen.
- **Increment planning** - Unlike Joint Sprint planning the Increment Planning involves more teams and bigger changes. The responsibility and decisive power lies with the team or grid that carries the largest portion of work.
- **PO sync** - This meeting can be used during planning as well as during a sprint to align with other blocks on the work that needs to be done. All PO's come together and have a dialogue on decisions that need to be made.
- **Sprint Planning** - The Value Delivery Block itself is present and possibly even stakeholders that have dependencies. The team and it's PO plan the backlog for the upcoming sprint according to the Scrum guidelines. The decisive power in this case lies with the PO.

To sum up, within the agile organisation a clear cascading of work is used (Saga, Episode, Epic and User Story). The breakdown of this work links into the flow, where on grid-level decisions are made about which episodes are prioritised in the Grid Sync, and on Block level the Epics and user stories are handled by PO's on their backlog. Ideas, work and initiatives flow top down, however also flow from the bottom up. In general, there is no rigid governance and specific processes within the agile organisation, however boundaries are provided to grids and teams in which they have freedom to find what works for them.

Processes, Governance and Interactions
Culture is a big part of the success of an organisation. With the transformation, ABN AMRO realised that being successful with their Fast Forward transformation, they not only had to change structures and processes, but also the culture. As explained earlier, during 2017 ABN AMRO introduced new cultural principles that had great overlap with agile principles (See Fig 2-20)
With the Fast Forward transformation the mindset was shifted towards notions of lean startup and the agile manifesto. Focussing on launching early and iterating often. Seeing time as a fixed facet and tasks as variable. Instead of failure avoidance more emphasis on failing fast, with small and easy experiments. Higher degree of self reflection and feedback through regular retrospectives. Moving away from control to embracing the unknown and higher focus on learning by doing.
This shift from traditional mindset and culture towards this agile culture has proven to be difficult and is ongoing as we speak. However ABN AMRO has taken measures to really make this shift. For example reflected in their efforts to co-locate the grid's as much as possible. Rebuilding the environment to better reflect the informal communication culture. Moreover, by making the transformation to large scale agile, many management layers were removed essentially flattening the organisation. The shift in mindset and culture is already showing through for example clothing style and d approachability of "higher-ranked" personnel which has significantly improved.
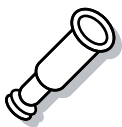
Principle	Description	Linked Agile Manifesto principle
Crazy for Clients	Everything you do revolves around the client; this really is the heart of agile. With every action and at every meeting, always ask yourself, 'How does this benefit my client? Is this useful, or should I be doing something else?' Client centricity is not new, yet making clients so important that they are always top-of-mind must be our second nature.	*Our highest priority is to satisfy the customer through early and continuous deliveryof valuable software.*
I am Team	Teamwork holds agile together; you are your team. Together you work to bring about the best and most attractive result for the client. Teams are made up of colleagues with different areas of expertise from both IT and the Business Lines, to deliver valuable high quality solutions together quickly. Wherever necessary, back-office expertise, such as Legal and Risk, are part of the team, which greatly makes interaction and decision making fast and effective	*Business people and developers must work together daily throughout the project.* *The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.*
Give Trust	Trust is another critical element in the agile mindset, both giving and receiving it. In an agile organization, managers mostly play a coaching and facilitating role. Responsibility for how work is organized and done lies with the team. Team members make decisions within the sprint which speeds decision-making.	*Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.*
Be a Columbus	Experimentation is innate to an agile mindset. It means not waiting for a product to be fully figured out – with every box ticked and every eventuality covered – instead it means building and testing 'along the way', demonstrating and testing results to stakeholders and clients frequently. The way to create innovative and relevant products is with an open inquisitive mind. Mistakes are simply part of the process. Mistakes in agile are not something to fear, but an opportunity to learn. Suggesting something new requires courage from team members and, moreover, trust from stakeholders. Creating a safe environment for experimentation is essential for working agile	*Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.*
Are you in?	Perhaps most important of all, the agile mindset is something you have to experience to develop. Try working agile. See what you can do with it. If you get stuck, keep an open mind, ask questions, learn more and find help. Dare to reinvent yourself. Is it easy? No. Is it exciting? Yes. Will you grow personally and professionally? Definitely!	*At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.*

Fig 2-20 "Cultural Values linked to Agile principles

Transformation Support

The Fast Forward transformation was orchestrated from a single department within the I&T business line. A team of 45 people who supported the entire grid landscape in its transformation. Within the Fast Forward transformation department there a split is made between consultants and coaches. Consultants are focussed on solving challenges and issues that concern a larger part of the landscape (e.g. multiple grids or business lines). And the coaches are concerned with supporting the individual grids with the implementation of agile artifacts like the grid sync for example which was discussed earlier.

The grid landscape receives coaching on different levels ranging from business line all the way to block level (See Fig. 2-21). On business line level there are business line agile coaches that are part of the Fast Forward program. Their main focus coaching and facilitation on issues that happen between or beyond grids. They could for example help in setting up the QPR meeting that brings together all grid owners and their respective managers. On grid level, agile coaching is performed by grid coaches, who also fall within the Fast Forward Program and mainly focus on facilitating and coaching challenges and issues which are block-transcendent (e.g. everything

related to the agile way of working beyond the blocks). These coaches could for example help in setting up a grid portoflio wall that houses all the priorities for a team (See Fig 2-22). On block level there's support from the Center of Excellence which has block coaches who focus on proper implementation of scrum within the blocks.

Next to the coaching employees, the grid landscape receives different types of support. Firstly, Fast Forward invests in Scrum Certified Training programs for all employees in the grid landscape. Secondly, multiple learning bites (which are training sessions, blogs, vlogs) are developed according to the needs of the employees. Lastly, bank-wide events were organised tuned to the phase of the transformation, filled with workshops and keynotes to teach employees in the agile organisation about best practices and interesting new developments.

To sum up, the transformation is supported through a dedicated support team called Fast Forward together with the Center of Excellence "Agile Way of Working". Coaches are allocated to all levels of the organisation. Training sessions, workshops and events are all openly available to those who are in need to learn about the agile way of working.

Fig 2-22 "Grid Portfolio Wall"

Transformation support team

Fast Forward Program

15 — Agile Change Consultants
30 — Agile Grid Coahces

Grid Landscape

Fig 2-21 "Transformation Support"

Coaching on different levels

Grid Landscape — Agile Mnmgt Consultant

Business Line — Agile Business LineCoaches

Grid — Agile Grid Coaches

Block — Agile Block Coaches

Training

PO/Scrummaster Certifications

Learning Bites
E.g. blog about how to do an effective retro

Training Sessions
e.g. for PO's on how to write better user stories

Events & Fairs
e.g. event where there are learning sessions throughout the day

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2.4.2. Challenges in the agile organisation

This section presents the findings from the Grounded Theory Method. As stated in the research design section. Two ways of coding were employed as the first method didn't yield very distinctive results when it came to identifying challenges. Eventually th e 6C's coding family of Glaser was employed (See Fig 2-23) A total of 17 challenges were identified. Some of them share great overlap, however this is common in the development of new theories (Glaser, 1967). Of the 17 challenges, all 17 were kept as validation had shown the majority of the participants recognised all challenges. Individually submitted challenges through the validation were all found to fit existing categories and therefore no new challenges were created. Some patterns were observable in the ranking of the challenges, and a clear top five of the challenges was found in the prioritsation of them.

1. *Lack of clear vision and leadership*
2. *Organisational siloing*
3. *Linking strategy to execution*
4. *Traditional behaviour & mindset persistent*
5. *Dependencies & Limited Autonomy*

For the purpose of clarity, only these five challenges will be discussed as these challenges were also found to cover the the other 12 partly. Though all 17 challenges with their full explanation can be found in Appendix H.

Lack of clear vision and Strategy

Middle managers weren't hired based on their leadership skills, this leads to a lack of vision and strategy within the grid landscape. Eventually complicating the prioritisation of tasks, disconnection of work contribution to bank wide strategy and overfilled backlogs

"[discussion about lack of leadership and question what the consequences are for the grid landscape] Confusion and paralysis and because there are so many different streams of work and there is no clear answer on how we're going to do it. The boundaries are unclear, the traditional world passes by now and then, that creates ambiguity"

– Participant 7

Condition	ABN AMRO has hired managers based on their top down management style
Causes	The agile bottom up approach clashes with the top down management approach. Besides, managers that were hired before the agile transformation were selected based on their management skills not leadership. Most of these managers, 70% was relocated into the agile landscape. In addition, for ABN AMRO's agile implementation, senior management is out of scope for the agile organisation and still acts in a traditional way. Next to that, the grids are expected to establish their own vision in light of the bank wide strategy.
Consequences	There's a noticeable lack of leadership within the agile landscape. This further results in difficulty in prioritising work based on value and confusion on the where the grid is heading. Which is represented in the overfilled backlogs and the POs and GOs inability to select and remove items. *"On that basis you're able to to prioritise the backlog, by setting boundaries with each other and the POs will prioritse within those boundaries. That is insufficiently at the moment, so really the reasoning behind why a certain item is at the top of the backlog. That's something we really need to grow in" - Participant 3* Not having a clear vision and strategy on a grid level further widens the gap between daily work and the bank wide-strategy. And without clear boundaries and goals to work for, it's easy to select work based on the known, further fueling the traditional mindset.
Contingencies	The Fast Forward program and grids themselves start to do visioning workshops and sessions to establish a clear vision and strategy for the grid that aligns with the bank-wide vision and strategy. Even more, there are leadership training sessions for POs and GOs to improve their leadership capabilities
Covariance	The number of leadership-style managers operating at lower parts of the organisation positively influences the adoption of the agile mindset

Fig 2-23 "Glaser's 6C coding family"

....

Internal conflicting strategies
There's a big push on cost savings from the "backoffice" organisation, which are departments like IT operations, whilst the "front office" (also called the business) is pressuring for progression and new propositions. Both of these strategies come together in a single grid which makes it really hard for a Product Owner to select which work to pick up; am I going to follow the cost saving strategy and decommission this old system, or am I going to invest a team's capacity to build this new feature?
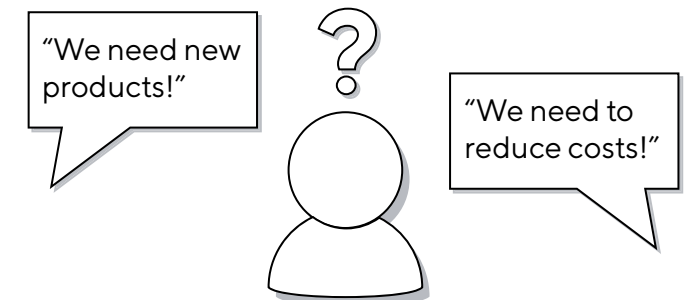
Fig 2-24 "Conflicting strategies"
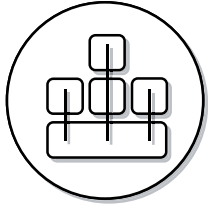
Organisational Siloing

The way the grid landscape is organised results in many interdependencies with other grids when a change is implemented. Consequences of this are, organisational silo's, limited autonomy for the teams and complex coordination and stakeholder management.

"We've organised ourselves along products and often within the products around systems. And I believe that if we want to do this the right way, we should organise way more around end-to-end customer journeys or at least end-to-end systems or processes"

– Participant 5

Condition	Organisation is product and system oriented
Causes	Most of the work done is dependent on multiple grid before it's fully implementable. Secondly, grids are responsible for their own profit and loss, meaning that they're responsible for optimising and improving their part, which is part of a larger value stream. Third, there is no explicit governance and guideline on the continuous management of dependencies other than informal communication. Fourth, Teams and grids are organised and structured around systems and products. Lastly, IT developers before the agile transitioned were educated to work on specific systems and are therefore heavily system oriented.
Consequences	This leads to organisation silos because of the structuring of the landscape.

"It gets more interesting where teams need each other or aren't able to do it themselves. And considering the design, that's always the case. The capabilities aren't divided in a way that teams and grids can be fully autonomous, so they really need each other" - Participant 2

Getting on a backlog isn't the problem, however getting priority is very difficult since the grids tend to prioritise work that contributes to their own P&L. A possible danger of this is that suboptimization starts happening, because grids optimise for part of an entire end-to-end chain

"...the danger is that you start to organise suboptimal. That you sub optimise for your part, however looking from a bank-wide perspective you start to compete with each other" - Participant 3

In addition much time is lost finding and managing the stakeholder within their agile landscape

Contingencies	The agile Fast Forward program is already working on providing more guidelines when it comes to alignment artefacts. Another possible contingency is to reorganise the grid landscape to be more end-to-end focussed. Grids are already experimenting with reorganising for end-to end-delivery internally
Covariance	When the organisation is more structured around towards product's and systems in an agile framework, it's more likely going to result in organisational siloing.

Let's build a simple feature
If for example you would want to view your account balance without having to log in on your Mobile Banking App. A feature which is offerd by Monzo, a challenger bank from the UK in the form of a widget (See Fig. 2-25). Whilst this may sound like a simple feature, this would require at least four grids ("Mobile, internet & design", Channel Security, Identity & Access, and Accounts, "Payments & Packages") to even attempt the change. We're not even talking about the amount of teams and systems you'll need to change in order to get it done.
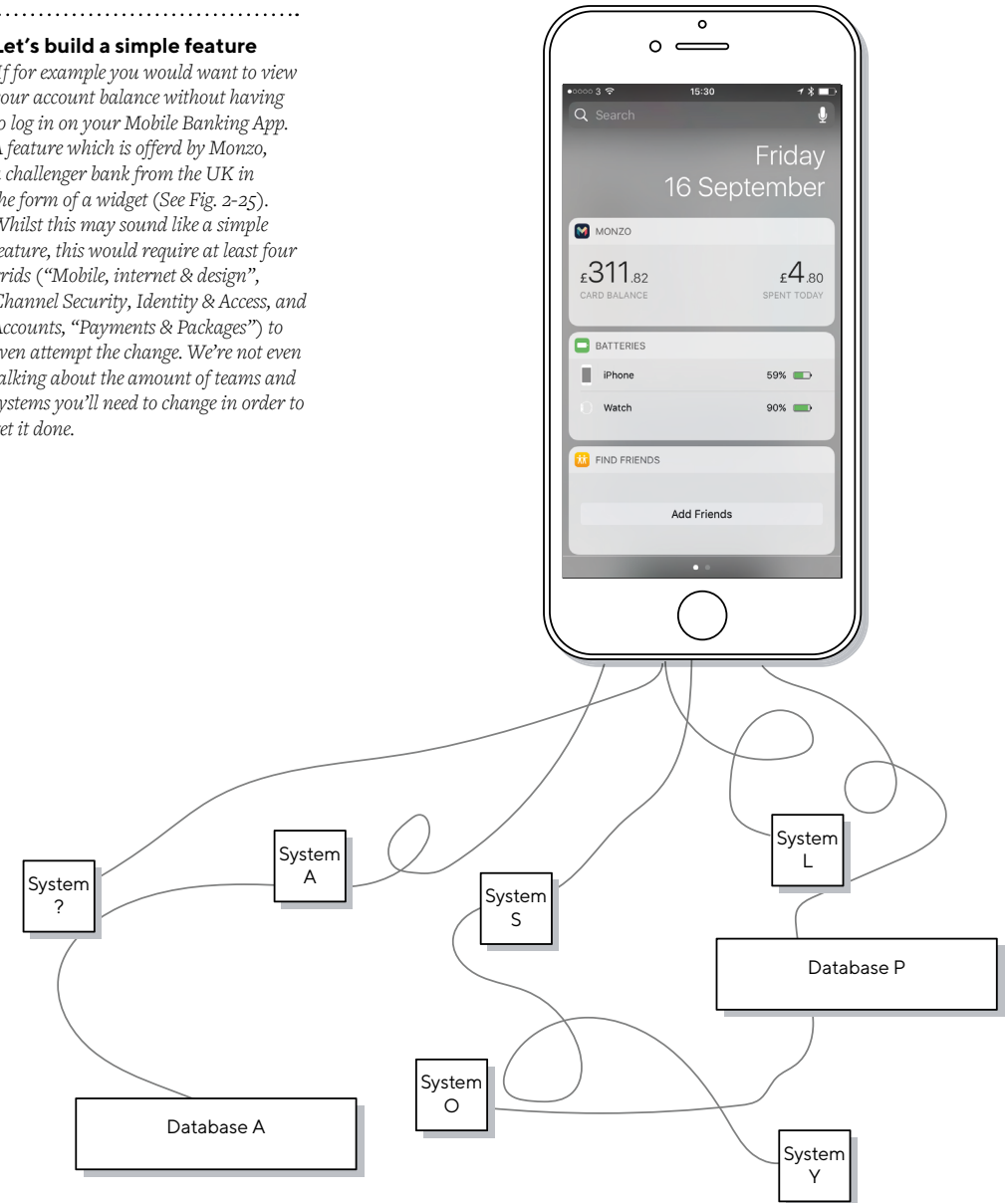
Fig 2-25 "Monzo Widget"
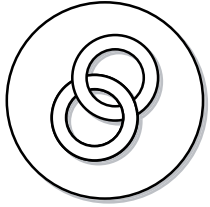
Linking Strategy to Execution

Linking strategy to execution shows to be challenging. Since management doesn't work agile and strategic objectives don't align with the cadence and flow of stories in the grid. A visible gap exists between grid strategy and bank-wide strategy. A lack of agile portfolio management governance further complicates this.

"really going from strategy to execution, however in full breadth through the entire business line. Preferably all the way down to the grids, that's something everyone is struggling with."

– Participant 5

Condition	There is no clear governance on how to link strategies on different levels (e.g. grid, business line and team) to the work that's being done.
Causes	Awareness of the agile way of working is low within both senior management and other traditional parts of the company. Other than the cascading of work size (e.g. sage, episode, epic), there is little governance on how to actually link strategy to the execution. As mentioned before, there is a lack of clear strategy within grids and teams (GO's and PO's responsibility). This is in line with the finding that there are no clear success metrics for work items, and generally have an unclear connection to the bigger work items like sagass and episodes.
Consequences	Many grids struggle to find effective ways to manage their portfolio in alignment with the agile cadence of the grids. Moreover, without a clear strategy, prioritising and creating an effective portfolio is challenging

"We do have some general boundaries from up top. However, that isn't exactly described in a way that I exactly know at the lowest level to which items I have to say yes or no." – Participant 6

The gap between bank-wide strategy and grid strategy leads to a disconnect of daily work to the strategy and how it contributes to it. This disconnection results in a misunderstanding of each others' perspectives and subsequently both parties tend to fall back into traditional behavioural patterns.

"The big impediment that I still see is the big gap between senior management and on the floor. That results in not always having an optimal understanding of each others' perspective, and not having a dialogue about it either. Consequently, people tend to fall back into old behavioural patterns, which doesn't get fixed since people don't talk about how things can be done differently." – Participant 1 |

Besides, because of the agile awareness deficiency in senior management, benefits of the agile organisation are not utilised. An example would be the yearly planning cycles of strategic themes and work that is related to that, whereas agile should give the ability to pivot and change these strategic directions (or work related to it) more frequently.

Contingencies	The Fast Forward program is providing and facilitating the discussions on higher management levels and also helps in setting up the Quarterly Portfolio Review meetings. In addition to facilitating the dialogue between senior management and the grid landscape, learning materials (learning bites) are shared within the grid landscape through connections to that everyone has something to work with
Covariance	-

Agile in the board room
Bosch, global supplier of technology and services was one of the early adopters of the agile methods. At first they only included roles that were concerned with developing new products and services and left out traditional functions, including senior and higher management. After experiencing a lot of challenges the board decided to take a more unified approach, with them as a steering group. However in contrast to being a regular steering group they became a working group with all the executives prioritising a backlog of strategic objectives and actively removing impediments to greater company agility.
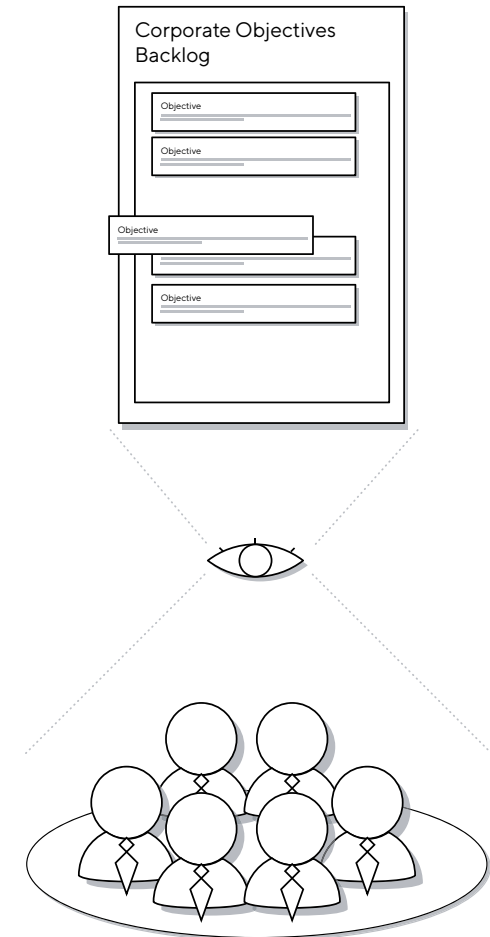
Fig 2-26 "Board room agile"
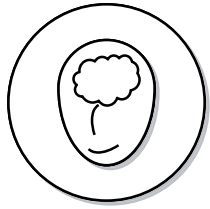
Traditional Behavior and Mindset Persistent

Another problem is the persistency of traditional mindset and behaviour of employees. Having an agile and a traditional organisation, traditional behaviour of senior management, hierarchical design and the companies' history lead to team members struggling to behave and become more agile, and tend to fall back to traditional behavioural patterns

"Having shared responsibility without having a formal owner of something. That... no doesn't happen. They're still used to having everything explained and bounded in detail. Having the ability to say; he's the owner, he's responsible so he has to take care of it"

– Participant 6

Condition	The condition for this problem is related to the partial implementation of large scale agile within a very traditional company.
Causes	*"Well yeah, some of the patterns which have emerged through history, sometimes complicate the change" – Participant 7* The pull-approached transformation gave very little guidance to specific interactions and ways of working. Senior Managers have landed in their positions through their traditional management approaches, whereas agile asks for different leadership. Also work is still being pushed down from the traditional organisation and senior management. Also within the grids there is still 70% of the traditional employees that work in the new agile organisation. *"We've had a lot of people return to roles inside the agile organisation, who are strong on the content, however don't fit the agile model. I think we've been too careful when it comes to letting people go, or laying people off" – Participant 2* That is challenging, whilst there is this stark contrast between the agile values and the traditional values of the company. There are still hierarchical lines, even though they're less perceivable, POs and GOs are still hierarchically positioned above business roles. The historical nature doesn't help in this situation either where there's a very short term focussed and hierarchical mindset
Consequences	The lack of guidance, and traditional behaviour of the surrounding stakeholders all lead to the result that there is still passive behaviour of employees inside the blocks. Because there are so many unknowns, it's easy for people to revert back to old ways of working. There's this tendency to please the hierarchical lines and having to process all requests, which leads to overfilled backlogs. Many still complain of command and control style management from senior management. This might be due to their lack of awareness on the agile way of working or their lack of involvement. A big problem that goes with all of these consequences is that the risk-averse mindset is persistent.
Contingencies	some of the contingencies include (1) buying and hiring external skills, (2) setting up dialogues in finding the right balance between guidance and autonomy and (3) simply laying off people that don't match the agile way of working
Covariance	Behavioural change towards agile values and principles is more likely to happen through commitment in change of senior management.

Wine Wars!
Back in the 1980s a group of young wine producers responded to changes in the market that requested fruitier and less tannic wines. The wine they were producing , Barolo, has always been produced using very specific and traditional techniques. The younger "modernists" used new techniques and processes that considerably shortened the aging and riping for consumptions from weeks down to days, and in this process making it fruitier and less tannic (see Fig 2-27). The problem wasn't the tast of the wine, however the great off ence taken by traditional barolomakers as these young fellows disrespected tradition and culture. The Barolos produced with the new technique weren't even considered to be barolo's by some. Eventually there was a clear conflict between traditional old winemakers and progressive young winemakers. To this day both of these techniques are still used, however the conflict has leveled out. This example goes to show how much can happen when new processes and techniques are introduced in a tradition heavy setting.

Barolo — 15 - 30 Days

NO Barolo — 7 - 10 Days
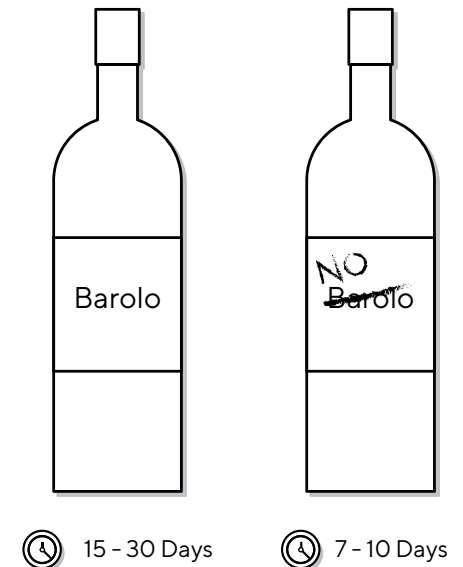
Fig 2-27 "Barolo aging difference"

Key Spot
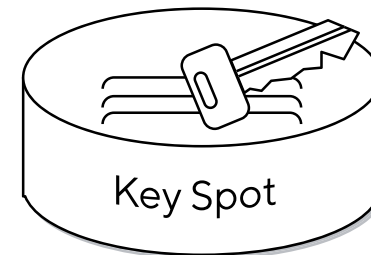
Fig 2-28 "Habit of key location"

Who moved my stuff?
Have you ever replaced or changed a piece of furniture, changed the arrangements of your cupboards? Even though you might not be aware of it, there are structures and processes that are hard-wired in your brain. There's probably even a standard place where you put your keys when you come home, and over times these processes are performed sub-consciously (see Fig 2-28). Now if someone tells you to put the keys in a different place, you'll probably keep putting the keys in their old location even though someone told you not to do it. It takes a lot of time and effort to unlearn these processes and structures that have entered the subconscious realm..
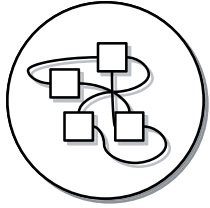
Dependencies & Limited Autonomy

Legacy systems, centralised testing, outsourced release and IT operations, having architecture centralised out of landscape, and a historically system oriented IT organisation are all factors. Lead to decreased team autonomy, highly specialised IT skills, and delays in the development process.

"We are surrounded by a complex environment, with all sorts of systems and products. As long as that complex environment exists, we won't be able to have this utopia of fully autonomous "cells" that show full ownership and entrepreneurship."

– Participant 4

Condition	A traditional bank built on legacy systems and architecture making a move towards the agile way of working
Causes	ABN AMRO is built on old legacy systems and mainframes, where a lot of their IT operations are outsourced (e.g servers and infrastructure services). Many developers were hired and educated to develop these specific software systems. *"But we mainly have teams that have knowledge of systems, so those developers only know how their systems work." – Participant 6* Secondly, testing and production are currently centralised outside of the grid landscape. Third, due to the lack of IT knowledge of business stakeholders (e.g. POs and GOs), IT has the tendency to be neglected on the backlogs. Lastly, the general IT architecture organisation is not placed within the agile organisation.
Consequences	IT Developers are currently have a very speciallised skillset tailored to specific systems and lack knowledge breadth to work on other systems. The centralisation of testing and operation, together with the dependencies due to outsourcing of IT operations results in delays, hand-overs and decreased autonomy for the VDBs. *"What's happening is that value propositioning is being done by the team in the grid, that work is then later on the delivery is done by a third party vendor, then functional test are run by the business part in the grid and deployment goes via the IT operations side. This symbolic agile/scrum situation is something we're losing a lot of benifits on." – Participant 2* The complex IT landscape and narrow skillset of developers, served as input for the decision to organise based on products and systems. This form of organisation increases organisational siloing.
Contingencies	First, in order to evade the blocker of the internal IT systems and architecture, new spin-off are launched into the world which are build on a new IT systems and architecture. Second, ABN AMRO is trying to improve this situation is by moving to the cloud, increasing their scalability and providing more autonomy to the VDBs. Last, ABN AMRO's infrastructure is gradually simplified by phasing out of old legacy systems and moving towards more adequate systems.
Covariance	-
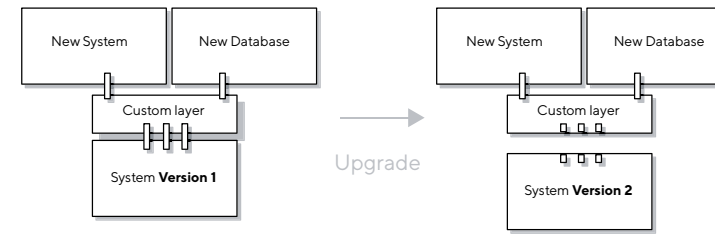
Fig 2-31 "IT system problem"

A Physical IT landscape
Rabobank built a physical model to better understand it's IT landscape and its dependencies. IT took over 3 months to collect the data before they could start the construction of the model. All the lines you see are dependencies between systems and processes. It seems ABN AMRO isn't the only bank with a complex IT landscape (See Fig 2-30).

Layer on layer on layer
Within the grid investments people rely on a system that's very old. Whenever a new order or transaction is placed it is handled by this system. However because a couple years back ABN AMRO was very progressive and wanted features that weren't supported by that version of the system, the vendor decided to build a "layer" on top of that version that enables certain features. Now decades later, ABN AMRO can't upgrade this system anymore because when it does, it breaks the link with the "layer" built on top of it. Since many other systems that followed were linked to that layer, no one knows what will happen if the system gets updated. It might break a lot of other processes, and ABN AMRO might end up not being able to process new investment requests anymore (See Fig 2-31).

Fig 2-30 "Rabobank Physical IT Landscape"
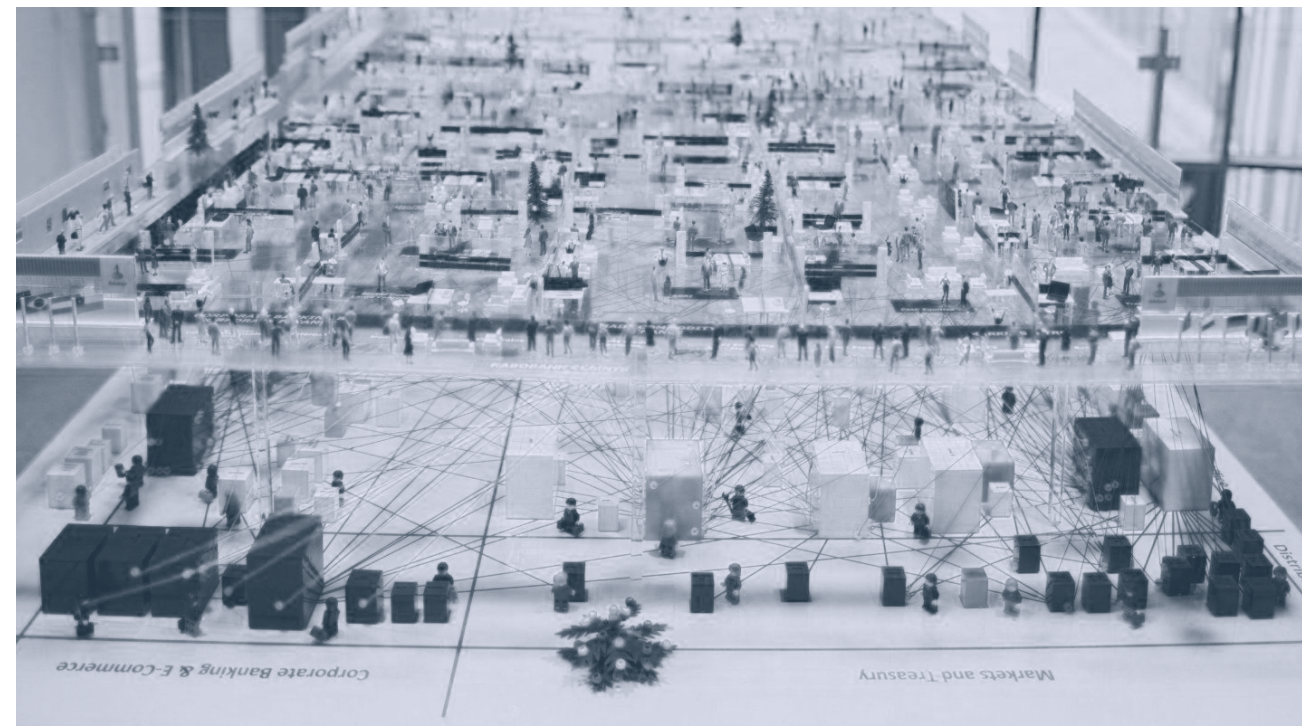
2.5 Discussion

The goal of this research was to find challenges for tailoring large scale agile methodologies in a large financial services firm. ABN AMRO implemented a tailored large scale agile model with Scrum as a basis and inspiration drawn from the Spotify Model. 17 challenges were identified of which the main challenges found are; lack of clear vision and strategy, organisational siloing, linking strategy to execution, dependencies & limited autonomy, and traditional mindset and behaviour. The findings of this research are most relevant in the context of a large financial services firm and are heavily subject to the contextual factors of the tailored case presented in this study.

2.5.1. Findings

ABN AMRO based their tailored agile model on the Scrum framework and drew inspiration from the Agile spotify model. They added a tailored role called the Grid Owner, who is responsible for a group of agile teams or blocks as they call them at ABN AMRO, which acts as an extra hierarchical layer. This configuration has much overlap with the Large Scale Scrum (LeSS) framework where a Product owner has multiple Area Product Owners under his responsibility (LeSS, 2018). One of the GO's functions is being a link between higher management, other stakeholders in the traditional organisation, and his/her grid in the agile organisation. A similar setup was found in a LeSS implementation within Ericsson, where the PO also served as a link to the traditional organisation (Heikkila et al., 2013). A hypothesis is made that even though agile propagates flat organisational forms extra organisational layers are necessary for coordinative and alignment purposes when implementing large scale agile frameworks inside a traditional organisation. This case study adds to literature by finding that when implementing large scale agile frameworks within a large financial firm, extra organisational layers are necessary.

Interestingly, many of the challenges found are applicable to the entire organisation and do not limit to the scope of the agile organisation itself. This finding corroborates with previous findings that with any large scale agile implementation, changes will need to happen throughout the entire organisation (Paasivaara & Lassenius, 2016). It also indicates that solely tailoring agile frameworks for parts of the organisation won't be sufficient. Looking at the challenge of linking strategy to execution for example, the cadence of the teams in the agile organisation doesn't match anymore with the planning and strategising that still happens in upper parts of the organisation where they don't work agile. Whilst in literature multiple challenges in a large scale agile setting are reported, they mainly focus on senior management's lack of support (Nuotilla et al., 2016; VersionOne, 2018; Chow, & Cao, 2008; Smits & Rilliet, 2011) and traditional management behavior (Dikert et al., 2016; Nerur et al., 2005; Kuusinen et al., 2016; Gandomani & Nafchi, 2015). The finding at hand though indicates that the challenge or better said opportunity lies in better aligning strategic planning in upper management with agile processes so that they can better reap the benefits of agile. The insight also extends prior literature by not only seeing lack of senior management support as a possible challenge, but also the misalignment with and utilisation of agile processes. A hypothesis is therefore posed that senior management participation in the tailored agile landscape will increase a firm's agility. Firms that want to implement and tailor large scale agile frameworks should consider redesigning their strategic planning processes, even in upper management, to better make use of the benefits agile methods bring.

Continuing on the scoping part, ABN AMRO has included specific business and IT departments in the landscape that are focussed on (new) product development. No other case studies or reports on large scale agile transformations were found that merged business and IT departments on such a scale. Examples of departments that weren't included in ABN AMRO's transformation are marketing, customer experience, HR and compliance. These interfaces with the traditional organisation, hinder the adoption of the agile way of working. As for example traditional HR processes incentivise individualistic behavior, which further stresses the impact HR has on the agile organisation within the firm and also aligns with previous findings about misaligned HR processes in an agile setting (Nuottila et al., 2016: Nerur et al., 2005; Kim et al., 2016; Khalid et al., 2015; Conboy et al., 2011). Similar challenges were found in literature and this finding further confirms that a large scale agile transformation needs to be considered in it's full context and that the

challenge for tailoring generally lies in implementing into the existing organisation (Iivari & Iivari, 2011; Nerur et al., 2005; Conboy et al., 2011; Rigby et al., 2016). Furthermore, it was found that the existing literature for large scale agile transformation generally described the large scale agile landscapes in isolation with no description of where in the organisation it was placed as well as little explanation on what the interactions were with other departments outside of this organisation. As large scale agile is moving into different parts of the organisation and generally only covers part of the entire organisation, and the importance of tailoring it to the existing context is shown, future research could more clearly indicate what parts of the organisation are and are not included in the transformation and how the "agile transformed part" of the organisation interacts with the traditional one. Moreover, as there's a lack of research on agile transformations that reach beyond IT departments, future research could be directed at analysing how to tailor large scale agile in other parts of the organisation and how the inclusion of these other departments effects the overall agility. For example at ABN AMRO, teams were reliant on internal compliance processes that did not align with the agile processes of the team, eventually holding them back (making them less agile). Therefore the hypothesis is that the scope of the agile transformation seriously influences the effectiveness of the agile transformation. The suggestion is that elaborating on the interactions with the interfaces to other non-agile organisational parts in tailoring a large scale agile framework is crucial.

Within ABN AMRO they suffer from a very complex IT architecture that heavily influenced the way they organised their agile landscape. This finding is supported by many others in literature. Van Waardenberg & van Vliet (2013) for example found the IT landscape complexity to be the most daunting element for any enterprise trying to move to agile. At ABN AMRO many agile teams are organised around systems and components that were subsequently grouped per product. However, many times a single change to a product is dependent on multiple systems and components, even ones that fall within responsibility of other teams. Combined with the decision to give each of these teams autonomy and mandate over the backlogs of their products and specific underlying systems, creates a complex situation where it

becomes difficult to achieve change due to the stakeholder landscape and dependencies. This situation is the result of the ambition to provide end-to-end responsibility to agile teams, to allow for more autonomy. Though the finding here is that the product and system organised landscape ABN AMRO designed combined with the autonomy provided to the teams (based on agile principles), paradoxically presents itself as a limiting factor to their freedom. Moreover, the IT architecture in that sense limits the degree to which autonomy and mandate should or can be given to teams that are organised around them. This finding aligns with other findings by Paasivaara et al. (2018) who studied a large scale agile transformation at Ericsson, who found that teams on their own could not implement any feature due to dependencies as well as human resource constraints, however they do not talk about the organisational typology. Given that true end-to-end responsibility and autonomy for agile teams is unrealistic and even counterproductive in a product & system oriented organisation of ABN AMRO's size combined with such a complex IT landscape, more research should be done into what organisational structures or types better support agility. No other research has been identified that combines both organisational structures/types and their applicability of large scale agile and is thus a recommended direction for future research.

ABN AMRO merged together parts of their business and IT departments into a single organisation. They did however keep the two separate hierarchical lines, which leads to confusion inside the agile organisation as both organisations (business and IT) have diverging strategies. This creates confusion and works against the collaborative principles of agile, as within a single agile team both IT and Business employees will have to report to different people. Furthermore, this complicates the prioritisation of the work as different stakeholders have different priorities of their own. The assumption is made here that keeping separate hierarchical lines when integrating two business departments will negatively impact agile adoption. In attempt to compare these findings to other literature no other case reports were found where both business and IT departments were combined into a single agile organisation as mentioned before. However, many times in literature the challenge was found that there was too little business involvement and

even an "us versus them"-mindset (van Vliet & van Waardenburg, 2013; Gregory et al, 2015; Vaidya, 2014), this was not the case at ABN AMRO as they're part of the same organisation. Combining both business and IT into a single organisation does show to positively influence their involvement and interaction and combining these departments could thus be a viable consideration for other companies engaging in large scale agile transformations.

A decision was made to make each Grid (a grouping of agile teams focussed around one area or product, like mortgages) responsible for its own profit and loss. In addition, each of the PO's in a grid is responsible and has mandate over their own backlog and all of the teams are self-managing. This configuration stimulates the prioritisation of work that contributes to the respective grid the team is working in, however in the current organisation these teams are always part of a bigger stream. This setup proves suboptimal as it stimulates organisational siloing, as for example only parts of a total stream are continuously improved separate from each other. A similar problem was found by Vaidya (2014), who found that in a large scale agile they lacked true feature and value stream teams. For them that led to more costly hand-offs and more processes in order to compensate for that. Multiple reports have been written that also report on the challenge of dependency management and inter team coordination in large scale agile setting (Hobbs & Petit, 2017; Dikert et al., 2016; Lindvall et al., 2002), and Dingsøyr et al. (2016) raise their concerns about architectural issues as a consequence. Our finding however extends on their results as autonomy and self management in a large scale agile landscape stimulate the forming of organisational silos. Within ABN AMRO no extra processes are in place to account for this and reported problematics like backlog competition and the "not invented here"-syndrome, indicate that having processes or solutions that do provide coordination and stimulation for cross-team collaboration could be beneficial in avoiding organisational siloing.

In extension to the organisational siloing, within the grid landscape a split was made between two types of teams the Value Proposition Blocks (business strategic focused) and the Value Delivery Blocks (IT development focused) which leads to separation within a grid. It further adds to coordinative efforts needed, handovers and extra layers in the development process. Only one other experience report presents a construct where they split product development and product strategy, which shared similarities with the VPB construct (Kalliney, 2009). They report on issues similar to those of the VPB of having an "us vs. them" feeling between the two different teams. This finding could indicate that whenever business and IT are integrated into a single organisation, splitting based on activity could also contribute to organisational siloing. However in contrast to that, a challenge prominent in large scale agile development literature is "Requirements Engineering", which hasn't been found to be a challenge within ABN AMRO. This is expected to the result of VPB teams that have requirements engineering as part of their responsibility. It seems that in large scale agile organisations, however anti-agile it may seem, splitting the development process or adding "stages" based on work type might positively influence the overall development process.

A lot of the work in the backlogs of the teams stems from new regulations or regulatory demands. This work is valued highly in comparison to other items of work and therefore most of the work that's done is to keep in line with regulations and thus little change that's actually focussed on product development based on customer needs or technological advancement. Whilst in literature there are multiple reports that indicate the mismatch between the agile way of working and the traditional, documentation heavy approach of regulators (Nuotilla et al., 2016: Fitzgerald et al., 2013), there are few that focus on the challenges of handling or balancing the amount of work that spawns from regulators and new regulations. As ABN AMRO moved away from a project and plan driven culture and moved to an backlog where work is added and prioritised in an ongoing fashion, it's easy for regulatory items to continuously jump to the top of the backlog and to eventually neglect work that's aimed at for example (new) product development and innovation. A statement is made here that due to the agile way of working, it's become easier to solely focus on regulatory items and "neglect" product development and innovation. In one other study by Fitzgerald et al. (2013) a company and implemented tailored scrum artefacts which they call "Continuous Compliance" and "Living Traceability", These types of alterations or artefacts are not applied within ABN AMRO's tailored agile landscape and indicate that when agile is implemented on a larger scale within a financial services firm, extra attention should be paid to create measures that deal with regulatory work. Still an observation is made that too little is known on the topic of handling regulatory work and balancing it with other types of work in a large scale agile setting and thus more research into this topic is suggested.

One of the challenges ABN AMRO faced were traditional behavioral patterns by people in the agile organisation. In literature this problem has largely been attributed to the lack of senior management involvement and their traditional way of managing (Dikert et al.,

2016; Nerur et al., 2005; Kuusinen et al., 2016; Gandomani & Nafchi, 2015). Whilst this is partly the case within ABN AMRO as well, they've included large layers of middle management in the agile organisation where many of these business managers landed in Product Owner roles or Grid Owner roles and thus management involvement is not part of the challenge. The skill set however of these traditional middle managers seem to misalign with the new agile paradigm and hinder the agile adoption within the organisation. Multiple studies support this finding that in a large scale agile transformation leadership, entrepreneurial and facilitative skills are crucial, and that these skills generally deviate from what traditional middle managers were hired for (Hobbs & Petit, 2017; Rosenberg, 2015, Chen et al., 2016; Rigby et al., 2016). The speculation here is that the lacking leadership skills of relocated middle managers in key roles (e.g. PO) translates itself in an insufficiently clear strategy and vision in the agile organisation. Multiple articles stressed the importance of a Product Owner, however mainly focussed on its commitment and dedication (Gandomani et al., 2013; Ktata & Levesque, 2009; Vaidya, 2014). This finding suggests however that even when commitment and dedication is present the challenge is related to the skillset of the person in this key role. This further implies that large traditional organisations that transform to a large scale agile framework that houses multiple organisational layers, should seriously reassess the skillsets of their current middle management when relocation is at play. This further aligns with recommendations made by Dikert et al. (2016) to engage with "change leaders without baggage from the past".

In addition to traditional behavior stimulated by "management" in the agile organisation. A different point of view could be taken on the behavior of team members in the agile landscape. From the outset of the transformation autonomy and freedom was given to the agile teams. However due to the employees history of working in a traditional company, where they were "commanded and controlled", it seems a sudden change to freedom and autonomy, doesn't result in them utilising it. This finding corroborates with findings from Martinez et al. (2016) who stressed the importance of teach the employees agile values and principles and make them understand them instead of merely teaching practices. Where ABN AMRO followed an incremental approach to the transformation similarly to a large amount of others (Nielsen & McMunn, 2005; Dikert et al., 2016; Gandomani & Nafchi, 2016; Conforto et al., 2014; Goodman & Elbaz, 2008; Rigby et al., 2016), literature mostly talks about an incremental approach in the sense of expanding the amount of teams that work agile. This finding shows that an incremental approach in scaling agile should also apply to the way a transformation is made towards these new values (e.g. a step-wise approach to more autonomy and freedom) and not solely on the amount of teams. Within literature there is no report that highlights steps to guide the employees from a traditional mindset to an agile mindset. Whilst training on mindset and practice did occur, the sudden switch for employees to the agile way of working, actually resulted in them reverting back to "what they know and are comfortable with". This is in alignment with recommendations by other practitioners and researchers (Pries-Heje & Krohn, 2017; VersionOne, 2018; Gandomani & Nafchi, 2016; Chow, & Cao, 2008; Gregory et al, 2015), that

stress the importance of focussing on the implementation of the agile mindset. The case suggest that providing freedom and autonomy too early and abruptly in an agile transformation might work counterproductive in achieving the right agile mindset and behavior.

In review, all of the challenges identified within ABN AMRO were reflected to a certain extend in existing literature. Some of the deviations have been discussed in the sections above. The existing literature focuses at large scale agile transformations that use established large scale agile frameworks (like LeSS, SAFe, DaD) and cases generally come from the IT industry. In this perspective, this case study adds to the existing body of literature on challenges within a large scale agile transformation and extends it into both the area of tailored agile models as well as the financial industry. As ABN AMRO is facing they issues they're taking a very incremental and iterative approach to it, much like agile. They did however created the basics for their tailored large scale agile framework up front. They instantiated a department that supports the entire transformation and helps tailor the agile processes from team level all the way up to an organisational level with the base tailored large scale agile framework as a starting point. An important finding is that teams have autonomy to alter these processes based on what works and what doesn't for them. Since the start of the transformation many things have changed to the initial model and go to show how valuable feedback is. The organisation even uses the tailored solutions that teams create as a base for inspiration and best practices. This incremental approach to the transformation is widely applied in experience reports and case studies (Dikert et al., 2016; Gandomani & Nafchi, 2016; Conforto et al., 2014; Goodman & Elbaz, 2008; Rigby et al., 2016) and this case shows that this approach works well especially for tailoring agile frameworks to existing environments. One drawback however is, that as teams start to tailor to their liking, wrong interpretations and faulty adjustments to the approach might happen as some teams might not have the maturity to alter these processes correctly or misalignment and inconsistency on a higher level might be a consequence as some teams could work in different cadence or user story format than other teams. In literature there is no consensus what is best; either a single approach for all a (supported by Fry & Greene, 2007; VersionOne, 2018) or a tailored solution to the teams (supported by Chen et al., 2016; Dikert et al., 2016). The hypothesis is that giving teams the freedom to alter the agile approach has led to less change resistance and has helped embrace the continuous improvement mindset. Literature does report plenty on the problem of change resistance especially when a specific way of working is forced upon the teams, which interestingly was not perceived to be a challenge in the ABN AMRO transformation (Dikert et al., 2016; VersionOne, 2016; Gandomani & Nafchi, 2016; Chow, & Cao, 2008; Worley & Lawler, 2010; Paasivaara et al., 2018; Gregory et al, 2015; Korhonen, 2013). Further research should be conducted on the effects of team level agile tailoring in a large scale agile approach in order to better comprehend what the drawbacks would be. However for now companies that want to tailor a large scale agile model could draw inspiration from this in determining their approach to the transformation.

2.5.2.   Limitations of findings

The previously discussed findings are subject to limitations. The applicability of an explorative singe-case study design to a larger context is a mentioned by many to be one of its fallacies (Yin, 2009). In order to improve the validity and applicability of this case study to other industries, different measures were used. The validity of these results will be discussed on the basis of three facets generally used to assess validity of a case study; Construct validity, External Validity, and Reliability (Yin, 2009)

Construct validity

With regards to the selection of papers for the SLR, this procedure was prone to researcher bias as only one researcher (being me) handled the selection and analysis of the papers. However using established ways for data selection in SLRs was an attempt to minimize this effect. In order to further improve validity, other SLRs on agile software development were used, which were performed by a larger set of researchers as cross reference material to check on source selection.

Different sources were used to improve the reliability of the results. Purposive sampling was used for the semi-structured interviews, however the selection of the participants is sensitive for bias as they all operated from the same transformation department. In order to eliminate this bias and improve construct validity, documents produced by different departments and observations from actual agile arenas were analysed.

The observations of the meetings are also sensitive to bias as some grids and blocks vary tremendously in their agile maturity. Therefor generalisability of these findings within the company context is difficult. This limitation was attempted to be mitigated through the observation of a randomised set of grids and blocks.

The documentation for internal use was collected through their knowledge exchange and management webpage as well as through sourcing from directly from different employees involved in the transformation. A possible danger of these ways of collection are that some crucial documents might be missed within their database collection and/or are prone to quality inconsistency and influences from an individual's bias based on who made the documents. This validity threat is complex to mitigate, however through the consultation of the Data Quality departments and key informants and stakeholders in the transformation process, the most reliable sources were selected.

To further improve the validity a second validity measure was added by checking the challenges and success factors with employees from the agile organisation.(See Fig 2-32). Whilst this method is prone to confirmation bias, it is argued that the different data collection methods and the option to remove challenges from the list in the validation suffice as a way to create construct validity.

External Validity

Still one of a case-studies' fallacies, especially for single case exploratory setups is their generalisability. Through a Systematic Literature Review that included experience reports and empirical papers from a wide range of industries, an attempt was made to have some grounding of generalisability. Through a comparison of results from literature and the results from the case study and indicating where they differ, it is argued that the report provides clarity on which parts of the results are generalisable to a larger set of industries. An important note to this, is that the set of papers analysed largely focussed on IT-heavy industries such as software development, financial service, and telecommunications. The results are therefore argued only to be generalisable to the industries included in the systematic literature review. Although measures are presented to improve upon the generalisability, the main focus of this case-study was to provide in-depth exploratory data and insights on this revelatory situation.

Reliability

To my fullest knowledge, the procedural undertakings were described. Although all steps were recorded in the research design descriptions, some steps might be time-sensitive. The documents, structures and challenges have shown to be very time sensitive, as they've showed to change significantly during the time I have been present in the company. It is therefore argued that if this case study were to be

repeated, even if similar people were to be interviewed, and similar meetings would be observed results would probably deviate because of the time and change-sensitiveness of organisations.

The involvement in the companies' daily business does expose possible bias. However no other interest existed in working for the company and through the use of external people for reviewing an attempt was made to limit this bias.

Further Limitations

Firstly, due to the way ABN AMRO is organised, and the way they've distributed authority amongst grids and blocks, many variations exist within their entire landscape. Pepole were interviewed that were involved in this agile organisation on a very holistic level and has thus led to results very generalised and holistic that captures the agile organisation as a whole. These results might differ significantly if one for example decides to look at one grid in particular, which would still count as "large scale agile".

Secondly, the nature of the data and the way the challenges and success factors were validated have led to an indication of importance. These results weren't quantifiable as only a limited set of people were used to stack rank, as well as the prioritisation of these challenges and success factors had a relative character.

Third, the participant selection, observations and documents had a heavy "business" focus. Largely because much of ABN AMRO's IT operations is organised separately from the agile organisation. That part of the organisation wasn't included in this analysis and has thus led to a more organisational and business related focus of the results. This shortcoming is also related to the first limitation where it was stated that a very holistic stance was taken on the entire agile organisation, where naturally a more high over organisational view is taken. Next to that, as one of the most prominent challenges states, the IT landscape is extremely complex and to the best of my knowledge no one within ABN AMRO had full knowledge on all the IT related systems.

Lastly, this revelatory single-case study has provided all found contextual information in which the reported challenges and success factors occured. The aim of this research has never been to provide a generalisable model. Whilst some claims are made on generalisability based on comparison to existing literature, the findings have been reported in the very specific context of ABN AMRO.

Fig 2-32 "Two VPB members ranking challenges"
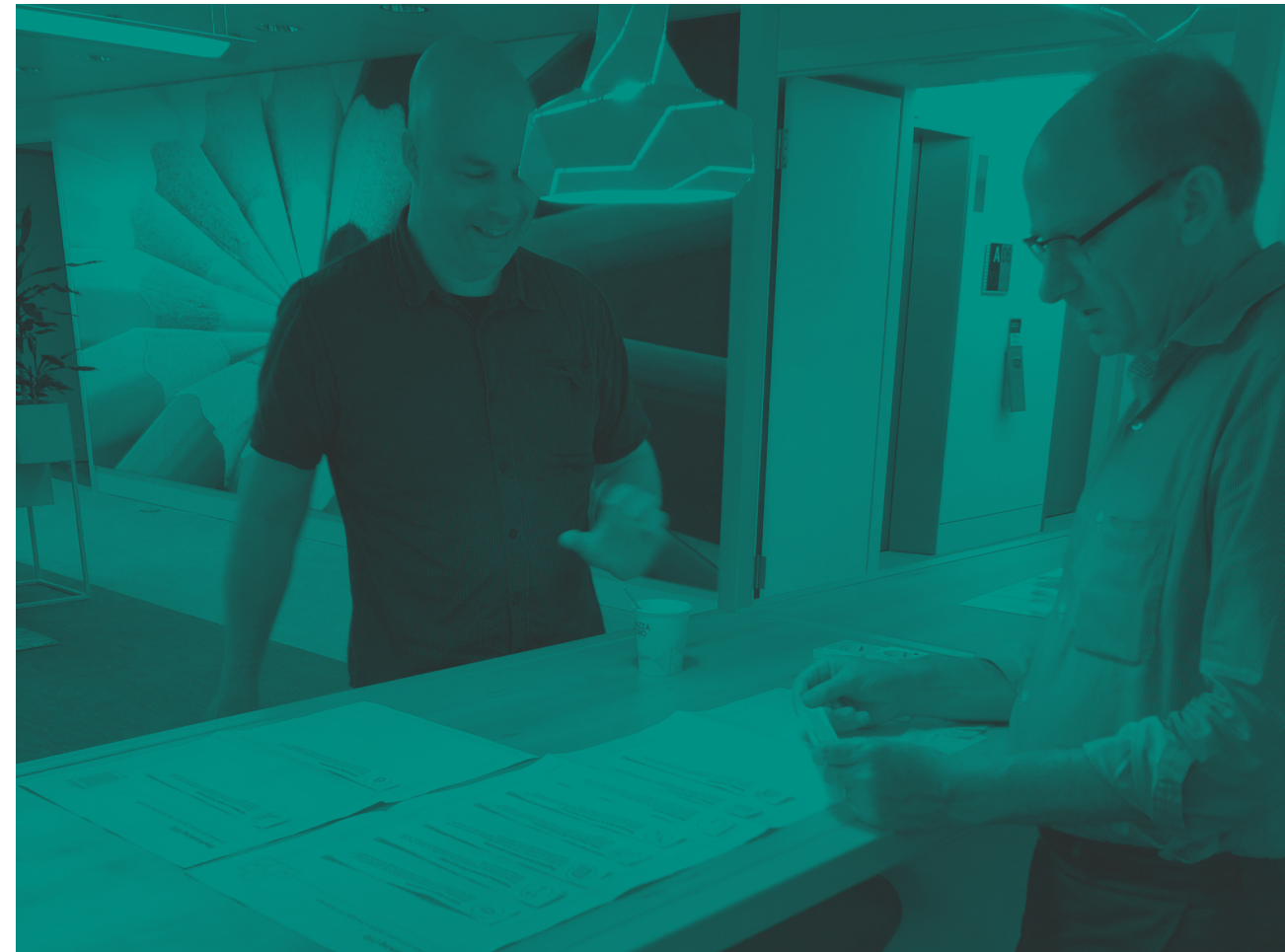
2.6   Conclusion

This chapter aimed to explain the challenges for tailoring a large scale agile framework in a large financial services firm. Through the use of a revelatory single-case study of ABN AMRO, a detailed description is given on how they tailored a large scale agile framework for over 6000 of their business and IT employees.

ABN AMRO calls their agile organisation the grid landscape, where teams work based on the Scrum Framework. Their organisation is largely based on the Spotify model, however they've added extra layers to it cope with the complexity of the organisation. A total of 17 challenges were identified, however the most prominent ones were: lack of clear vision and strategy, organisational siloing, linking strategy to execution, a complex IT landscape, and traditional mindset and behaviour. Whilst the findings in this study are heavily subject to the case context and generalising based on a single case study is ambitious, its goal was to add to the sparse literature on large scale tailored agile transformation, which it did. In addition, based on similarities with existing literature on large scale agile transformations the study extends and confirms knowledge of some of the challenges found in large scale agile experience reports and literature.

The importance of leadership and entrepreneurial skills within large scale agile landscapes shouldn't be underestimated, especially for roles like the PO that have a key role in establishing a vision and strategy for a product. Traditional managers generally don't possess these skills and subsequently behave in a traditional fashion which has a conservative effect on a traditional mindset throughout the entire agile organisation. The importance of breaking old behavioral patterns isn't limited to employees in key roles, gradual implementation of autonomy and freedom towards all employees who are used to traditional ways of working is recommended, as giving them freedom and autonomy too abruptly actually works counterproductive in embracing and developing an agile mindset and makes them resort to behavior which is known to them. Whilst changing behaviour of employees is challenging but feasible, in the financial services world, one can't escape from the highly regulatory

environment. Large amounts of work flow from regulatory work that's highly valued. Traditional risk-aversive behavior combined with the ability to rearrange priorities gives way for regulatory work to always be prioritised over more risky and innovative work which gets deferred the bottom of the backlog. Tailored solutions and processes are needed to assure a right balance in the type of work that's done.

This case is revelatory as ABN AMRO combined business and IT departments a single agile organisation. Whilst this improved their respective collaboration and helped in defining requirements, keeping separate business lines for IT and business led to confusion because of conflicting visions and strategies. Collaboration with other parts of the company which are not included in the agile organisation seemed more problematic. When tailoring a large scale agile framework it can't be viewed in isolation and rigorous attention should be paid to specifying the interfaces with other parts of the organisations as dependencies on these "traditional"-processes will influence the overall effectiveness in the landscape.

Besided Interfaces and interactions with stakeholders outside of the agile landscape, the ones within were found to be essential as well. A product oriented organisation combined with autonomous agile teams that are organised around components and systems leads to many dependencies, stakeholders. Companies with a complex IT landscape need to account for the limiting factor it imposes on both the way the agile organisation is tailored as well as the processes and artefacts needed for coordination and dependency management which are inevitable in such cases. Moreover, team autonomy, self organisation, and the product orientation results in a narrow focus on the respective product. Without adequate solutions to support cross team collaboration teams are more inclined become an organisational silo. Whilst agile methods and principles work with the right conditions in place, they may work destructively when those aren't in place if we look at how "autonomy" and "self-organisation" in the wrong conditions creates silos for example.

The similarities in challenges between existing research on large scale agile implementations covering

industries other than financial services and the ones found in this chapter show that any large scale agile implementation, whether tailored or not faces a multitude of common challenges ranging from people related all the way up to company wide challenges. As more and more organisations will engage with large scale agile transformations and subsequently try to tailor it, they'll inevitably face both new and known challenges and solving them will subsequently result in new challenges elsewhere. Where for example in ABN AMRO's case a teams autonomy to tailor the agile methods led to clear benefits, certain drawbacks appeared as well. They took an iterative and incremental approach to the transformation and they're getting closer to an agile organisation step by step. The real challenge for tailoring large scale agile frameworks may very well not be solving individual transformation problems or finding a "perfect" framework for becoming "agile", however sustaining this process of updating and tailoring and agile framework that fits the need of your organisation's current context allows for it to be changed along with the firm's environment.

2.6.1   Implications

Large firms with a complex hierarchical layout willing to tailor and implement a large scale agile framework should consider adding extra organisational layers (e.g. hierarchies) as it will help to connect the agile organisation to the surrounding traditional organsation. However, the selection of people in these key "management" roles are crucial and if a company aspires to relocate traditional middle managers to these positions, a strong selection should be done based on their entrepreneurial and leadership skills, as traditional management behavior negatively influences the adoption of agile.

When tailoring a large scale agile framework, companies should pay sufficient attention the entire firm into which it will be placed, possibly taking into account all the key interactions and interfaces with the existing company departments and tailor these interactions so that they fit the flow of the large scale agile model.

Results from the research show that combining business and IT organisations into one single agile organisation is beneficial for their mutual involvement, collaboration and requirements engineering. Any company aspiring to implement agile at larger scale should consider expanding their scope beyond IT solely, however it should also consider possible drawbacks for these integration.

Any company with a complex IT architecture that aspires to implement agile using autonomous teams will face dependencies inevitably. Therefor it's recommended to define up front processes and specific roles that facilitate the coordination thereof. Furthermore processes and incentives for cross team collaboration could avoid that teams solely focus on their responsibilities and thus become silos.

As stated earlier, a large financial services firm that aspires to become agile should put in place processes that balances the type of work on top of the backlog, in order to avoid skewness towards mainly regulative work.

An incremental and iterative approach towards the tailoring of the large scale agile model is advised. Companies are advised to form a base large scale agile model, and further improve/tailor based on the challenges it faces after the first implementation step.

In light of where agile came from (See fig 2-33), it's

good to understand that it was designed for small scale software development teams. This study confirms previous findings that agile doesn't necessarily work on a larger scale, much effort and "agile" concessions need to made when scaled to a larger extend. It's argued that large scale agile frameworks don't necessarily lead to firm wide-agility what companies are generally after in the first place.

2.6.2   Further Research

At the outset, more empirical research or case studies on financial services firms or firms in highly regulated environments who have implemented or tailored a large scale agile framework is needed. This study, to the best of my knowledge, is the only case study on a large scale tailored agile implementation at such scale in the financial service industry.

More research should be done into what organisational structures or types better support agility. The research has found that the product oriented structure of the organisation resulted in many dependencies and subsequently led to siloing. No other research has been identified that combines both organisational structures and their applicability of large scale agile and is thus a recommended direction for future research.Moreover, this case study describes an agile implementation that both included IT and business. No similar cases were found, so future research could be directed at analysing how to tailor large scale agile in other functional departments (marketing, HR) and how the inclusion of these other departments into a single agile organisation effects the overall large scale agile framework.

During the review of existing literature a clear distinction between large scale agile (software development literature) or and organisational agility (business literature). As large scale agile operating models increasingly get adopted beyond IT departments, where does large scale agile stop and when does it enter the territory of organisational agility? This question gets more relevant towards the future as many companies will eventually become pure IT and software development companies.

In addition to that, instead of deepening the knowledge on large scale agile frameworks from a software development perspective, a recommendation is made to open up lanes to other areas of literature such as change management and organisational design, business management as large scale agile frameworks expands into new departments within organisations.

2.6.2 – Implications for further solution

The solution will focus on the teams that focus on creation of new value propositions (e.g. product / service or features of them), as they play a pivotal role in the grid landscape. These teams within ABN AMRO are better known as value proposition teams. More specifically it will focus mainly on those team members within the VPB that have no experience with innovation however are either eager to learn (Tessa), or need a lot of guidance in unknown areas (els).

Existing meetings and processes within the agile grid landscape need to be taken into account, such as the grid sync in which priorities for a grid are determined. Or the concept of sprints as well.The way of working and context of the teams can't be neglected, think of their co-located nature and the way communication happens within ABN AMRO.

Fig 2-33 "Where it all started: a picture of the meeting in which the agile manifesto was born"

III Innovation management

3.1 Introduction

Try to remember the last time you paid for something with cash money. What it today? Last week maybe? Or maybe even months back? It's undeniable that digitalisation and digitisation have seriously impacted the way we interact with our money. If we rewind to the year 3000 BC, in Babylon (current day Iraq), a different picture is painted. Valuable items like grain, cattle, and eventually gold were stored in sacred temples and safekeepers of these temples issued loans using these valuable items in the temple; banking was born. Now if we go back to the present day, a radical change in the shape and form of our money has happened, however the concept of a "bank" itself hasn't changed much; a central place to store and retrieve money.

Innovation is something the financial services industry hasn't been concerned with historically and where it did, it was mainly seen as incremental (Berry et al., 2016). Some even claim that the only "good" innovation that came from the industry itself was the "Automated Teller Machine", better known as the ATM (Atkins, 2013) (Fig. 3-1). Up until now banks have been able to build on the stable concept of a bank that was born in 3000 BC, however recent developments in the market are attacking these foundations. Other industries such as travel, hospitality and TV have already been disrupted by new entrants in the market that made clever use of new market and technological developments. Some famous examples are Uber, AirBnB, and Netflix. Whilst traditional incumbent financial service providers have already significantly improved their services through digitisation and digitalisation, they're still faced with significant pressure from new entrants (Das et al, 2017). Adyen, a digital payment platform, is an example of a publicly traded company that's already taking away some of a traditional banks' business. Newer entrants like Transferwise, who process international payments at a significantly lower cost than banks do, are taking the market by storm and their 1.6$ billion valuation exemplifies that (O'hear, 2017). Traditional banks acknowledge the need to innovate, however are faced with many challenges both internal and external that hinder them in the successful management of innovation (Das et al., 2017). External factors are widely researched (e.g. technological developments, market regulations etc.) and can't be influenced by the firm itself, therefore in alignment with the goal of this research this chapter will focus on internal factors (e.g. barriers that come from within the company).

Fig 3-1 "Opening of the world's first ATM"

Existing innovation management literature has documented many challenges for innovation in established companies, however largely focuses on product firms and the manufacturing industry (Das et al, 2017; Vermeulen, 2005). In the study by Das et al. (2017) the focuses on barriers for innovation within large financial services firms, however specifically on radical and disruptive innovation and does not cover challenges for incremental innovation. Vermeulen (2005), does cover challenges for innovation within financial services firms, but does so for small and medium enterprises. Moreover in that study Vermeulen does not focus on innovation. Whilst in general a lack of research on challenges for innovation management within the financial services industry is present, no research includes both incremental and radical innovation management practices. Both radical and incremental innovation have shown to positively influence a firm's performance and many state that both are needed to ensure short-term survival and long-term adaptability (Andriopoulos & Lewis, 2010; Tushman, 1997; Wang & Rafiq, 2014). In this light this chapter will extend on the innovation management literature by examining a large financial services firm's innovation management efforts as a whole (so both incremental and radical innovation included). It attempt to do so by answering the question;

What are the challenges for managing innovation within a large financial services firm?

Besides adding to literature, this chapter's main aim is to understand ABN AMRO's innovation management processes and structures. As only recently ABN AMRO added "Innovation & growth" to their strategic priorities, it's important to understand how their current innovation management practices help them to achieve that. In the previous chapter we looked at their tailored large scale agile framework and found that when tailoring such a landscape it's crucial to understand its interfaces with the rest of the organisation. This chapter seeks to understand how ABN AMRO organised innovation as whole in order to understand the interfaces and overlaps with this agile landscape. This chapter also serves as a stepping stone towards the overall goal of this thesis; understanding what the challenges are for innovation management in their large scale agile landscape.

Expensive rejection

When Alexander Graham Bell invented the telephone, he offered to sell the patents to Western Union for $100.000, who at that time were the biggest communications company due to the invention of the telegraph. Western Union turned down this offer, however soon realised this was a mistake on their behalf. Bell went on to develop and sell his invention, and eventually he basically owned the entire U.S. telephone market. Companies like Verizon and AT&T have their roots in Bell's company and still conquer the American market to this day.

3.2 Context

3.2.1 What is Innovation?

The roots of the concept of innovation go back to ancient Greek language (kainotomia), and was generally politically loaded. In general innovation was seen as something negative, as something that "introduced change into the established order" and hence little ancient writers used it in their works (Godin, 2015). Innovation was seen as the "war cry of the fools", as described by Jean d'Alembert (1786) and even as a "damned word". Over the years, the negative connotation of the word slowly reversed into a positive one, with poets and writers more commonly expressing the good that came out of "innovation", such as freedom of speech. After World War II, its focus shifted from political to a more economic and technological focus, where the true positivism about the "innovation" became commonplace. It's around that same period that Joseph Schumpeter puth forth his famous quote; "Anyone seeking profits, must innovate" in his theory of the entrepreneur (Schumpeter, 1939). During this century however, innovation has gained its value as a buzzword, mystically seeping into nearly every sentence, as an adjective to any solution, idea or strategy.

There are a multitude of definitions of "innovation" (Baregheh et al., 2009). Innovation is defined in the Cambridge dictionary (in a business context) as: the development of new products, designs, or ideas. Whilst this does give a general indication of what is meant by the concept, a more refined definition is posited by Baregheh et al, (2009) who performed an extensive content analysis of over 70 definitions of "innovation". Their definition will be used throughout this report and goes:

"Innovation is the multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace."

(Baragheh et al., 2009)

Innovation is imperative for any company. The reasons for companies to innovate haven't changed much since the 1980s; increasing market competition both domestic as well as international, changing government regulations, and rapid shifts in market conditions (Amabile, 1988) all drive the need for innovation. Innovation and its according strategies are generally seen as a means to gain a competitive advantage. Some studies have posited an innovation strategy to be a key determinant of a firm's financial performance (Zahra & Das, 1993), and thus can be seen as a critical factor for a firm's success and survival.

3.2.2 Innovation Types

Christensen (1997) posits that due to the complex and multidimensional nature of innovation, many companies have neglected important innovations and have lost their competitive position due to their inability to sustain innovation. A phenomenon better known as the "innovator's dilemma", for which both psychological and economical reasons exist. As people and companies age, they have more to lose and have little motivation to endanger that what has cost them years to build (Berkun, 2009). Companies have to both focus on protecting what they've already built and on exploring for new opportunities. A common classification that aligns with these "protective" and "explorative" activities, are the incremental and radical variants of innovation (Tao et al., 2010), and stem from a technological novelty standpoint (See Table 3-2).

Both of these innovation types need different organisational capabilities and potentially even different management processes, however both are crucial for the survival of a firm (Andriopoulos & Lewis, 2010; Tushman, 1997; Wang & Rafiqm, 2014). It's generally the more radical and disruptive innovations that get referred to when examples are given of firms that overlooked innovations. Another well known dichotomy is are sustaining and disruptive innovations first described by Bower & Christensen (1995) and are focused on market orientation

Type		Description	Examples
Incremental		"reinforces the capabilities of established organisations", and focuses on improving what a company is already doing through small improvements, adjustments or additions (Tao et al, 2010; Norman & Verganti, 2014; Das et al, 2017).	*Improving the speed of a computer processor, by adding transistors* *A bank reducing international payment transfer handling from 5 to 3 days.*
Radical		Radical innovations incorporate new technologies, focuses on things that a company doesn't do yet and provides more benefits to customers than what was previously available. These types of innovations generally requests new technical, commercial and problem solving capabilities of the organisation and (Tao et al., 2010; Norman & Verganti, 2014; Das et al., 2017).	*Quantum computing for exponentially more computing power* *The blockchain which let's you instantly make transfers without middlemen.*
Sustaining		Sustaining innovation is aimed at improving products and services for existing customers of established companies. These innovations do not affect other markets and focus solely on new product/service releases in the existing firm's market (Christensen et al, 2015; Das et al., 2017).	*Adding a new flavour to a product line, like coca cola cherry or vanilla* *Releasing an updated version car each year.*
Disruptive		Disruptive innovation generally focuses on low-end, and emerging markets and provide value to that segment. "It creates a new market by applying a different set of values for users [in those markets], which ultimately (and unexpectedly) overtakes an existing market" (Das et al., 2017; p.4)	*Cloud computing redefined the datastorage and processing industry.* *The Ford Model T, was the first car that disrupted the horse industry due to its affordability to the public*

Table 3-2 "Innovation types"

These dichotomies are used in conjunction by some researchers, however they stem from different backgrounds even though they have much overlap. Either way, the challenge exist for companies to balance both these long term and short term innovation efforts. This challenge is better explained through the concept of organisational ambidexterity, which is defined as; "organisational structures that help to simultaneously deal with contradictory elements" (Martini et al., 2013). This is described in anthropology as the example of an individual's power to use both his left and right hand. A very clear representation of the types of innovations is presented by Terwiesch and Ulrich (2009), that sets out market novelty against technological novelty, and subsequently indicates three types of innovations for a firms' growth; core, adjacent, transformational (see fig. 3-3). This framework has a lot of overlap with the "Three Horizons of Growth"-framework, first introduced by Merhdad Baghai, Stephen Coley, and David White in 1996 (see Fig 3-4). The examples on the side are in the context of the Walt Disney company. The three horizons framework will be used as guidelines throughout this report for indication innovations.

- **Core** - Optimising exising products for existing customers
- **Adjacent** - Expanding from existing business into "new to the company"-business
- **Transformational** - Developing breakthroughs and inventing things for markets that don't yet exist.

Fig 3-3 "Innovation typology"

Focuses on creating options for future businesses, and aligns with the "transformational".

Disney started with early experimentation of TV shows and experimented with broadcasting

Represents the building momentum for emerging new business, and aligns with the "adjacent"

Accelerating growth of resorts and vacations through opening new and improved resorts

is about defending and extending the current core, and aligns with "Core"

Boosting theme park revenue through building new rides and increasing ticket prices.

Fig 3-4 "3 Horizons of growth"

The concepts of incremental and radical innovation are many times connected to the concepts of exploitation and exploration respectively (Wang & Rafiq, 2014; Andriopoulos & Lewis, 2010). They were first introduced by March (1991) in the context of organisational learning and defined them as; 'exploration includes things captured by terms such as search, variation, risk taking, experimentation, flexibility, discovery, and innovation. Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, and execution' (March, 1991, p. 71) (See Fig 3-5). However, its argued that the dichotomy of exploration and exploitation indicate activities that take place which can be determined up front and are therefore related to innovation processes. Whereas "incremental" and "radical" generally say something about an innovation outcome and are generally used in hindsight for indication (Li et al., 2008). Many times exploration is associated with more radical/disruptive forms of innovation. Whilst they do largely rely on explorative activities, it's argued that once a direction is found within this type of innovation more exploitative activities are needed for implementation and execution. If we take the Example of Disney's choice to move into TV broadcasting, once they saw the merits, they had to make choices on what they were going to air and how they would implement this in the existing organisation (thus exploitative). This means that even for incremental innovation, explorative activities are needed. Still this the balance between exploitative and explorative innovation might differ per type/horizon of innovation. Where Horizon 1 will rely more on exploitative and less on explorative, and vice versa for Horizon 2 and 3.

Exploration
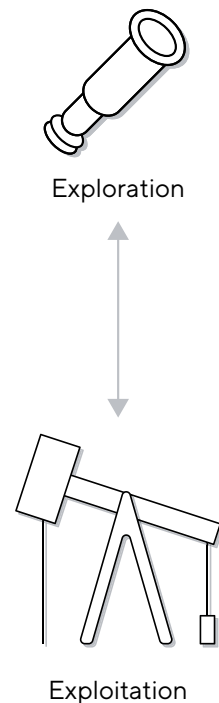
Exploitation

Fig 3-5 "Exploitation vs Exploration"

Much like Captain Cook, you need to explore in order to find new places, and you won't do that by staying where you are.

3.2.3 Innovation Management & Processes

Early reports on innovation management show the need for an understanding on how to manage innovation. Van de Ven (1986), reports that in the already in the 1980's CEO's placed the management of innovation as their critical concern for successful management of their enterprises. This demand hasn't decreased ever since the 1980's. Markets and industries haven't slowed down, and innovation is needed to keep up with these changing environment. It's only natural for companies to search for ways to structurally embed innovation into their DNA.

For this thesis innovation management practices are defined as what companies habitually do to manage the process of carrying out an innovation (Oke, 2002). Multiple frameworks have been established over the years to define and measure innovation or

the management of it. A popular one is the Mckinsey 7-S model (used earlier in this report), with a strategic view on innovation management practices. Another popular framework used multiple times to investigate innovation management practices is the Pentathlon framework (Oke, 2007) (See Fig 3-6).

The three stages in the middle of the Pentathlon framework have a lot of overlap with research from Damanpour & Schneider (2006) who investigated the innovation adoption process and posited three stages: initiation, adoption (decision), and implementation. The previously mentioned exploration skills are argued to be focussed on the first part of this process, whereas exploitative skills are more suited to the implementation phase (see fig. 3-6). Very much in line with the pentathlon framework, Goffin and Pfeiffer (1999) propose that for successful innovation management a firm needs to achieve high performance in the following 5 areas; innovation strategy, creativity and ideas management, selection and portfolio management, implementation management and human resource management.
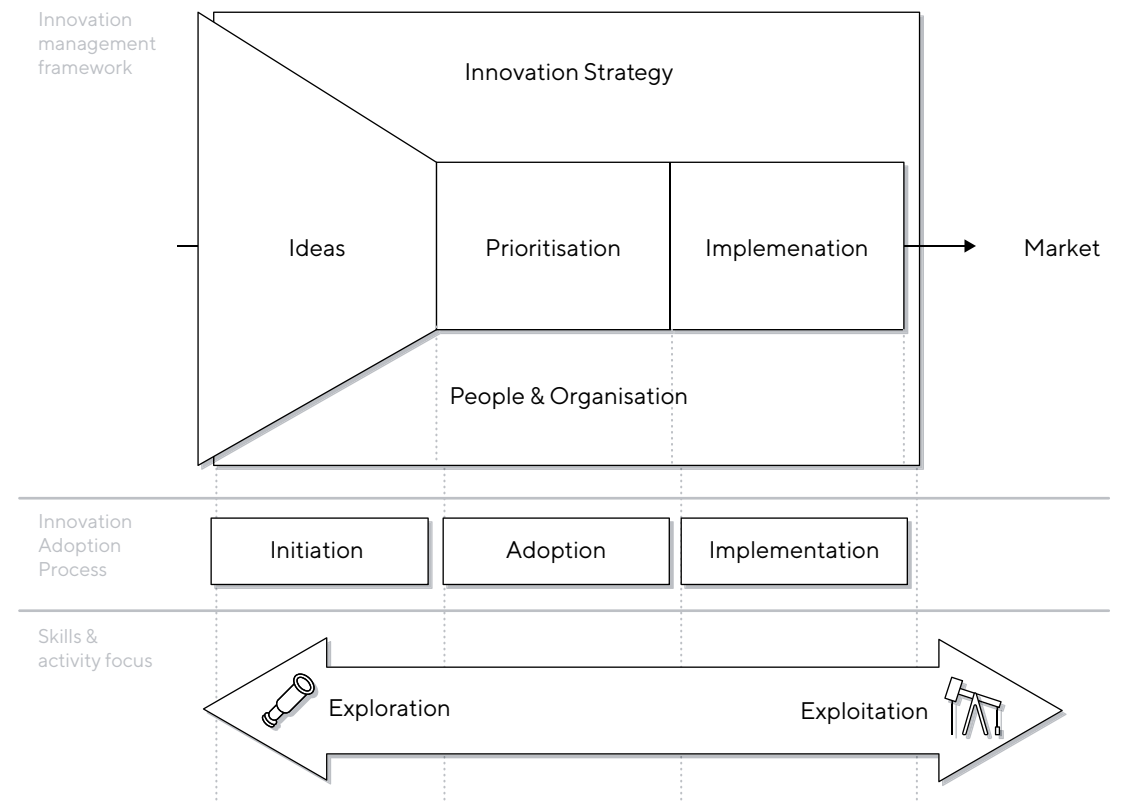
Fig 3-5 "Innovation management frameworks"

Generally a big focus for managing innovation lies with the process. The innovation process has been found to be the common differentiator for innovative companies. Throughout the years innovation processes have evolved in six stages from simple linear models such as stage gate, towards complex models such as open innovation networks. Du Preez & Louw (2008), present these six stages as depicted in table 3-6

Table 3-6 "Innovation management Processes"
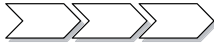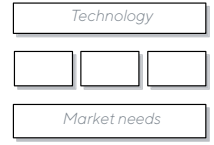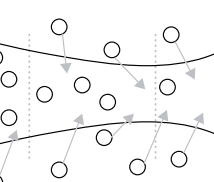
Name	Example visual		Generation	Characteristic
Technology Push	Technology	Market	First	*Simple, Linear, sequential, R&D*
Market Pull	Market	Market	Second	*Simple, Linear, sequential, Marketing, Market as source for ideas*
Coupling Model	Idea	Product	Third	*Interaction between innovation elements, and feedback loops between them. Integrating R&D and marketing*
Interactive Model	Idea	Product	Fourth	*Push & Pull combined, parallel activities, integration within firm, interaction between functional departments*
Network Model	Input	Output	Fifth	*Knowledge accumulation and external linkages, integration of differen systems and organisational elements.*
Open Innovation	Input	Output	Sixth	*Internal & external ideas. Internal & external paths to market.Collaboration, Partnerships and networking.*

Table 3-7 "Creative Factory Systems Innovation model"

One of the more comprehensive models which finds much overlap with the earlier mentioned Pentathlon framework is the "Creative Factory Systems Innovation Model" created by Galanakis (2006), which draws on the concept of systems thinking (Fig 3-7). This model also has a lot of overlap with the findings from the previous chapter and since the results from both studies will be combined at a later stage, a decision is use this as a base reference framework. However using the knowledge gained from the pentathlon framework and the innovation adoption process a simplified model is proposed that will help guide the discussion on where the issues arise within ABN AMRO (See Fig. 3-8).
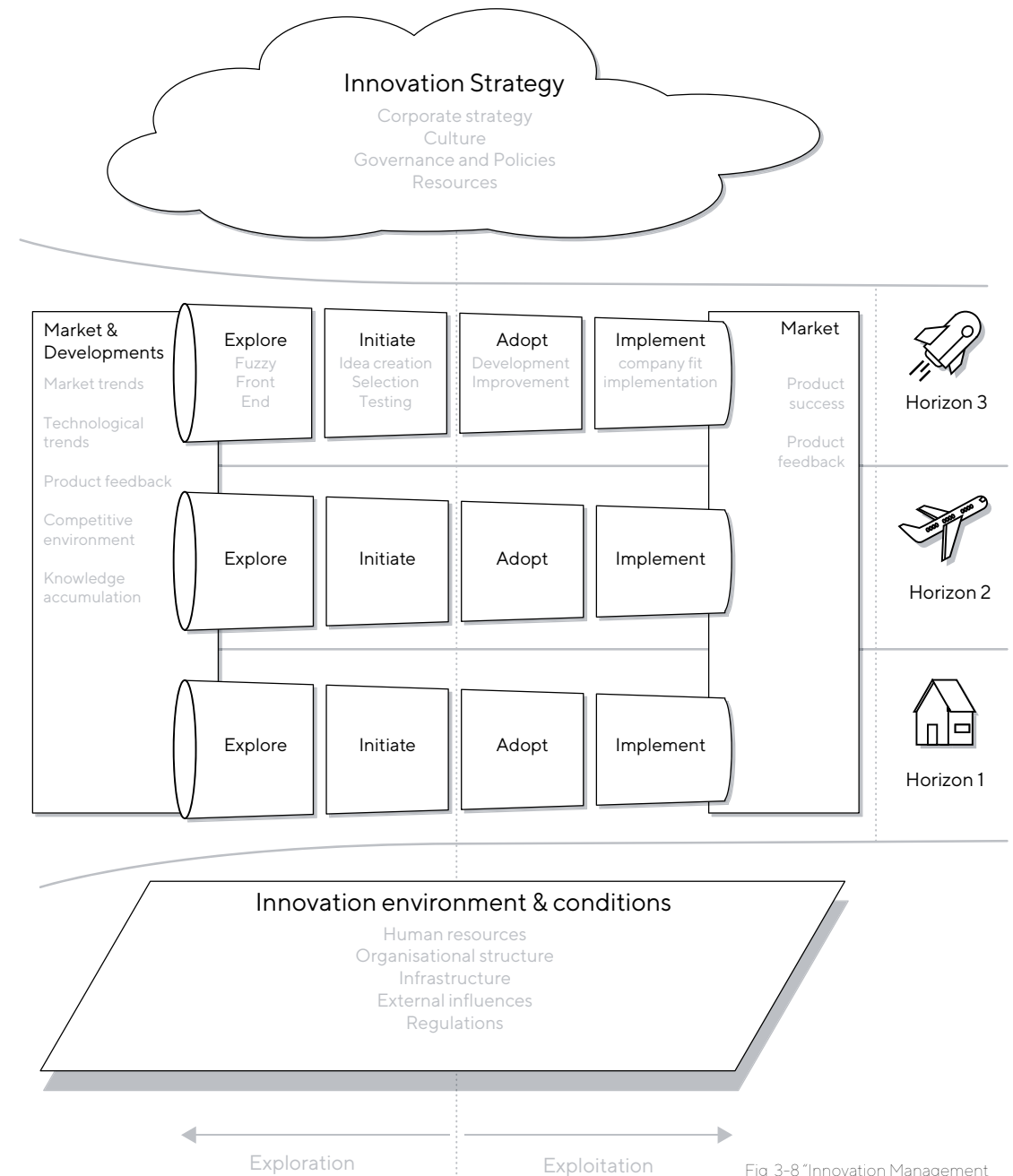
Fig 3-8 "Innovation Management SimplifiedFrameworkl"

3.2.4 Barriers to innovation management

Barriers and enablers for innovation within firms, have been documented by many scholars, each with varying scopes and focae. Van de Ven (1986) identifies four barriers for innovation management within a company. Firstly he states, there's the "human problem of managing attention", as he states that firms are designed and aimed at protecting their existing business rather than developing new ones. Secondly, he reports a process problem of "managing ideas into good currency", making sure new ideas are actually integrated and actualised within the company. Third, there is the "structural problem of managing part-whole relationships", which stems from the interdependencies, interactions and input that proliferate as an innovation develops. Lastly, van de Ven (1986) reports on the "strategic problem of institutional leadership", which is about creating an "infrastructure that is conductive to innovation". In his later work he also states that innovation does not 'unfold in a simple linear sequence of stages and substages. Instead, it unfolds into complex bundles of innovation ideas and divergent paths of activities by different organizational units' (van de Ven, 1995, p. 275).

In an extensive literature review of 103 articles by Sandberg & Aarikka-Stenroos (2014), identifies seven challenges for large firms (in B-to-B & B-to-C market) when it comes to radical innovation, grouped into external and internal barriers. Internal barriers were related to an unsupportive organisational structure, lack of discovery competences, an a restrictive mindset. The external barriers were related to an undeveloped network and ecosystem, customer resistance, technological turbulence and an unsupportive government.

Only two studies were found however that focussed on innovation management within the financial services industry. Moreover, as earlier mentioned literature on innovation management is dominated by studies on the manufacturing industryIn an empirical study on innovation management within Financial Services Firms by Vermeulen (2004), he posits four barriers; functionally departmentalized structures, limited use of new product development tools, conservative organisational culture and constraining information technology. Another empirical study Das et al. (2017) that focus on barriers for radical and disruptive innovation report similar problems, however describe six challenges as follows; "A lack of exploiting new ideas," "inertia caused by (local) systems architecture," "an unsupportive organizational structure," "too much focus on risk avoidance," "absence of fundamental research and development," and "the not-invented-here-syndrome."

In addition to uncovering and understanding the innovation management approach of ABN AMRO, this study has a secondary aim to expand or strengthen the existing literature in this field.

3.2.5 Large scale agile, enterprise agility and innovation management?

In this thesis multiple concepts about agility and innovation have been introduced. They all relate to each other but are definitely not the same. An interesting observation that I share with other researchers and practitioners is that, increasingly firms employ large scale agile transformations and frameworks as a way to become more agile and innovative. This section looks at the differences between enterprise agility and large scale agile, and the relationship between large scale agile and innovation management.

Enterprise agility as defined by Overby et al., (2006), the ability of firms to sense environmental change and respond readily, and is perceived as something different than large scale agile (Dingsoyr et al, 2016). Enterprise Agility is seen a concept that goes wider than software agility, or large scale agile frameworks and is often combined with ideas from the Lean movement (van Haaster, 2016). Whilst scaling up agile software development practices and frameworks in a company adds to the overall organisational agility, it's only perceived to be part of the overall company agility (Kettunen & Laanti, 2008). Most of these scaling frameworks have no prescriptions for reward incentives in an agile environment, engaging in partnerships or handling of outsourcing. A study by Sherehiy et al. (2007), into the concepts and attributes of enterprise agility show that in their framework attributes of large scale agile frameworks cover only a subset of all the attributes that constitute an agile enterprise. Therefore it is argued that for companies to be truly agile, simply implementing and tailoring a large scale agile framework to a large part of

the organisation will not be sufficient. As Everett (2016) states, "an organization can be agile, without doing Agile", stating that in order to change and respond readily to market changes a company might use approach this differently than the agile manifesto and its offspring.

In recent reports agile has been directly linked and even merged with the concept of innovation. Take for example a recent report by Bain & company on "Agile Innovation" (Darrell et al., 2016), or even the article by Rigby, Sutherland & Takeuchi (2016) on "The secret history of Agile Innovation". Whilst they may partly be right in linking innovation to the concept of "agile", agile methods are largely known to lead to incremental innovation due to its iterative and incremental nature (Rigby, Sutherland & Noble, 2018; Norman & Verganti, 2014). Multiple researchers stress that solely focussing on incremental innovation isn't satisfactory for a companies' survival (Baghai et al., 1999; Norman & Verganti, 2014). Baghai et al. (1999), state that it's no option for a company to ignore any of the three horizons in their innovation efforts. Oke (2007), further stresses the importance radical innovations by stating that innovations with high technical or market newness result in major competitive advantages. Solely employing agile software development methodologies creates the danger of focussing too heavily on incremental innovation.

Next to that, the management of innovation and innovation processes are found to go beyond agile software development methods (Kettunen, 2009). An example of this would be the typology of innovation processes by Koen et al. (2002), who divides it into: the front-end of innovation, new product development (NPD), and commercialisation phases. This aligns with the Pentathlon model for innovation management earlier, where product development is only seen as a part of the entire model. Agile Software Development methods encompassing scaled variants do not include (enough) these former mentioned stages. An example of this would be in SAFe where innovation (exploration/front-end of innovation) is shrunk down into one week in-between program increments and happens simultaneously with the planning of a new increment. Furr & Dyer (2014) posit a framework that aligns with these previous statements and say that in an innovation process,

multiple frameworks and methodologies should be used based on where you are in the process. Their model includes amongst others methods like "Design Thinking" and "Lean Startup" (See Fig. 3-9). It should be noted that this model focusses on "start-ups". The hypothesis is stated here is that agile software development methodologies mainly focus on the product and software development stages of entire innovation processes and include too little the initial phases of innovation. Whilst previously mentioned source do mention this, they're mainly articles that stem from practitioners and no real empirical research confirms my hypothesis directly and where it does, no clear examples or data is presented to support these claims. Therefor, proving or disproving the above mentioned hypothesis is an additional side quest in this thesis, which will be discussed in the end as well.

Evenmore, companies who aspire to be innovative and nimble/agile won't suffice with a simple replacement of their existing methods and tools with agile or innovative processes. Multiple sources stress the importance of creating the right behavioural and cultural context for both agile and innovative practices, before it can be successful in being nimble and innovative (Amabile, 1988; Vermeulen, 2004; Nerur et al., 2005.) Whilst the company culture has been reported to be a crucial factor in the implementation of innovative or agile processes, too often this change is initiated through an implementationIn of a new process, methodology, or new way of working. As Nas (6th June 2018) stated in an expert interview, firms tend to implement Scrum, rather than implementing Agile. Thereby indicating that the focus is too much on the tools, frameworks and methodologies rather than than the implementation of entirely new cultural values and principles, of which the Agile Manifesto actually consists.

In review, innovation management goes beyond large scale agile frameworks and both constitute to a more nimble and agile organisation. Whilst there is some babylonian confusion on what "agile" actually means and how it relates to "innovation", this section attempted to clarify the differences between the three concepts of enterprise agility, innovation management, and large scale agile.
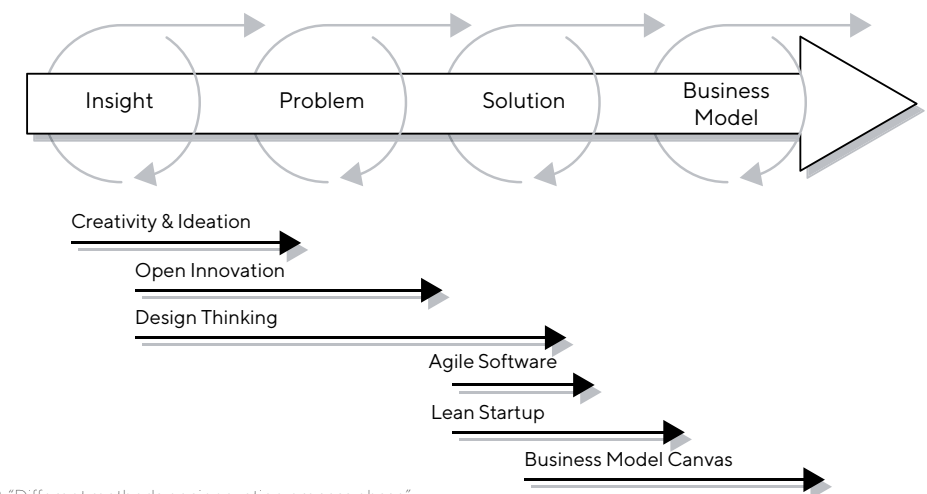

Fig 3.9 "Different methods per innovation process phase"

3.3 Research Design

The goal of this research is to understand ABN AMRO's innovation management efforts and what the challenges in those efforts. Similar as in the 2nd chapter, the research is split up into two sub research questions;

1. *How innovation management currently is organised within ABN AMRO?*
2. *What are the challenges for innovation management within ABN AMRO?*

During th research both challenges and successfactors for managing innovation were captured for ABN AMRO. The successfactors were used as input for further ideation, however are left out of the main thesis for clarity reasons. All success factors that were found during the research are located in Appendix O.
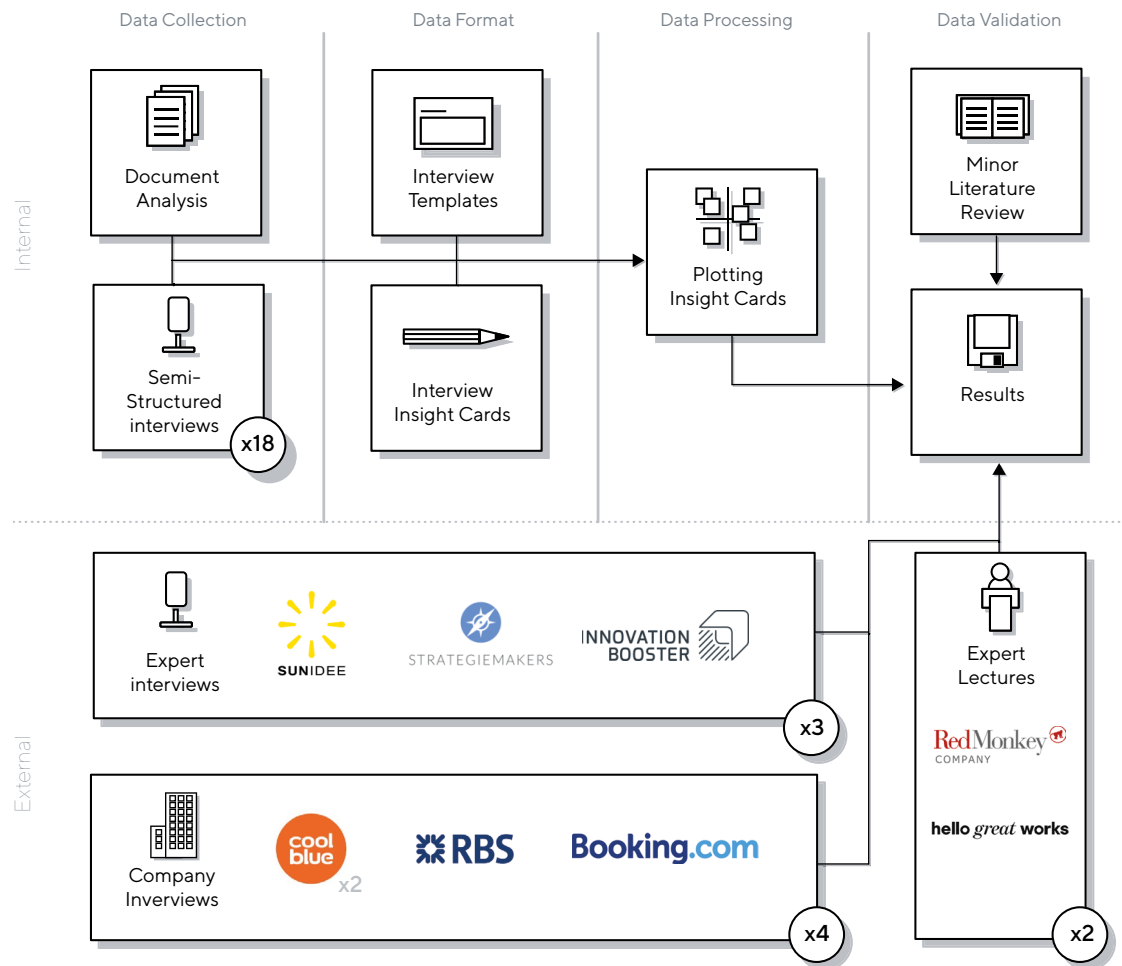
Fig 3.10 "Research Setup II"

3.3.1 Data Collection

Similar to the case study explained in Discover I. A combination of documents, meeting observations and interviews were used as input for the case study. The documents were analysed for relevant information regarding their innovation management processes

A total of 18 semi structured interviews were held, see Appendix K for interviewees. During these interviews paper templates helped the participant in visualising and answering their questions. These templates are helpful in visualising and capturing complex situations, and are part of generative research (Sanders & Stappers, 2012). More will be explained about this way of researching in the next chapter. These interview templates were used as input for the final results can be found in Appendix L. External interviews were held to serve as validity check and will be used in the discussion of the findings. See figure 3-10 for the companies that were interviewed. The results of these interviews can be found in Appendix M.

3.3.2 Data Analysis & Processing

Through ABN AMRO's internal knowledge sharing tool Connections, multiple internal documents were scanned and selected. An extra measure to improve validity was added by checking with innovation stakeholders whether the documents used were valid. During multiple interviews, stakeholders mentioned different tools they used. These internal documents and tools were requested for further analysis where possible. Documents received directly from internal stakeholders, were deemed to be valid.

The templates used during the interviews were collected and served as input for multiple research questions. The answers on these templates helped for example in defining the established relationships and flows of ideas.

Partial transcripts and summarised insights served as the basis for data analysis (Appendix N). Quotes from the partial transcripts and the summarised insights were extracted and placed inside an excel sheet. These insights and quotes were summarised into a set of insight cards. Insights and quotes that illustrated identical points were merged into one insight card.

The insight cards were plotted onto a quadrant in collaboration with ABN AMRO's employees. The quadrants axes were as follows; individual vs. company wide, blocker vs. enabler. A specific instruction was given to remove insight cards in consensus with other participants, which were deemed not valid. An instruction was given to place these insight cards on the quadrant to get a first overview of clusters. After this first round the participant collaboratively established clusters and categories of different insight cards that were grouped in a single quadrant. Due to the fact that multiple people aided in this clustering process, the placement of some cards was critically analysed. This led to some cards being reshuffled to different quadrants or clusters. A third reclustering was done individually (by me) to make sure all cards in the respective clusters fit to the other cards. Some clusters with overlap or some with clear splits between the cards between them were either split or merged where possible and applicable

The eventual clusters served as direct input for the challenges and success factors for innovation management within ABN AMRO. The results of the research will be elaborated upon in the next section.

Fig 3.11 "Insights clustering"

3.4 Results

3.4.1 How is innovation managed within ABN AMRO?

This section describes ABN AMRO's innovation management efforts. Based on the innovation management framework described in the previous section, this section describes the following facets of ABN AMRO's innovation management: definition, stakeholders, portfolio management, support.

Definition of Innovation

ABN AMRO defines their innovation effort across the three horizons model as described earlier. ABN AMRO uses a division of 70-20-10 when it comes to innovation budget for Horizon 1, Horizon 2 and Horizon 3 respectively (See Fig. 3-13). As we've discussed the Three Horizons model in detail already only a few examples are given in the context of ABN AMRO in Table 3-12.

Horizon	Example
Horizon 1	Adding a feature to the existing mobile banking app that allows you to request new accounts.
Horizon 2	New10, a commercial lending proposition that allows SME's to get a loan within 15 minutes of applying.
Horizon 3	Dynamic contracts, that change the conditions of your contractual agreements to optimally align with your financial situation.

Fig 3.12 "Examples with horizons"
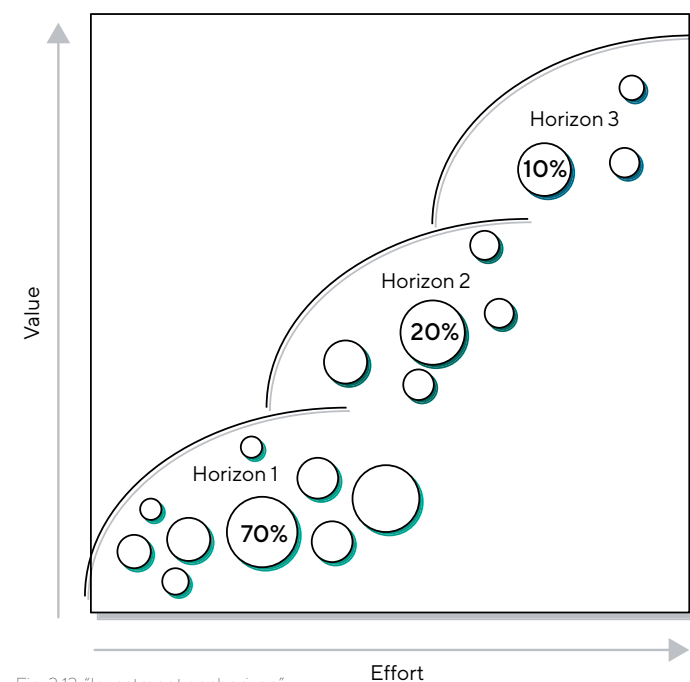
Fig 3.13 "Investment per horizon"

Stakeholders

Innovation within ABN AMRO is distributed over a set of departments and teams. This section maps and describes the key stakeholders in the innovation process.. See Fig 3-14 & 3-15, for their mapping onto the innovation framework established earlier.

Name	Description
Executive Committee	The Executive Board has agreed to be accountable for innovation. Each executive holds responsibility for innovation within their own business line. They're part of the theme and direction setting for innovation.
Group Innovation	Group Innovation is the centralised department within ABN AMRO that takes responsibility for supporting and propagating innovation both internally and externally. Within group innovation Horizon 3 innovation is organised centrally, where teams focus on the newest developments in technology and the market.
H2 Labs	Nearly all business lines have a H2 lab that falls outside the earlier discussed grid landscape. These H2 labs have a H2 lead, which is responsible for the labs within their respective business line. They foster and coach H2 innovation teams through ABN AMRO's "strategic innovation portfolio" – process., which will be described in detail in the next section.
Customer Experience & Marketing	Customer experience and marketing are responsible for collecting customer insights and translating these to prioritised improvements to existing products or new propositions. Next to that they're responsible for all marketing related efforts for ABN AMRO's current product set. For the further analysis in this report, the marketing responsibility will be left out of scope and the focus will be on the collection of customer insights and needs as that's deemed to be relevant to the topic at hand
Innovation Specific Grids	Within ABN AMRO's agile organisation, there are specific grids that have a specific innovation focus. Examples of these grids are the App & Digital Innovation grids, who are mainly concerned with the improvement of their existing apps and for the creation of new digital value proposition (generally in the form of an app). "Customer interaction, enabling and digitization" is another grid that focuses on new ways to interact with customers through for instance chatbots in the facebook messenger app. There are multiple grids that "own" a specific part of the system and innovate within that space.
Value Proposition Blocks	Value proposition blocks are a type of block partly responsible for the creation of new value propositions and doing market/customer research within their respective grids. They also help in coordinating and refining larger change and innovation efforts to feed into the VDBs backlogs. There are 63 of these teams in total within the agile organisation and all have different ways of working. There is no standardisation other than the recommended Kanban technique.
Value Delivery Blocks	VDBs are blocks/teams that work according to the Scrum methodology and largely exist of IT capabilities. They are generally in charge of building and coding epics and user stories that are prioritised by the PO onto the backlog. They have end-to-end responsibility over a certain system or product and actually do the work of change/idea actualisation.

Fig 3.14 "Stakeholders"
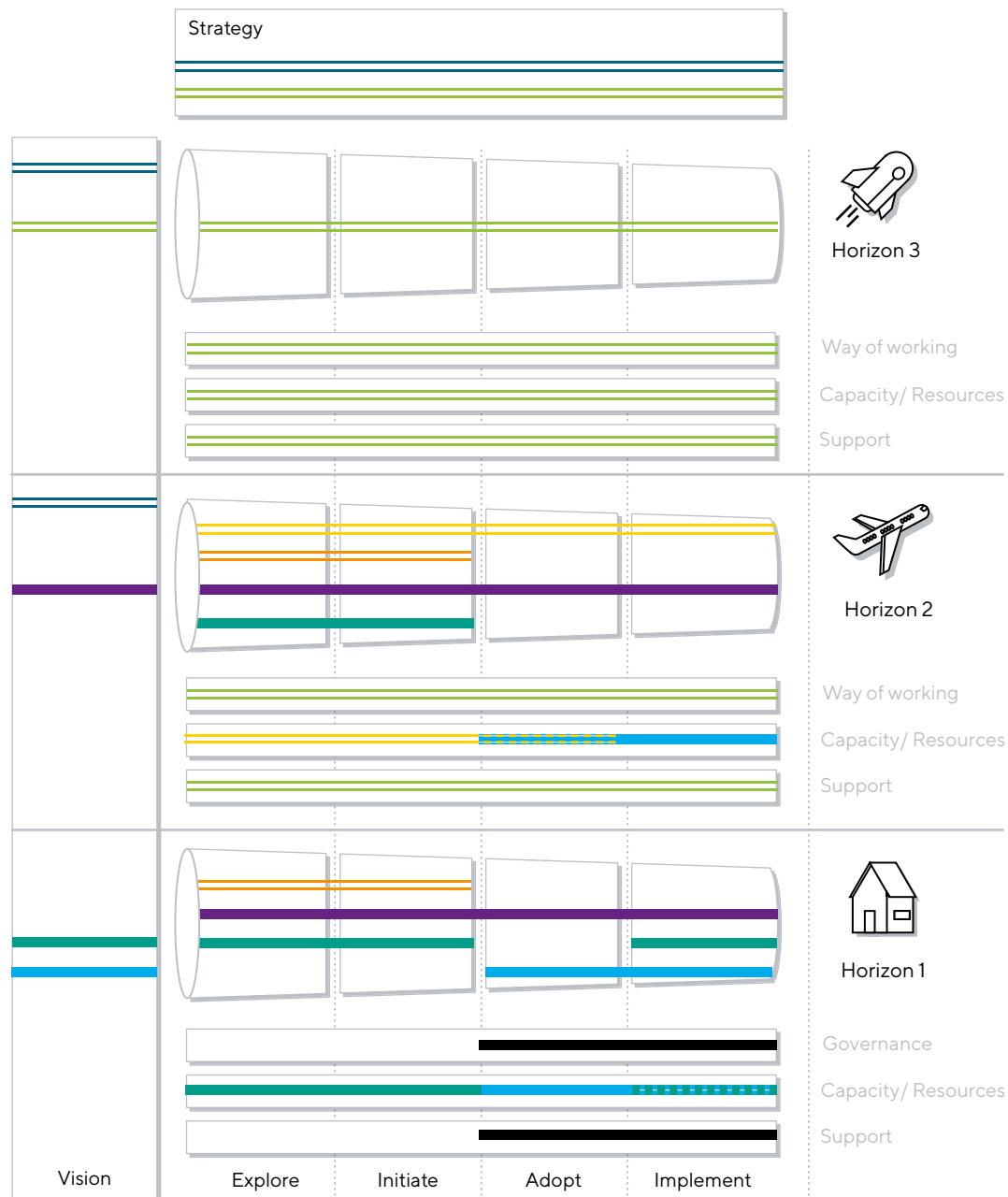
Fig. 3.15 "Stakeholders per horizon"

Legend

Inside Grid Landscape
- Value Proposition Block
- Value Delivery Block
- Innovation grids
- Fast Forward

Outside Grid Landscape
- Executive Comitee
- Group Innovation
- H2 Labs
- CX & Marketing

Meaning of lines
- Outside Grid landscape
- Mixed effort
- Inside Grid landscape

Innovation Flow

As can be concluded from the previous section, within ABN AMRO there's a multitude of stakeholders involved in the innovation process. Each of these stakeholders has their own way of creating, selecting and managing these ideas. In order to simplify the complexity of the stakeholder field and all the deviations in processes, the scope for idea flow, selection and management analysis is reduced to Group Innovation, H2 Labs, and the agile organisation (including VPBs and VDBs). These stakeholders are selected as they are present bank-wide, and not tied to a specific business line (like customer experience to Retail Banking). Exceptions will be made in examples where these external stakeholders have considerable input. This section will discuss the flow from H3 to H1 as that's the most logical going from abstract to more concrete.

Horizon 3 flow

Horizon 3 innovation falls within the responsibility of Group Innovation. There's internal employees and external partners that work on the latest technologies and development in the market. They do this through a process called sensing, in which a lot of desk research as well as external event & company visits serve as a base for "strategic" directions. Since there the Three Horizons structure is very young not many examples exist where innovations flowed from H3 to H2, there one in the workings right now but due to confidentiality can't be added.

Horizon 2 flow

For H2 innovation a Strategic Innovation Portfolio process is used (See Fig. 3-16 for a simplification), which is made in collaboration with NEXT amsterdam. Group innovation has a great share in creating this framework, however it's main use lies in the H2 labs. Group Innovation only supports Horizon 2 innovation, however the responsibility lies within the Business line. Most H2 initiatives are ideally pulled into the H2 labs where they receive the right guidance and support to develop the ideas. Ideas for Horizon 2 innovation generally come from responses to the innovation challenges. These challenges are set per business line and are a result of a preceding process. Facilitated by Group Innovation, each business line Management Team participates in a future casting session (generally an off-site), combined with external experts and internal innovation managers a set of three opportunity areas are created. This process is iterative and these opportunity areas should be refreshed and updated yearly. Based on these three opportunity areas, H2 leads, MT members and innovation managers further detail these three opportunities into problem/solution areas by doing a mix of market analyses, deep dives, customer interviews, trend analyses etc. Based on these market/solution areas, innovation challenges are written. However, this isn't the only way new initiatives can get into H2 labs, another way would simply be through an individual with a great idea who uses internal tools (e.g. coaching cafe or the idea kickbox) and secures funding through an investment board. The H2 initiative teams work according to a combination of the lean startup, agile and design thinking methodologies. Once ideas are selected and H2 teams are formed around these ideas they enter the innovation funnel, which is a stage-gate process where many ideas enter the funnel and as they go on either get killed or move on through the stage gate funnel to receive more funding. These go/no-go decisions are made by the investment board and generally only includes senior managers. Each of these stage gates is associated with a certain activity (e.g. problem-market fit, problem-solution fit, product-market fit) and for each funding round, new experiments help to refine the problem and/or product to help secure funding. After the initial stages, tweaking for scaling and actually building the product starts. Within each of these stage gates, decisions can be made to start a spin-off, or scale internally. Either way capacity to build these initiatives is needed, which can be outsourced or can be sourced through the agile organisation.

Vision — Challenges — Problem-Market Fit — Problem-Solution Fit — Solution-Market Fit — Solution-Scaling Fit — Scale!

Investment Board
Go/No Go
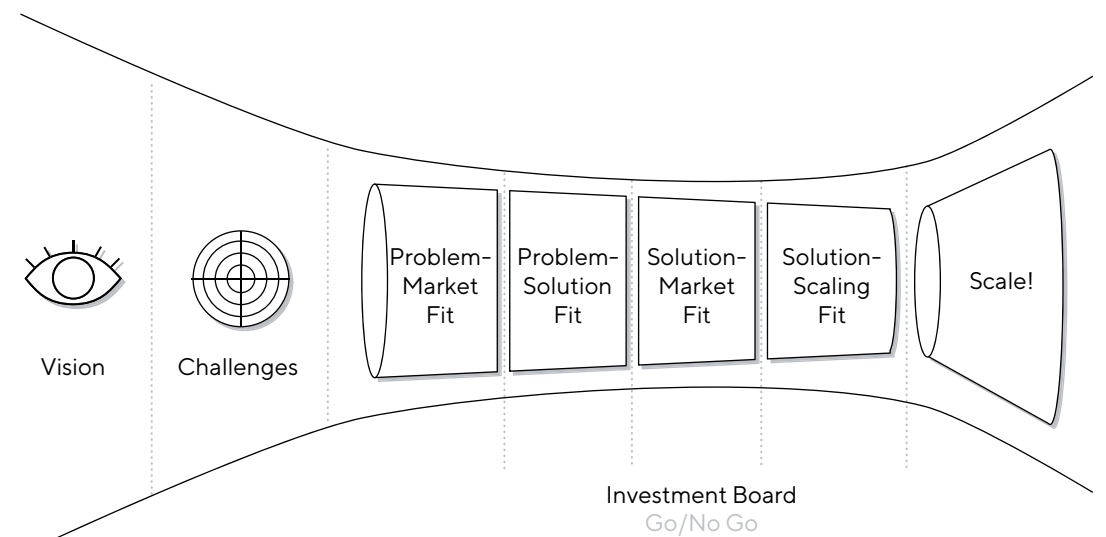
Fig. 3.16 "H2 Strategic Innovation Process"

Horizon 1

For Horizon 1 innovation, the responsibility lies solely in the agile organisation. The agile organisation has been discussed in detail in the previous chapter, however a short description of the process and flow will be given (See Fig 3-17).

Ideas and requests flow from multiple directions, either a PO puts something on the backlog, or a team member with a great idea, stakeholders from outside the grid that need something. There is no real structure or governance on how ideas flow within the grid landscape. The main flow goes from VPBs that refine and create value propositions and then get these on the backlogs of the VDBs in the grids, who subsequently build what is fed into the backlogs.The VPBs have no standardised way of working other than Kanban or Scrum (whatever suits the situation), whilst the VDBs work Scrum. In more mature grids the grid portfolio is a central place where all running innovations and initiatives

are capture in one overview. During a grid sync, there's an opportunity for anyone to pitch their idea or innovation. If the grid leadership is convinced the idea is valuable it will be taken into the valuation quadrant. Where the idea is plotted on this matrix of value x effort, where items with low effort and high value are taken into the backlog of the grids. Ideas of which value or effort is unclear, more refinement is needed before it can either move into the backlog or gets removed from the grid portfolio if it's not valuable after all. All episodes (that's the size at which items get discussed in grid syncs and portfolios) are tracked in a simple Kanban setup. If an innovation gets pulled into the grid backlog, it gets assigned to a particular VDB to build it, or if the idea needs refinement it goes to a VPB.
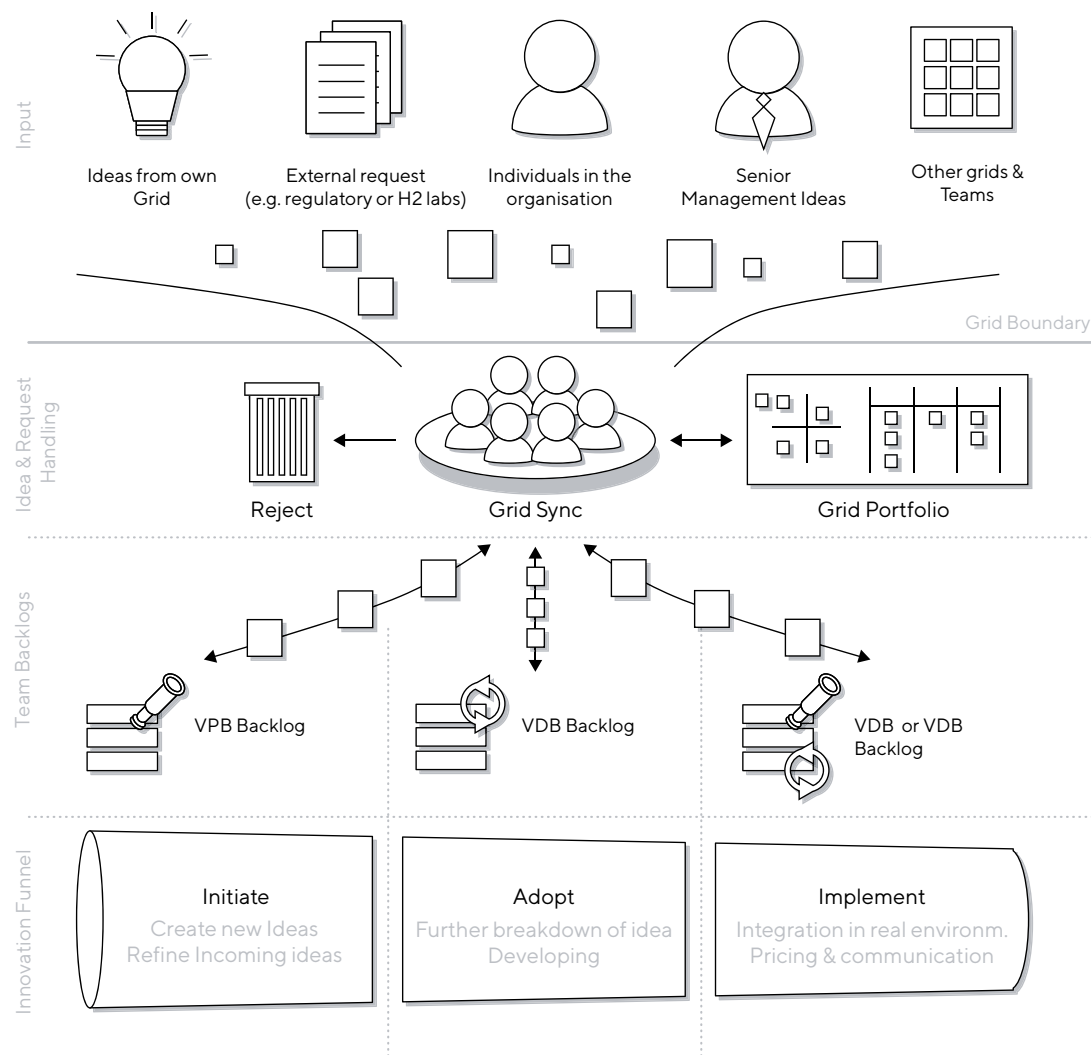
Fig 3.17 "H1 flow"

Adobe Kickbox

Adobe was the first to create an idea "Kickbox", which is a physical box that contains everything to bring an idea to the next level. From markers all the way up to an energy bar to give you the fuel for ideation. Right now the "Kickbox" is a widely used form of support within organisations to give all of its employees the chance to develop and potentially realise their own innovations within the company.

Innovation Support

In order to stimulate and support the organisation in their innovative efforts, multiple tools, workshops, websites and frameworks were developed. In this section the support mechanisms that Group Innovation provides will be explained as the support for the agile grid landscape is presented in the previous chapter. See the table below for an overview of innovation support (Table 3-18). Interestingly, innovation is supported within ABN AMRO in many ways and forms, however is largely focussed on Horizon 2 innovation with surprisingly little support for Horizon 1 innovation. Whilst H1 is the largest population within ABN AMRO, Group Innovation has no responsibility over supporting the agile landscape with regards to innovation.

Table 3.18 "Innovation Support"

Support	Target Audience	Main focus H1	H2	H3	Description
Innovation Learning Programme	*Senior Management*		■		A educational program with multiple "modules" to teach senior management about the latest developments and trends in the market
DARE	*All employees*		■		Unreleased website that serves as a scalable innovation toolbox that can support or guide anyone throughout an innovation process with tools and guiding questions based on the stage in the innovation process.
Idea Kick-box	*All employees*	■			A digital kick-box (as per the Adobe Kick-Box), that's presented to anyone with a promising idea. The kick-box provides all that's necessary for the idea owner to further develop and prepare their idea for an investment board pitch.
Coaching Cafe	*All employees*	■			Every Friday Group Innovation hosts a coaching cafe, open to anyone with questions about innovation processes and tools or about their ideas. They provide light weight consults generally with either a kick-box or other tools/method suggestions as a remedy.
Workshops & Lectures	*All employees & On request*	■			Multiple workshops and lectures are given at internal events or to grids/blocks specifically. Examples of these are (Design Thinking and Lean startup lectures) .
Strategic Innovation Portfolio	*Teams in H2 Labs*		■		The framework (discussed earlier) that defines how H2 innovation is managed within ABN AMRO
Innovation Coaching	*Teams in H2 & Explore Labs*		■		Group innovation lends coaches to H2 lab teams and H3 explore teams to facilitate their creative and innovative process as well as challenge on the content the teams produce

3.4.2 Challenges for Innovation Management

This section describes the challenges found for innovation management within ABN AMRO. Based on the clustering and grouping of insight cards that were subtracted from 18 semi-structured interviews, a total of six challenges areas were found; lack of company vision and focus on innovation, organisational politics and management, "deficiency in skills, mindset, and support needed for innovation", trying to get (any) innovation onto a full backlog, lack of governance and guidance on innovation processes, and a product & system oriented agile landscape. These six problem areas covered a total of 17 sub problems. See left side of Fig 3-19, the full visual also includes the success factors, however as discussed before these won't be discussed in the main thesis and can be found in Appendix O.
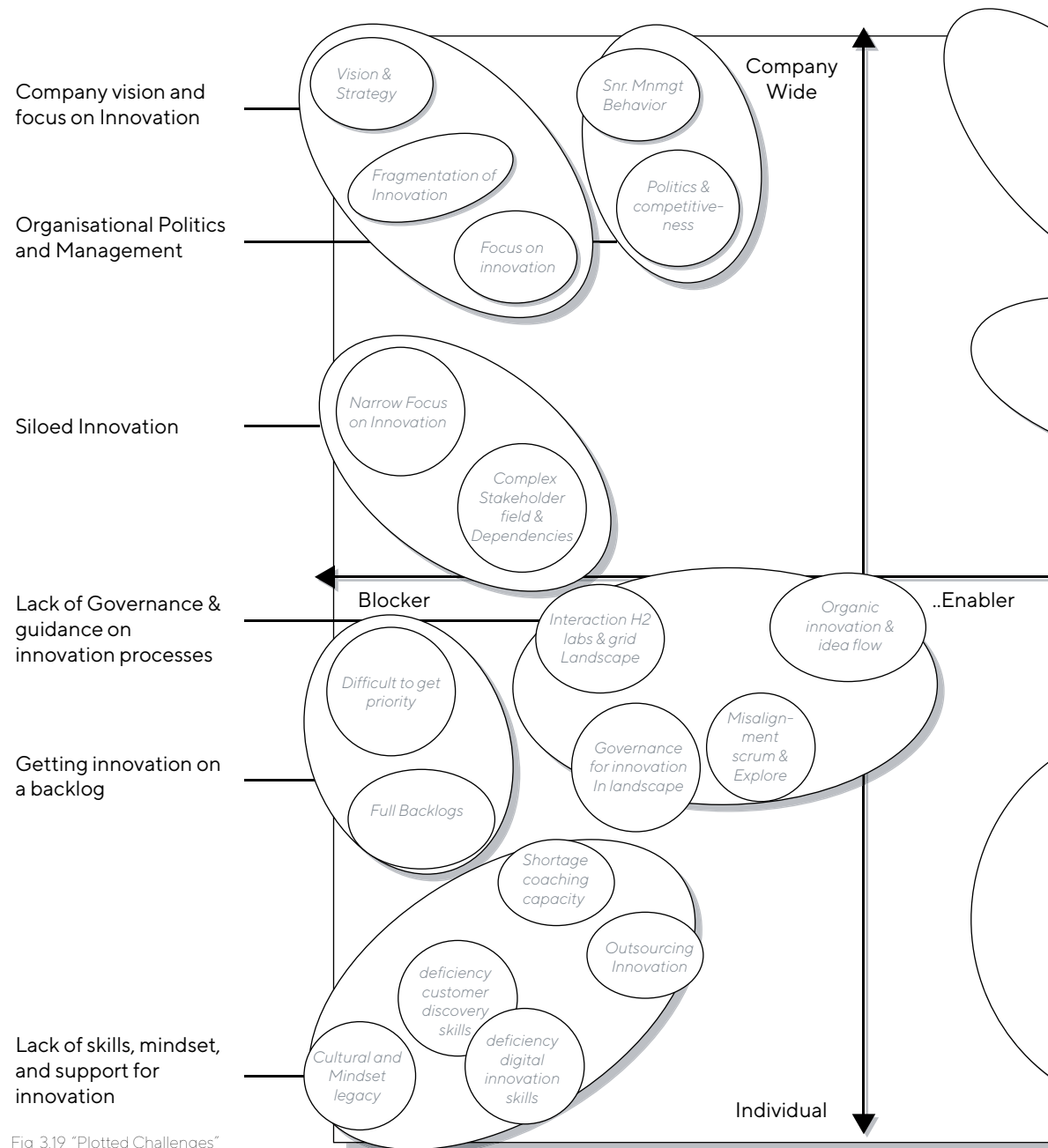
Fig. 3.19 "Plotted Challenges"

Company vision and focus on Innovation

Organisational Politics and Management

Siloed Innovation

Lack of Governance & guidance on innovation processes

Getting innovation on a backlog

Lack of skills, mindset, and support for innovation

Labels within diagram: Vision & Strategy, Snr. Mnmgt Behavior, Fragmentation of Innovation, Politics & competitive-ness, Focus on innovation, Narrow Focus on Innovation, Complex Stakeholder field & Dependencies, Interaction H2 labs & grid Landscape, Organic innovation & idea flow, Difficult to get priority, Governance for innovation In landscape, Misalign-ment scrum & Explore, Full Backlogs, Shortage coaching capacity, Outsourcing Innovation, deficiency customer discovery skills, Cultural and Mindset legacy, deficiency digital innovation skills. Axis labels: Company Wide, Blocker, ..Enabler, Individual

Company Vision & Focus on Innovation

Lack of company wide vision and strategy for innovation

There's an outspoken lack of a clear company vision and strategy on innovation. There are strategic themes that are determined by management teams per business lines as well as innovation challenge areas, however these show little cohesion or vision.

"I see speed boats overhauling this behemoth [ABN AMRO] left right and center, who just perform better than we do. And this behemoth, it's engine is just very old and it's up for replacement"
Participant 9 (Business Developer)

This isn't all surprising considering the nature of the company, where innovation wasn't a thing until a few years back. Senior management has grown to these heights in a time where short-term thinking was the standard. All of a sudden they have to be knowledgeable on the latest technological trends and form long term strategic directions in these wild "competitive waters"

"[talking about innovation vision and strategy] That's not really defined, we do have the three horizons, however you actually don't want to have those. Prerably you'd work from a strategy, for instance, we're going to bet on these value streams and the other ones we're going to phase out."
Participant 8 (innovation Manager III)

(Lack of) focus on innovation

In general, the necessity to change and become radically more innovative isn't felt, or isn't communicated enough. This is firstly reflected in the budget allocation for innovation which last year stood at 0.9% of the revenue, which is considerably lower than the average of 2 to 3% of peers.

"Then we looked at how much percentage of revenue goes towards innovation, that was shockingly low, only 0.9%" -
Participant 14 (Senior Management Consultant)

Another exemplifying the lack of necessity/focus would be the comforting quarterly performance e-mail of the CEO to all employees, which focusses mainly on H1 innovation with mentions of Tikkie and New10 as well as a giving an impression that "things are going well". This incremental innovation focus is perpetuated in the choices made in daily work where; most of the saga's are focussed on H1, most of the resources are allocated to the agile organisation, too little time dedicated for innovation and the existence of business lines where innovation has clearly taken a back seat.

"[talking about checking the status of innovation in the grid] interestingly all of the Saga's were focussed on H1 innovation, and very little on H2"
Participant 14 (Senior Management Consultant)

One could argue that their publicly traded status might push ABN AMRO into more risk averse and incremental directions in order to satisfy their shareholders each quarter. Whilst first steps and strong foundations are laid with the ambition of having a Horizon 1, 2, and 3 budget spread of 70%, 20%, 10% respectively. However, this division is far from being reached.

Fragmentation of innovation

There are many stakeholders when it comes to innovation within ABN AMRO. Simply glancing at the stakeholder map presented in the previous section, will give a general impression of its fragmentation. Having many different stakeholders on different levels in the organisation work on innovation creates confusion on the responsibilities and the interactions between the involved parties. Not only do the locations in the organisation vary wildly, their focus and innovation deviates as well, further complicating the situation.

"Everything [related to innovation] is stupidly fragmented within the bank. On one hand that's logical and shows that people want to innovate, however on the other hand we'll need some sort of funneling of what we're actually innovating towards."
Participant 11 (Product Owner)

....

CEO involvement
At Coolblue, the CEO Pieter is very involved with everything that goes on inside his company. If he feels like a certain opportunity arises, he wants the make sure the organisation understands that this certain item gets priority. For example with mobility, he felt like bike delivery would be a big opportunity and recently they've started their "fietsbezorging" service (See fig. 3-20). In order to make that happen, Pieter communicated to the entire company not to bother particular teams with requests so that they could focus on what had priority; bike delivery.

Fig. 3.20 "Coolblue Fietsbezorging"

Organisational Politics and Management

Organisational Politics & competitiveness

There's a general theme throughout ABN AMRO where politics and competitiveness amongst different departments is noticeable. An example of politics would be the split in responsibility of H3, H2 and H1 innovation. Where group innovation took their hands off the grid landscape and left H1 innovation under their responsibility.

"..., we deliberately stayed away from the H1 discussion and that's for a reason. I've joined the agile workgroup for a while, the Fast Forward one, purely to get innovation and that way of working into the plan. There just wasn't any space for it."
Participant 13 (Innovation Manager III)

Multiple participants mentioned the "us vs. them" mindset and culture between different departments concerned with innovation, instead of a collaborative mindset. Having split up the company into separate business lines doesn't help to achieve cohesion as each business line has their own representative with individual focus and agenda's. This further trickles down into the business where conflicting targets are set, where one department basically moves the problem either up or down the end-to-end process line. The split in business lines takes part in a larger problem of ABN AMRO: their organisational silos, however more on this will be explained in following problems.

"Well I would do the same if I were her, because I am scored based on the reduction of 2 million calls. Simultaneously, I'm thinking, they're looking at my boss who is responsible for NPS, and his NPS is dropping.... BAD! How's that possible, things are not going well. This isn't organised right, quick get {large consultancy firm}, we need to do this differently, because this is going downhill. Yeah, I believe if we'd have uniform targets, and shared responsibility over them it doesn't matter how you're organised"

Participant 10 (Head of customer experience)

Senior Management behavior

Senior management struggles with innovation as a subject and how to properly organise it within the company. An interesting video exemplifies the lack of knowledge and confidence of senior management in their peers. Where the Chief Innovation & Technology Officer presents the results of a peer assessment amongst ABN AMRO senior managers where they were asked to rate their peers on their knowledge on topics like "Lean startup", "Design Thinking", "Blockchain" and "Artificial Intelligence". The results showed that Senior Managers believed only 20% of their peers felt comfortable with these topic, wheres they scored themselves around 40%. One possible explanation for this could be a statement by one of the participants stating that it's difficult to stay updated with the latest developments on these subjects as a senior manager at their old age in-between their busy lives.

These test results are contrasting with the top down innovation approach taken on innovation where innovation themes are determined by senior management with the support of group innovation and the H2 labs.

Mentioned later on and more in depth is the challenge of traditional behaviour that's still persistent amongst senior managers, where work is still pushed down onto backlogs of teams, generally based on assumptions with little to no validation.

> *"Much of the work the work that's done in the grids comes top down into the backlogs of teams, with little to no validation"*
> Participant 6 (Head of Innovation coaching & design)

Requests from senior management for dashboards and metrics that provide insight into innovation further exemplify this behaviour. The danger in these dashboards and metrics, as reported by participants, is that these metrics turn into goals on itself, like it has become for NPS.

······································

Validation much?

During a talk with a senior manager, she mentioned that sometimes ideas get dropped into the business without any validation. The example she gave was that one other senior manager told his subordinates to build the option to request a paper report of a companies' transactions because that's what company owners want. Upon further inspection on how he got that idea, he mentioned that a friend of his told him he would like to have that functionality.

By the time they found that out, the teams were already busy building that piece of functionality. Without validation or further questioning the senior management, a lot of resources we're wasted (Fig. 3-21)

"Companies want paper reports!"

"We're on it"

Backlog

Paper Report Company

Item
Item
Item
Item

Fig. 3.21 "Senior Management work push"

Siloed innovation

Complex Stakeholder field & dependencies

The step towards the agile landscape is by some perceived to be a step backward from an end-to-end organisation. The decision to create grids that have full autonomy over either a product or a set of systems, has resulted in many dependencies between grids as the systems on which they run are shared by a large number of stakeholders. For example with a feature that allows me to create an ABN AMRO account through the app, requires at least 4 different grids and even more teams to realise and even more teams.

- Mobile Internet and Design: For editing the mobile app
- Accounts Payments & Packages: Underlying systems for accounts
- Identity & Access: Editing login procedure app
- Channel Security: Making sure there are no weak spots and dangers for new feature

> *"Now even with the grid landscape, we've done a step backwards [from the end-to-end value stream organisation] by cutting things up even more and by organising around products and systems"*
> Participant 4 (Program Manager)

For each new initiative the stakeholder field varies and in general is perceived to be complex. For radical innovations or large initiatives, these dependencies within the grid grow exponentially complicating the implementation of them. Even once the right stakeholders are identified and involved, the next challenge is to get the items prioritised on all of the backlogs, which is a completely different challenge which has already been discussed earlier

Organisational Silos and narrow innovation scope

Each grid in general owns a subset of the entire end-to-end journey, thus increasing the potential for suboptimal innovation. The organisational design creates silos and stimulates the incremental and siloed view on innovation, as blocks within grids tend to focus on propositions that fall within the scope of their grid.

> *"That's when you get the island building, people aren't really keen on looking at other departments within ABN, and looking at their surroundings. People just go on to do their own thing, really fragmented."*
> Participant 11 (Product Owner)
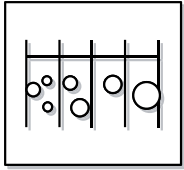
Lack of Governance and Guidance on Innovation Processes

Interaction H2 Labs and Grid Landscape unclear

The collaboration between the H2 labs and the grid landscape is unclear and no governance exist on how these two entities within ABN AMRO should interact with each other on the innovation initiatives and capacity (See Fig 3-22). The problem arises in the "building" capacity that's required by the H2 lab initiatives in order to build and integrate the initiative into the ABN AMRO systems. This means that capacity from the grid landscape is needed (many times from multiple grids) in order to build it. Since grid owners and product owner have autonomy over their own backlogs, this tends to be challenging actually securing building capacity.

"That [securing building capacity for H2] doesn't go without any struggle, some H2 labs which are further in their development experience problems because the backlogs of the grids are too full and H2 [innovation] doesn't have priority"

Participant 6 (Head of Innovation coaching & design)

The problem also works the other way around, where H2 labs are actually experiencing some problems filling them with enough teams and initiatives. There's an expectancy from H2 labs to get teams with great ideas and develop them inside the labs. The problem however is, no governance or agreements exist around this exchange, and moving teams into the H2 labs would mean they would literally be pulled into a different location away from their co-located grid.

Lack of Governance on innovation in the Grid landscape

Mainly due to the split in responsibility where group innovation only supports H2 and H3, a lack of governance and support arises for H1 innovation.

"Currently there are no dedicated tools for the Grid Landscape when it comes to Horizon 1 innovation"

Participant 3 (Head of Innovation)

This results in little standardisation and governance in the grid landscape for amongst other things; tools, processes and methods for innovation, idea validation and management, termination of initiatives, and stakeholder management. One participant even mentioned the occasion where three teams were working on a similar initiative where none of them knew of each other working on it. Interestingly, on H2 and H3 there are plenty of support tools, frameworks and processes in place of which the people in the grid landscape are very little aware.

"I see many teams struggling with this. It's not really about the double diamond process. I can show them the image and explain a little about it, and they'll have a general understanding. The problem is partly linked to the tools, about how you use the tools to actually fill the process. It's also about the general approach"

Participant 18 (Lead Product Owner)

Misalignment exploration & scrum

Multiple participants talked about the misalignment of the construct of sprints and explorative and innovative processes. More specifically in the grids where VPBs are responsible for generating new value propositions, they've reported to experience it as challenging to find a way of working that aligns with the scrum way of working of VDBs. Take for instance a customer observation and interviews, which can be done in two days or even in a timespan of months depending on how much data you're collecting, how you're processing the insights and what insights you want to get out of it. Some consequences of this misalignment are, mini-waterfalls, where a clear hand-over exists between VPBs and VDBs. VPBs in this case are generally seen as the ones that "think" about new ideas and VDBs as the ones who build it. People involved in the design of the organisation have admitted that they've underplayed and didn't elaborate enough the interaction between these two types of block

"People are trained and conditioned by sprints and such, which doesn't match the explorative processes"

Participant 18 (Lead Product Owner)
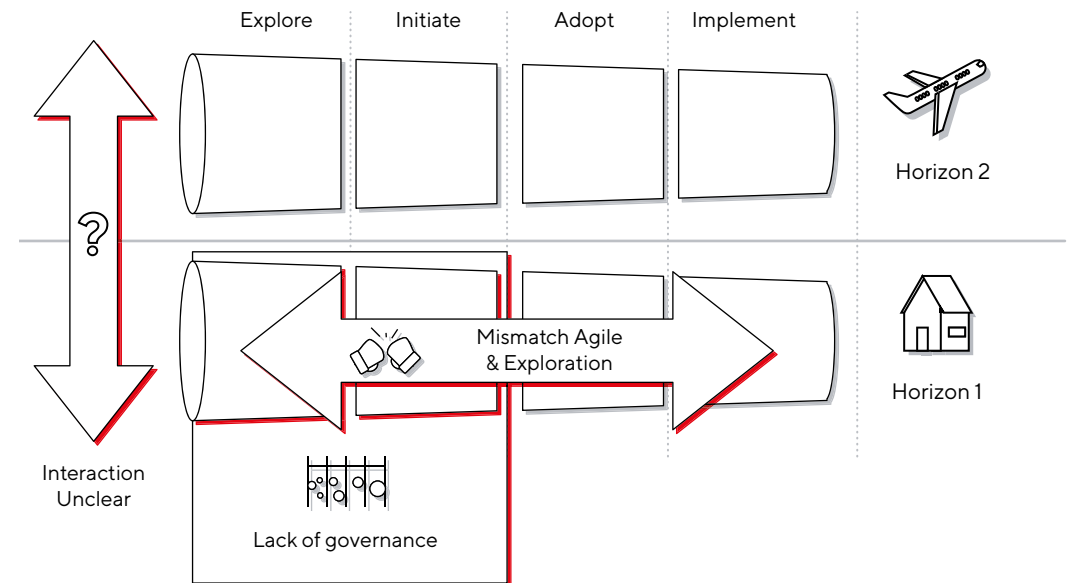
Fig 3.22 "Challenges governance & processes
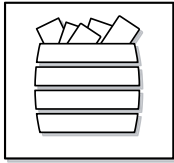
Getting Innovation on a backlog

Full Backlogs

Partly due to a lack of validation skills, traditional behaviour where work is pushed onto backlogs, and high amount of work that flows from "business as usual & regulations" backlogs get clogged with epics and user stories. Requests and work can come from any direction onto the backlogs of teams, leading to backlogs being overfilled, more specifically with mandatory and "business as usual" items. Every time new things get added to the backlog, nothing gets removed either. Making the backlog longer by the day.

"What I see very often is that people say that they're going for one thing, which means something else needs to be stopped otherwise there won't be any resources. However, most just say that they're gonna go for something and subsequently keep on doing the other things next to it, we'll never get there if we keep doing it that way"
Participant 16 (Engineering Lead)

Some participants mentioned that they've encountered teams that have their backlogs filled until 2019 or even 2020. A reason that adds to this phenomenon is that traditional culture has always stimulated the satisfactory behaviour towards superiors as well as a lack of strategic boundaries and vision to which POs and GOs can value, prioritise and remove different items on their backlogs

"I sat together with the head of Private Banking for example, he says, we can't do anything because the backlogs are full until 2020. A traditional way of waterfall has literally translated to a backlog"
Participant 13 (Innovation Manager III)

This full backlog leads to problems when new initiatives from outside a grid need to be made, especially "innovative" initiatives experience tremendous difficulty in securing building capacity as well as getting priority on another PO's backlog. This would not be an issue if it weren't for the fact that IT capacity for building H2 innovation has to come from the grid landscape, meaning that a new innovative initiative will have to secure multiple prioritised places on the backlogs of grids with their own strategic targets. This challenge will be discussed in more detail in the following section..

Difficult to get priority

Innovation is a priori more risk bearing than for example mandatory work or business as usual. With little to no incentive for POs and GOs to engage with long term or risky endeavours, it has shown to be common for "innovation" to fall of the sprint backlog. Especially because there are many backlogs that are full just with mandatory and "business as usual". Even for ideas that originate from within the grid, and H1 innovation it has shown to be difficult to put aside capacity.

Complications increase when the ideas or innovations come from outside the grid landscape. Each idea or initiatives that have an IT component (which is nearly all), need to go through the agile grid landscape. The PO at hand naturally has a preference for work that contributes to his own work, rather than requests from outside (See Fig. 2-23).

[about not giving priority to ad-hoc requests] "I think I would find it hard as well, because I have a backlog of which I'm convinced that its prioritised right. And if someone would have some requests in-between, like Oh well we have to do this. I'll start thinking, hmm probably a good idea, however do I find it better than my own idea on which the team and I have been working for a long time... than it becomes very human to have a preference and bias, and tell them we could put it on our backlog however it will end up somewhere on the bottom."
Participant 11 (Product Owner)

This is also attributable to the lack of bank wide vision, which impedes effective prioritisation for PO on the backlog based on this vision. Adding to this, is the effect of the "Not Invented Here"-syndrome (mentioned by some interviewees), which indicates the phenomenon of "rejecting ideas from outsiders to the likely detriment of its performance" (Katz & Allen, 1982). Since H2 labs foster, grow and refine ideas outside of the grid organisation, however need the grid's VDBs to actually integrate and build the ideas, a clash in interest generally occurs. Most of the time this has been experienced as "hitting a wall" at the moment you're planning to start realising new initiatives and leads to the rejection of validated idea. As explained earlier large initiatives or H2 innovation generally have to rely on many grids for their implementation, meaning that each PO has to give priority to the work that's requested in a timely manner, which is a complex but significant challenge

"And that's the fight, because who's getting those resources. Most of the resources are already allocated to the grids up front. Fixed capacity, full backlogs, and you have a problem because this way you're not innovating"
Participant 13 (Innovation Manager III)
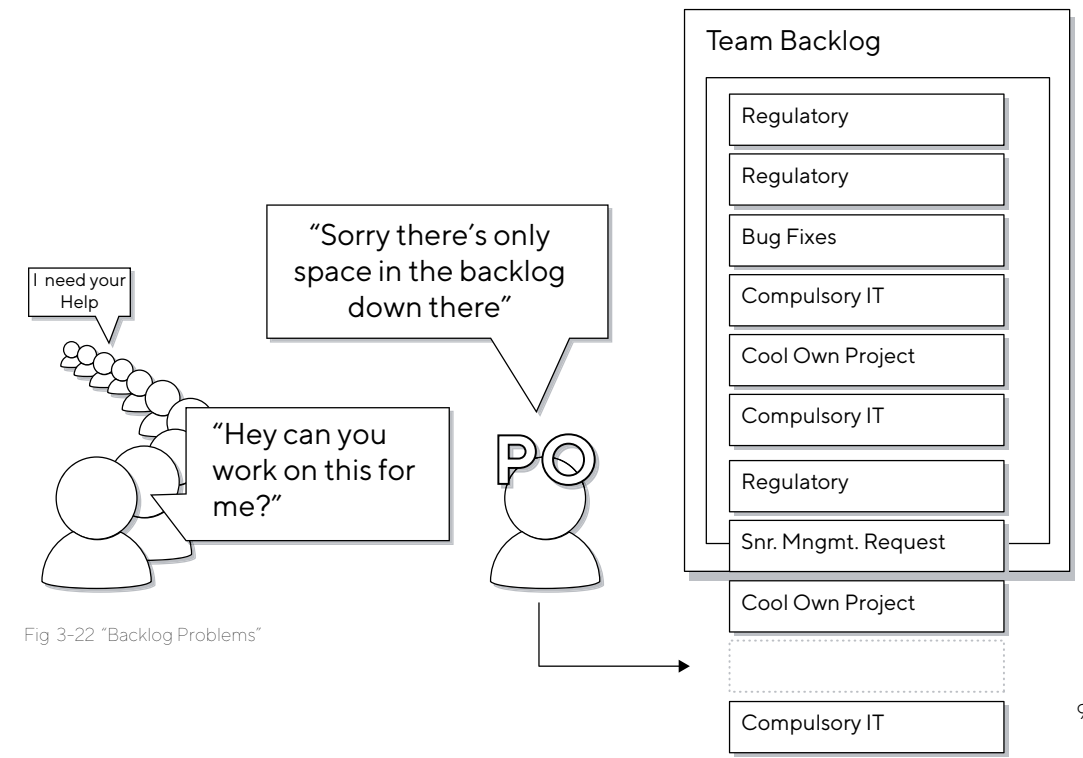
Fig 3-22 "Backlog Problems"

Lack of Skills, Mindset, and Support for Innovation

Shortage of coaching support

Both Group Innovation and Customer Experience don't have enough capacity and budget to service the entire organisation and all the demand that's coming in. Customer Experience only services certain parts of the retail organisation and helps other business lines sporadically. Whilst these other business lines have their own marketing departments, still a lack of these capabilities exist.

Group innovation receives many requests from multiple departments within the organisation for workshops and coaching to teach explorative skills. However, they're heavily understaffed for the size of the organisation and run into the challenge of not being able to scale coaching

Outsourcing innovation and market research

Much of ABN AMRO's innovative capabilities are externally sourced. There's an perceivable increase in the amount of design sprints, design teams and customer experience consultants that are bought from external agencies. The problem however is that external agencies bring everything in like a pre-made meal, generally leaving little improvements to the employees knowledge on how they could do innovation or exploration by themselves. Second to that, a lot of money is spent on capabilities which are also present within the company, such as Customer Experience for CX consultants.

"What the need currently is, we want something like a design sprint. I think that should be done more often. However many times it's the case of: we can't do this so we'll hire an agency that fully facilitates it. They bring the entire set of processes, tools and facilities, however that doesn't educate us much"
Participant 18 (Lead PO)

Market and customer research is another item that is outsourced by the marketing departments. Whilst this data provides general insights about the customers, a lot of valuable contextual information is lost (See example on the left). This impacts ABN AMRO's ability to truly focus on customer needs, however more will be explained about this in a later problem.

Deficiency of skills for digital innovation

In general within ABN AMRO there's a serious lack of innovative capabilities. More specifically, explorative, digital, validation, customer experience, entrepreneurial skills and mindset are scarce. The fact that each of the horizons requires different skill sets further complicates this matter, as there's already a lack of skills to do innovation in general. IT has never been perceived to be a core capability of the bank, and has always been outsourced. Now they're realising that IT needs to be a core competence and lag behind other more digital and IT literate companies in this area. More specifically in the grids, the skill sets that are included in the transformation are business and IT due to its scope. Multiple participants mentioned the scarcity of knowledge and skills when it comes to innovation and explorative processes.

The challenge with all of these competences and skills is that they can't be taught in a day, nor in a two week course or design sprint. Doing a Saturday afternoon wine-tasting with your friends, doesn't make you a sommelier either. It takes years of practice and training in order to become a sommelier, and the same goes for the skills regarding innovation. Attracting these digital and creative talents from outside of the market is perceived to be challenging, especially for a bank like ABN AMRO, which still has this traditional image

"What we see is that innovation capabilities are very scarce still, so that's not the case yet [talking about when group innovation would be obsolete]"
Participant 6 (Head of Innovation coaching & design)

Deficiency in Customer Insights & Experience skills

Whilst one of their strategic pillars state "Customer Centric", ABN AMRO suffers from a deficiency in customer insight and discovery skills

"What we have right now in the financial risk grid is an innovation team. What I'm seeing is that the innovation team has no clue about what the customer actually wants. Right now it just focusses on a technology push."
Participant 11 (Product Owner)

Partly attributable to Marketing and Customer Experience departments outsourcing their customer research and market research to partners, which as explained earlier leads to loss of valuable information as these parties summarize and package the information. Evenmore, Marketing and Customer Experience segment their customers, which isn't necessarily a bad thing, however as input for ideation and user needs, you run the risk of generalising too much. Before the agile transition ABN AMRO marketing departments didn't even want employees to talk directly to the customer, everything related to customer research had to go through them. For all these years, employees have been shielded from talking to the customers themselves. Historically, little validation with customers was done and products were just "pushed down people's throats", as one participant states. In the beginning of the transformation, where many product managers were repositioned to product owners, they claimed to be adequately skilled for the customer insight and interaction part of the job as well. A year after the transformation, they're realising that a product owner role does differ from their traditional product management role (See Fig 3-23). A striking example of these lack of customer insight capabilities is a product manager that had done her first real customer interview after 20 years of working for ABN AMRO:

"I was talking to someone from retail the other day who said that last month it was her first time she had spoken to a customer. Someone who has been working for 20 years at ABN. I found that a true shocker; [she asked] could you give us a workshop on interviewing?"

Participant 8 (innovation manager)

Interestingly with the introduction of the agile organisation, a friction arose where teams were expected to talk to customers. All those years ABN AMRO employees had no experience in talking to the customer and relied heavily on their own assumptions as "the business would know what the customer wanted". Even though the scope of the agile organisation did not include customer experience, there just aren't enough employees within ABN AMRO that have these capabilities.

Cultural and Mindset Legacy

Changing a culture and mindset is known to be very challenging and time-consuming. After years of working within ABN AMRO many employees have traditional culture and processes burnt into DNA. Traditionally, ABN AMRO used to "punish" failures and as a bank is more likely to be risk averse. There's a cultural tendency to avoid risk, and employees have even reported to fear making mistakes.

"Validation is something that isn't done yet because of the insecurity it brings along with it. People still look for confirmation on whether they're doing the right thing. Doing things right is about validating with the market, which is the scary part. That also means that is should be iterated, however making mistakes is something we're all afraid of here"
Participant 9 (Business Developer)

This seriously influences the willingness and probability of ABN AMRO employees to validate and make mistakes. This generally leads to a lack of validation or missed opportunities as valuable ideas are not taken further to avoid failure.

Innovation is risky in its nature, and generally doesn't fit the risk profile of corporate banks. Traditional structures and processes have also formed the employees to think inside boundaries and rules of their responsibilities and departments. Traditional thinkers are thereby perceived to be a threat to innovation, as they've been experienced as rejectors of ideas that fall outside their frame of reference. Employees have been taught to think on the short term, with yearly individual performance bonuses that made you focus on what's shows results in the short term.

This has led to managers spending time on projects with a lot of visibility, and little validation in order to get to results as fast as possible. The effect of people or managers who fall in love with their idea, and only search for the confirmation of their idea or have no interest in validation at all, further adds to this complication. The notion of invalidating ideas and concepts is completely new to the bank. This MVP, fail and learn mindset is something that definitely needs to improve. Next to that, the lack of skills on innovation and the narrow view due to siloing impedes the creation of novel and high qulity ideas. Some innovation managers expressed their concern with regards to the quality of the innovations that were created in the grids.

A simple refresh of the organisation replacing traditional thinkers with people that have different mindsets and skills would be an extreme but sometimes an outspoken (by some participants) desirable measure to get ABN AMRO into innovation.

Well we need to have a refresh of people, that's what we're doing right now. But that's going to take longer than a day" –
Participant 7 (Innovation Manager III)

The role HR has in this process however is crucial, but they are already struggling to keep up with all the other internal developments and changes of which the Fast Forward agile transformation is one. Changes to traditional processes are underway, however it might take some time for HR to fully adjust to all these new requirements. For now, discharging people as an extreme measure wouldn't be possible either as the cost of it is generally high due to benefit packages. Such a radical decision would never be made in the first place as true decision makers in senior management have been perceived to be less concerned with innovation.

Multiple participants also mentioned the lack of time and space reserved for creativity and innovation. "There's a lot of talk about creativity and innovation, however little show" as one participant remarks. The same goes for topics like "Design Thinking" and "Lean Startup", which are used mostly symbolical. These are all signs of a still immature innovative culture at ABN AMRO. Old processes and mindset have also shown to counteract new processes, as one participant's reports that he tried to do design sprints with a team from Private Banking, however they were reluctant to do that as it didn't fit their planning and interest. Another example and discussed earlier is the mismatch between explorative processes and the cadence of Scrum.

"Well, I'm trying to introduce and organise a design sprint in my grid Investments, because it will help us understand whether our proposition still matches what the customer needs. And they're response is... yes we already know it does. I just can't get through that traditional mindset, they already know what the customer wants and they're going to solve that with a product."
Participant 9 (business developer)
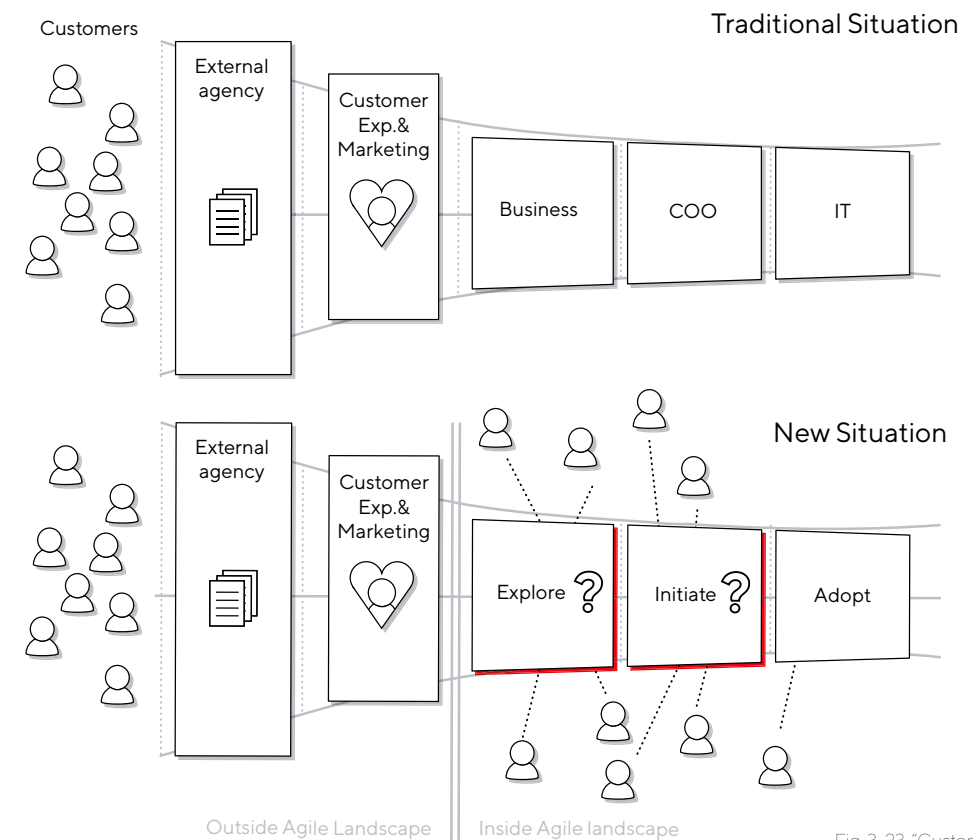
Fig 3-23 "Customer Insights: Before & After"

3.5 Discussion

Little research exists on the topic of challenges for innovation management in a large financial services firm. A total of 6 challenge areas were discovered using data from 18 semi-structured interviews with employees involved in the innovation process at ABN AMRO. In addition, the case study describes the overal innovation management activities of ABN AMRO. The challenges are found in the context of a large financial services firm and add to the innovation management literature focused on the financial services sector.

3.5.1 Findings

ABN AMRO utilises the "Three Horizon's of Growth" framework as a basis for organising their innovation efforts. This Horizon's framework is found to be used by other organisations, such as ING, Achmea and was mentioned by Nas (2018), Pubben (2018) and Soer (2018). ABN AMRO employs a budgeting ratio of 70-20-10 (in percentages) spread over Horizon 1, 2 and 3 respectively. A similar division of budget (70, 20, 10) over the three horizon's is found within other organisations as well (Nagji & Tuff, 2012). Horizon 2 and 3 are part of the explorative part of the organisation (Explore labs and H2 labs) as it's concerned with radical and disruptive innovation and Horizon one falls within the responsibility of the exploitative organisation (Agile landscape) as it focusses on incremental innovation. This is found to be a common setup in literature especially to account for organisational ambidexterity. A suggestion here is made that the Three Horizon's Model helps as a basis for organising ambidexterity. However, no empirical research was found on the effectiveness of this Three Horizons Model as a basis to organise innovation and is a possible future reseach direction as more firms start to use it.

However beyond the Three Horizons Model ABN AMRO seemed to lack a clear strategy and vision with regards to innovation within their company. A finding that has been confirmed by experts (Soer, 2018; Pubben, 2018; Nas, 2018) whilst having a clear vision has been positively related to the innovativeness of a firm (Hurley & Hult, 1998; Oke, 2004; Martins & Terblanche, 2003), this is certainly an opportunity for improvement. Coolblue and Booking.com even mentioned it to be one of their crucial aspects of their succes (van de Kamp, 2018; Nap, 2018). As a result of this lack of strategy, teams reported to focus on what they believed to be the future, leading to very fragmented and diffused innovation. This this lack of strategy was indicated to be due to the lack of innovation legacy of the case company, as well as the lack knowledge and support of senior management on innovation. Both of these findings extend earlier findings of Oke et al. (2009) that state that not having an innovation legacy or senior management support was a barrier for innovation management. However, having a fragmented and diffused innovation landscape as a result of the lack of vision, is an addition to this literature. This also implies that for financial services firms that also lack innovation legacy, should focus on creating a clear shared vision and goal in order to guide their innovative efforts. In addition to tackle the well known barrier of senior management support and behavior (Nas, 2018; Staes, 2018; van de Ven, 1986), one should focus on getting innovation leaders in senior management roles as one study illustrates; 71% of companies that had an innovation leader saw profit increases (Troman, 2017).

In relation to guidance on innovative efforts, ABN AMRO's corporate innovation facilitates and governs the innovation process for radical innovation, however does not for incremental innovation and has left this to the agile organisation itself. Pubben (2018) mentioned that this is often the case where support leans towards Horizon 2 and 3 and less on Horizon 1. A similar phenomenon was observed by Lenselink (2018) at ING. Whilst not having any governance for incremental innovation is common as was also found in literature (Oke, 2007), it has led to a fragmentation in the way ideas are created, selected and prioritised and managed throughout the entire innovation process of the departmentalised structure of the agile organisation. The lack of governance on H1 innovation has also led to different ways of managing innovation in the single agile organisation, which all don't necessarily alight with eachother. This misalignment and fragmentation complicate coordination and collaboration across teams. In this light, having a governance process for incremental innovation is found to be preferable. Though more research needs to be done into incremental innovation management practices in the financial services sector as only one other report was found on this topic.

In extension to the incremental innovation support is the lack of coaching and training with regards to innovation or more specifically exploration processes for the teams in the agile organisation, whilst they do show willingness and need for it. This directly implies that coaching and training resources should not be underestimated for a large financial services firm willing to become more innovative. However, the most interesting part from this finding is that even in the agile organisation (H1), teams experience a need for more explorative processes and more specifically focused around customer discovery. This suggests that for innovative processes agile as a way of working is not sufficient by itself and confirms the findings by Furr & Dyer (2014). New emerging fields in literature such as Agile User Experience Design also recognise this shortcoming in Agile methods and suggest seperate processes for this that precede agile development sprints (Bhrel, 2015). There's also a perceivable increase in practitioners who experiment with integrating explorative processes into agile ways of working, a process called "dual track agile" (Albrecht, 2015). Booking.com has experienced similar problems with aligning and integrating exploration processes into a single scrum team and they therefore centralised New Product Development and have also found that differently skilled people are needed for that kind of work. This again aligns with van de Ven who stated that existing businesses and their human resources are aimed at defending the core business and not thinking about new ones. This similar finding was also supported by other experts who stated that for H1 different skillsets are needed than for H2 (Nas, 2018; Pubben, 2018; Verhoeven, 2018). No research exists yet what exactly these skills should be in a financial services sector and how that influences the current HR base of traditional financial service firms. Further research is suggested here.

In response to this need for explorative activities without the proper support in response, led in the case company to an increase in the amount of "design sprints" (a fully facilitated exploration cycle stuck in week) that were externally sourced. A downside of this method though was found that design sprints didn't improve the explorative capabilities of the employees, a problem supported by experts as well (Nas, 2018; Pubben, 2018; Soer; 2018). No research exists on the effects of "design sprints" on the explorative capabilities of individuals and further research should be conducted in this area, especially since popularity of this method is reported to increase (Nas, 2018; Pubben, 2018; Soer; 2018). In order to better manage H1 or incremental innovation, the governance and processes should also account for explorative processes. Another view on this might be that there's lack of explorative capabilities within the firm to effectively innovate. This finding contradicts previous research by Das et al. (2017) who found this not to be a barrier, whilst in other research focussed on manufacturing it was found to be a challenge (Aarikka-Stenroos, 2014). A possible explanation for this might be that they focus on radical innovation solely and this research focusses on both radical and incremental innovation. Moreover, incremental innovation is more inclined to satisfy the current customer needs (Norman & Verganti, 2014) and whilst current customer understanding and involvement in financial firms is reported extensively to be lacking by experts, other companies, in literature as well as in the case company (Nas, 2018; Pubben, 2018; Soer, 2018; Didonato, 2018; Langmark, 2018; Vermeulen, 2004), a speculation is done that for incremental innovation, within a

Fig 3-24 "Booking.com employees exploring snowy and frozen terrains"

Booking.com's Mission

During an interview with a Booking.com employee , it became evident that they have a strong mission upon which everyone bases their decision. Furthermore, he stated that no matter who you ask in the building they would be able to tell me their mission, being: "Wherever you want to go, whatever you want to do, you can book it with us". According to van de Kamp, having this clear mission has helped him countless times during the job. In Fig 3-24 you see a snippet of a video made by booking.com, in which fragments of their employees' travels are created to communicat their mission. The video has been viewed over 5 million times!

financial services company, customer centric explorative processes and competences are crucial. Especially since customer centric innovation is certainly proven to have positive effects on a company's' financial performance (Selden & Macmillan, 2006)

As the lack of governance and support for the Agile (horizon 1) organisation was found to be a problem, the interaction between the Horizon 2 organisation and Horizon 1 organisation was not specified either and was also perceived to be a significant barrier. Where many times initiatives from the explorative H2 organisation were rejected once they needed to be implemented into the agile organisation. Other researchers have stated that initiating seperate accellerators and innovation labs would help protect the innovation projects from the challenges in the "exploit" organisation and help achieve organisational ambidexterity (Das et al., 2017; O'Reilly, 1996; van de Ven, 1986). However this finding indicates that whilst removing these projects helps protect them from the exploit organisation it actually complicates the implementation of new initiatives once they eventually have to go back into the exploit organisation, especially if no clear governance or processes exist that specify the interaction between these two parts of the organisation. This implies that companies should heavily focus on clearly defining how new initiatives will be implemented in the existing organisation as implementation has been reported to be a key element of the innovation process (Oke et al, 2009). Das et al. (2017) state that this is due to challenges "such as a restricted mindset, a lack of exploiting new ideas, an unsupportive organizational structure, and inertia caused by (local) systems architecture do hamper further exploitation of [radical] innovations." and the findings in this chapter support their claims, however the next section further extends them to incremental innovations as well.

This problem of innovation rejection does not only happen in the interaction between the exploitative agile landscape and the explorative H2 labs, however also happens in the agile organisation itself. The fact that little room is created for innovation on the backlogs of the teams that work agile is supported by experts (Nas, 2018; Soer, 2018; Pubben, 2018). Even for Booking.com they've found it challenging to work on longer term innovative initiatives as they've found them to disappear or fall off backlogs. This same problem was observed within ABN AMRO. Moreover, reported issues like the the "not-invented-here" syndrome and the risk aversive mindset, also lead to a lack of attention and priority for innovative work. This is also related to the earlier regulatory environment of ABN AMRO which results in a lot of work. Similar problems were found by Vermeulen (2004) and Das et al. (2017) who also find too much risk avoidance and the "not-invented-here-syndrome" to be problematic. In literature part of this rejection problem is attributed to the fact that many times key stakeholders are either not involved or too late in the early phases of product development (Bhrel et al., 2015; Edkins et al., 2013). This implicates that for innovation management adequate attention should be given to the timely inclusion of key stakeholders. Moreover, a risk aversive mindset is generally fueled by traditional processes, traditional managment behavior and too little incentivisation of innovative initiatives. It's therefor recommended for companies struggling with a similar issue to establish processes that undermine risk avoidance and assure that enough effort is put towards innovation.

The above mentioned "not-invented-here-syndrome" also stems from the departmentalised structure of the agile organisation and the organisational siloing related to it. An organisational structure that is unsupportive of innovation has been reported to be a challenge in literature as well (Aarikka-Stenroos, 2014; Vermeulen, 2004). However I argue that the product orientated structure is not a problem itself, financial firms are even known to be more product focussed (Oke, 2007). I believe the problem lies in the fact that due to the product oriented landscape (e.g. functional departments), innovative or customer oriented items and initiatives generally have more dependencies and are thus avoided because of the complicated nature. This problem was also observed within RBS, Didonato (2018) reported that they were experiencing problems with sub-optimal solutions and innovations that narrowly focused on small parts of the entire problem due to their organizational silos. A similar problem was observed within Coolblue, which was according to Nap (2018) was largely accountable to the growing size of the company and the lack of governance.

The proposition here is that due this organisational structure, siloed and narrow innovation will be a consequence of that as the teams will try to avoid dependencies and stakeholders as much as possible Van de Ven (1986) describes this as the challenge of "managing part-whole relationships", however in later work he

states that it's this a characteristic for innovation within large companies where innovation generally leads to "divergent paths of activities by different organizational units" (van de Ven, 1995), and dependencies in large organisation for innovative work are thus inevitable. Further research could focus on the effects of dependencies on the incremental innovative efforts of a firm, as no research has been done in that area.

Multiple experts have also mentioned this to be a general observation within large corporates, who've been built around legacy IT systems which can't be replaced easily (Nas, 2018; Pubben, 2018). Didonato (Head of Corporate Mobile & Transformation at RBS) further confirms this by stating that his dependencies on these old monolithic IT systems are a barrier for his innovative endeavours. This problem was also reported by Vermeulen (2004), who states that constraining IT systems hinder the innovativeness of companies. Moreover, in a recent article in the Dutch financial newspaper "Financieel Dagblad" the statement was made that large banks are held back by their cumbersome IT infrastructure (Betlem, 2018). These systems and the fact that firms organise around them has a conservative effect on the complex nature of the organisation, its stakeholders and dependencies. Traditional financial services firms should therefor not underestimate the support and governance that's needed to facilitate collaboration and coordination that comes with innovation.

As teams continue to innovate in their "silos", they can't be blames as it still falls within the definition of Horizon 1 and incremental innovation which is their responsibility. The definition of Horizon 1 innovation is found to be too broad and does not provide enough guidance within the agile organisation. For an agile organisation the size of ABN AMRO, Horizon 1 innovation for example could both be (1) a collaborative effort of multiple departments that has hundreds of dependencies, or (2) an improvement that comes from a single department and has two dependencies. If presented with this choice, a self-organising and autonomous agile team could, and would logically choose option 2. The point here is that for an effective or diverse portfolio of incremental and Horizon 1 innovation, initiatives should be completed on multiple levels (e.g. team, intra-department, inter-department or even inter-business unit). But before that, a clear description should be formed on what Horizon 1 or incremental innovation means within the context of the firm. Looking at an innovation typology from an organisational structure perspective is therefore a possible future research direction. As also reported in literature, it's beneficial to clearly define and communicate what innovation means within the respective firm in order to avoid confusion and misinterpretation (Troman, 2015)

In review, many of the challenges for innovation management share overlap with each other, are linked a certain way and are difficult to capture in isolation. Moreover, they can also be viewed from multiple angles, if you take the pentathlon framework as a base for example. The challenge of innovation implementation can be attributed to both employee behavior and competences, a lack of governance or maybe even an insufficiently clear vision on innovation. The point here is, that these innovation management challenges can't be attributed to a single element in the entire organisation, but rather are a consequence of many contextual settings.Though almost all

of the challenges are based or related to a human element; the way people behave, the way the act, and what they do and thus has much to do with the organisational culture. Organisational culture is generally seen as a key determinant for a companies' innovativeness (Martins & Terblance, 2004; Valencia et al., 2010), however is also many times seen as a key barrier for innovation (Vermeulen, 2004; Oke, 2007). As van de Ven puts it, the challenge is building an infrastructure that is conductive of such an innovative culture. Just as with the pentathlon-framework for innovation, as well as the sport, in order to do that well; you'll have to perform well on all of these areas rather than being outstanding in one area alone (Oke, 2007). Any firm that encounters challenges with innovation management should see these problems in a holistic fashion rather than focussing on just solving a single one of these issues very thoroughly.

3.5.2   Validity & Limitations
Firstly a total of 18 interviews were held with innovation stakeholders from a range of departments. This helped in illuminating the subject and topic from different perspectives. The departments which are core to innovation management within ABN AMRO were selected based on exploratory conversations to increase the breadth of coverage of "innovation management" within the organisation. All of the interviews were organised, facilitated, and recorded (by me). To improve the findings' validity, different stakeholders helped in the clustering and processing of the quotes and insight cards. To further improve on the findings' external validity, the results of 3 expert interviews, 2 expert lectures and 3 company interviews served as a basis for comparison of the results of the findings. Additionally, the results were also compared with findings from literature to further increase validity.

There are limitations to the study as all the interviews were done by a single individual (being me). The selection of the insights and quotes is prone to researcher bias, however these have been attempted to be mitigated as much as possible. As a reference, all interview summaries are found in Appendix N, all interview recordings can be retrieved via request. Additionally, no interviews were held with employees from the sales organisation, as they're not seen as a critical contributor to "innovation management" within the context of ABN AMRO, and the scope was limited to those working in (new) product development. The external case company interviews (e.g. coolblue, RBS, Booking.com) were conducted with a single person in the organisation and are in no way representative of the entire case organisation. However the main purpose wasn't to create cases out of them, the findings were merely used as support mechanisms for the findings in this study. Moreover, the selection of these companies and experts was done based on an opportunistic approach (Sanders & Stappers, 2012), and therefore limit the extendability of the findings. The research has also been performed within the context of ABN AMRO and the findings therefore hold most validity in that context. Through the found overlap with other companies in the financial services sectors and even beyond that, it's posited that these findings are to a limited extend transferable to other large corporates, especially those in financial services. However, it's important to note that it was never a main purpose to produce transferable results as these findings served as input for further analysis in this thesis.

3.6 Conclusion

Whilst financial services firms are increasingly pressured by external threats, they struggle to manage innovation in a way that allows them to keep up with rising competition. In order for them to improve their innovative efforts, they first need to comprehend and solve the challenges they face internally when it comes to managing innovation. The goal of the study in this chapter was to understand the efforts and challenges regarding innovation management within the case company ABN AMRO, whilst also expanding the currently sparse literature on this topic. Through the analysis of 17 semi structured interview and internal documents, ABN AMRO's innovation management efforts were uncovered together with six challenge areas; lack of clear company vision and focus on innovation, organisational politics and management, "deficiency in skills, mindset, and support needed for innovation", trying to get (any) innovation onto a full backlog, lack of governance and guidance on innovation processes, and siloed innovation. External interviews with three experts, three representatives of other companies, and two expert lectures further helped in establishing validity in the findings. The findings are to a limited extend replicable to other industries, however one should note that findings are heavily influenced by the single case study design. Most of the findings in this chapter have found grounding in existing literature on innovation management, with adding or shedding new light in some areas as well.

ABN AMRO was found to use the Three Horizons of Growth model as a basis for organising innovation across their entire organisation. This model seems to gain popularity in other organisations as well. The rise in popularity might be because this model ensures that companies innovate on multiple levels (e.g. radical and incremental) simultaneously, and helps in establishing organisational ambidexterity needed to survive competitive environments.

A lack of explorative skills was found to be a significant problem, especially for incremental innovation and extends existing literature on innovation within large financial firms have found it to be irrelevant for radical innovation. Where generally for incremental innovation customer understanding and involvement is crucial, it was found that employees lacked customer exploration/discovery skills. In addition, agile methods and practices are found not to be sufficient for managing the entire innovation processes, as they lack support for these explorative phases.

Using an innovation lab or seperate accelerator for (radical) innovation initiatives might help in protecting and developing them, however they do later on complicate the implementation into the existing firm when they need to be build. This problem wasn't limited to radical and externally developed solutions alone, incremental innovations (that come from within the "exploitative" or H1 organisation) interestingly face similar issues. Incremental initiatives that have a complex set of dependencies and stakeholders due to organisational structures are either avoided or face more difficulty being realised as they're faced with the "not-invented-here syndrome" and "organisational silos". These findings extend literature as it indicates that regardless of the innovation type, the implementation challenge is related to the complexity of dependencies and behavior of the stakeholder landscape.

Many of these challenges touch upon a human element and are related to a firm's core; it's culture, through which the challenges are connected and linked and thus can't be viewed in isolation. The challenge for innovation management is managing it as a whole, from exploration to exploitation, and from top to bottom, creating a system that permeates a culture of innovation, rather than managing elements with an "innovation" label on them. In respect to the ambidexterity discussion, where innovation for both exploitation and exploration discussion is crucial for survival, so is the creation and actual implementation of the innovations.

3.6.1 Implications

In order to compensate for the lack of exploration capabilities especially for incremental innovation (which generally is the largest part of the organisation), appropriate resources and processes are needed in order to assure these skills are trained. These efforts should more particularly be focussed towards customer centric exploration.

Large financial firms should also consider creating a clear governance for

incremental innovation management in order to avoid fragmentation and diffusion. Also keeping in mind that in order to better manage H1 or incremental innovation, the governance and processes should also account for explorative processes,

In addition, clearly defining processes or governance on how new initiatives will be implemented in the existing organisation is crucial, as implementation has been reported to be a key element as well a big challenge for innovation. Adequate attention should be given to the timely inclusion of key stakeholders as a part of this.

A recommendation for large financial services firms who struggling with a similar issues as those mentioned above is to reassess their current processes and governances that stimulate risk avoidance or other behavior that fuels a restrictive mindset. Traditional financial services firms should not underestimate the support and governance that's needed to facilitate collaboration and coordination that comes with innovation in order to overcome their unsupportive organisational structure and IT landscape.

Any firm that encounters challenges with innovation management should see these problems in a holistic fashion rather than for example managing innovation specifically per innovation type (e.g. radical versus incremental) and without proper integration of these management processes.

3.6.2 Future research

As the Three Horizons Model is gaining popularity, empirical research is suggested on the effectiveness of this Three Horizons Model as a basis for organising innovation.

Whilst the integration and implementation of radical and incremental innovations proves to be a significant challenge (e.g. going from exploration into exploitation), future research could more specifically focus on how other companies handle the interplay of exploration and exploitation.

As the IT legacy and the organisational structure of a large financial services firm generally results in many dependencies and stakeholders for innovative initiatives, it would be interesting to see the effects of these dependencies on the incremental innovative efforts of a firm, as no research has been done in that area before.

Whilst explorative competences are crucial for innovation, currently little is known about how these skills translate into the context of the financial services sector, especially with regards to customer driven innovation. Future research could focus on what these exact skills are and what the current challenges are for large financial services firms in retrieving those competences.

Some more future research opportunities emerged during the research, also based on my observations. Firstly, horizon 1 innovation and both incremental innovation were found not to suffice the size of the case organisation and should be defined more specifically to cover all possibilities within an organisation of this size (e.g. within department, cross department, etc.). Looking at an innovation typology from an organisational structure perspective is therefore a possible future research direction. Secondly, during the research, an observation was made that companies like Coolblue and Booking.com all of their employees are in-house, whereas larger companies rely on many outsourced employees. An interesting future direction would be to investigate the effects of outsourced vs. in-house employees on the overall innovativeness of a firm.

3.6.3 Decisions for solution development

For the further development of a solution, Horizon 3 will be left out of scope as this is organised separately. Also Horizon 3 is still performed at relatively small scale and wasn't found to be directly related to the Agile Landscape.

Interaction with "H2 Labs" is crucial, however they've been found to receive plenty of support from ABN AMRO's corporate innovation office. There is virtually no support for innovation management within ABN AMRO for the agile organisation, therefore the solution will further focus on innovation within this grid landscape, whilst still fitting within the existing solutions, processes and support for H2 innovation.

Fig 3-25 "Pacman Room"

IV Define

4.1 Defining Challenges

So far we've looked at the challenges within ABN AMRO's large scale agile organisation as well as the challenges for innovation management bank-wide. The results from these two studies can both be used to find out where they overlap and eventually what the challenges are for managing innovation within a large scale agile landscape. The way this is approached is through combining and clustering the challenges from the two previous chapter (See Fig 4-1). All of the challenges that came from this clustering can be found in Table 4-2 with their underlying challenges. However, another goal of the thesis was to help ABN AMRO with their innovation management efforts, therefor we use these challenges as a basis for redefining the problem statement and subsequently to define a design challenge. The challenges will be viewed in the context of ABN AMRO. In chapter 7 of this thesis, a broader discussion will be done based on the overall challenges.

Input

17 Challenges
Large Scale Tailored Agile organisation

17 Challenges
Innovation Management

Challenge Processing

Challenge Clustering

Challenge Validation

Generative Workshop

Outcome
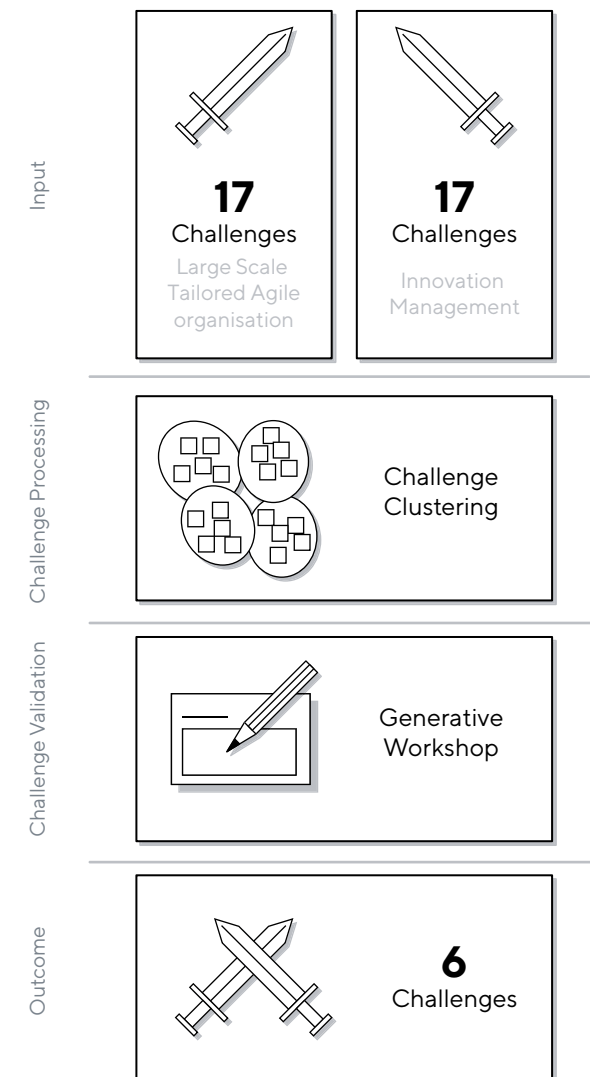
6 Challenges

Fig 4-1 "Combing Challenges"
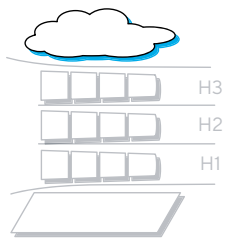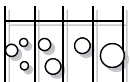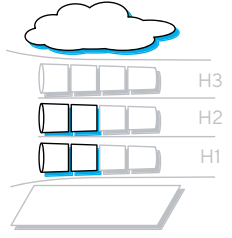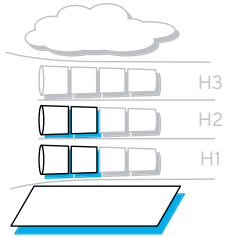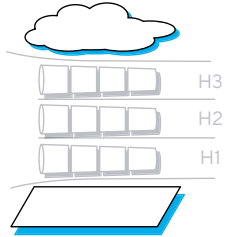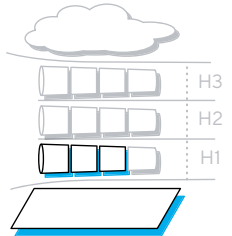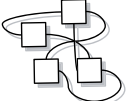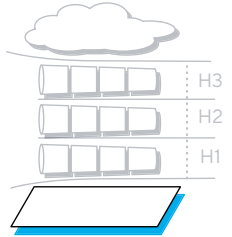
Challenges	location in innovation management framework	Underlying Challenges
Lack of Clear Guidance & Leadership on Innovation	H3 / H2 / H1	• Senior Management Behaviour • Company vision and focus on innovation • Lack of clear vision & Leadership • Lack of awareness and commitment Senior Management • Short-term focus • Linking Strategy to Execution • Incremental focus on innovation
Lack of Governance for Innovation in the Agile Organisation	H3 / H2 / H1	• Lack of governance on innovation in the grid landscape • Interaction H2 labs and Grid landscape unclear • Interaction between VPB's and VDB's unclear • Misalignment exploration & scrum • Fragmentation of innovation
Deficiency of Skills & Knowledge for Succesful Innovation	H3 / H2 / H1	• Outsourcing Innovation • Deficiency of skills for digital innovation • Deficiency of customer insight and experience skills • Shortage of coaching support • Lack of Skills & Capabilities in grid
Organisational & Cultural Legacy	H3 / H2 / H1	• Mismatch Agile & Traditional Processes • Traditional Culture, Mindset and Behavior Persistent • Organisational Politics & Competitiveness • Misalignment Business & IT • Cultural and Mindset Legacy
Getting Innovation on the Backlog	H3 / H2 / H1	• Full Backlogs • Hard to get priority on backlog for innovation • Backlog Competition • Regulatory environment is demanding
Dependencies & Limited Autonomy	H3 / H2 / H1	• Organisational Silos and Narrow innovation scope • Outsourcing IT • Complex Stakeholder Field & Dependencies • Product & System oriented organisation

Table 4-2 "Challenges Overview"

Lack of Clear Guidance & Leadership on Innovation

Within ABN AMRO a strong vision and strategy on innovation are lacking. Similarly it lacks true leaders that radiate and inspire others to follow the set vision. Traditionally senior managers weren't expected to have a strong vision on the future and this shows in their struggle to define one. Being a large traditional bank that's publicly traded doesn't help in establishing a strong stance on innovation and the uncertainty of their environment. ABN AMRO has a history in optimising shareholder value, being focussed on short-term returns as well as efficiency and cost reductions. A short-term and risk-aversive mindset has always been the standard within ABN AMRO and even for senior management, letting go of this traditional mindset proves challenging. This organisational legacy translates itself in a very incrementally focussed organisation, with little space and room for more risk bearing initiatives. An example would be the pure incremental focus of the strategic topics (saga's) senior management has prioritised. Next to that, the traditional top-down mindset which is still persistent amongst senior managers causes friction with teams that work (via a bottom up fashion) in the agile landscape, as there are still plenty of examples of requests from senior managers that carry both a deadline and quality measures. Moreover, the lack of a clear stance on innovation and where the company wants to take it, ultimately impacts the quality of guidance and direction that employees feel within the agile organisation. There are for example innovation challenges that focus on risk management as a service all the way up to financial proposition for kid's savings (and more random variations in between). This lack of guidance perceived by many employees makes it difficult to prioritise based on clear boundaries and thus teams prioritise based on what's either told to them or according to their individual visions. Where fragmented visions and strategies on a grid and block level eventually complicate collaboration and coordination of initiatives that need priority on multiple teams' backlogs to be realised. Evenmore, this disconnect and widening gap between the company-wide strategy and the work that's executed subsequently leads to to lack of focus and extremely diffused efforts in the daily work of agile grids and blocks.

Let's do the backlog first

in a recent blog from a management team an interesting and contradictory statement was made, which clearly indicated disagreement in the mangement team of a particular part of the business. The blog clearly indicated that during the Management Team meeting progressive statements were made that more focus should be put towards Horizon 2 innovation and innovation within the grids itself. The blog however finishes with one of the MT members positing the questions during the meeting "shouldn't we just focus on what's in the backlogs first and make sure that goes smoothly".

"I have a clear vision on my small puzzle piece, what we have to do and I'm working hard to get there. However, many other teams will have the same. The question is whether these small puzzle pieces will fit together eventually or rather result in a big chaos so we actually end up working towards nothing.."

Product Owner Value Proposition Block

Lack of Governance for innovation in the agile organisation

From the outset of the Fast Forward reorganisation much focus was put into the grid landscape and the design of the blocks. A heavy emphasis was put on the Scrum framework as a way of working and considerable attention was given to the Value Delivery Blocks (mainly IT), who were seen as the ones responsible for an entire piece of change such as building a new feature for online banking. In the design, and later admitted by those involved in the design, much less attention was given to "innovation" and the management of it within the landscape. Less focus on how are we determining the features and products these teams are going to build. ABN AMRO's corporate innovation office withdrew themselves in the discussion of the grid landscape design and also due to political reasons Horizon 1 innovation was placed as a responsibility within the agile landscape. This decision and lack of attention for organising processes, structures and governance around innovation in this grid landscape has led to the fact that innovation even within the agile grid landscape is fragmented (See examples on the right). The grid Apps & Digital Innovation, take responsibility of digital innovation efforts, while in another grid "Customer Interaction, Enabling and Digitisation" people are also working on digitally innovative technologies and propositions. Each of these grids have a completely different take on how to manage and approach innovation. Evenmore different grids and blocks have been experiencing difficulty with integrating explorative processes and aligning/defining the way of working for Value Proposition Blocks (mainly business, responsible for new value propositions) with the generally recommended Scrum or Kanban methodologies. In hindsight, people involved in the design of the grid landscape stated that this interaction between these two teams and the way of working for the VPBs lacked depth and description. Moreover, due to the fact that group innovation wasn't involved in the design of the grid landscape, no interaction and governance existed on how Horizon 2 innovation would be handled. This lack of involvement of these stakeholders is reflected in the different definitions of innovations; where in the grid landscape the term value propositions was utilised, whereas on the other hand group innovation is pushing their Three Horizons model for innovation as a definition. In sum, the general lack of governance and processes in the grid landscape is currently leading to further fragmentation of innovation and the approaches to it. Next to that the organisation is still struggling with finding optimal ways to let explorative processes align with the agile scrum way of working.

"We're trying out the double diamond model"

"We're implementing design thinking"

"We're just trying stuff"
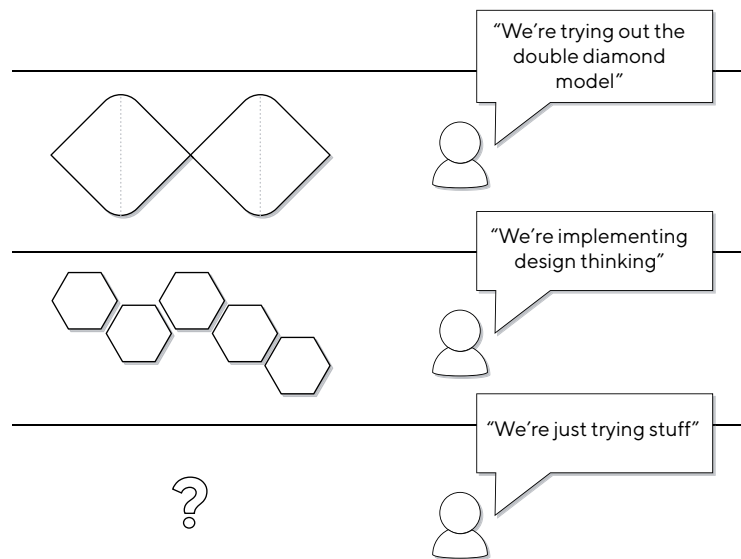
Fig 4-3 "Different ways of approaching innovation"

Grid's Own Initiatives

(1) Within the Grid Savings & Deposits, they were struggling with how to organise innovation. In response, the Product Owners initialised the idea to work with an Intranet page on which all team member could submit ideas. Based on votes, these ideas could be pitched during the grid sync to get to work on them. Another way he wanted to cover innovation is by doing an "innovation"-sprint once every seven weeks, so that during that week only new ideas were created.

(2) The Grid responsible for Mortgages and Housing decided to do a "Design Thinking" implementation with a heavy focus on customer empathy and problem finding. Where in the grid responsible for Apps & Digital Innovation they only recently started to work according to the Double Diamond Design method as a process for innovation (See Fig. 4-3).

Deficiency of skills & Knowledge for Successful innovation

As a traditional bank ABN AMRO had always less to do with "innovation". Now however, with the growing threats of competition especially from the digital realm, ABN AMRO needs to grow and acquire new skills and knowledge to keep up with the latest trends, developments and even standards in banking. In the large scale agile landscape of ABN AMRO, their scope was limited to business and IT departments, marketing and customer experience departments however were left out of scope. This firstly leads to the fact that with only business (product managers, process managers, project managers) and IT in the landscape, capabilities and skills for true customer understanding are lacking. Whilst many of the people that traditionally came from business said to understand the customer needs and have the knowledge and skills to collect them, they later found that they are either unable or unwilling to do so. This is logical considering their history, where traditional marketing departments would steer employees away from talking to the customer. Still to this day however much of the customer and market research of marketing departments comes from external sources in a compressed powerpoint format. Talking to the real customer is something that isn't done. As a consequence, you see that ABN AMRO has a shortage of skills that focus on true customer understanding and discover, think of roles like User Experience designers. Evenmore, a deficiency not only exist for customer experience capabilities, but also for innovation in general, people who are comfortable with the fuzziness of the front-end and explorative phases of innovation., for example people who facilitate those creative and innovaive processes, especially on incremental innovation. The problem also in overlap with the previous challenge, lies in the fact that there is no clear governance on Horizon 1 innovation. The fact that there is no support available for these innovation processes in the large scale agile landscape further complicates this issue. With the lack of skills on innovative processes and customer insight (which is perceived to be crucial to incremental innovation), with in addition no support to guide and support these processes lead to a gap of knowledge and capabilities to successfully innovate incrementally. A reflex by many of the grids and block is to buy "Design Sprints" externally. In addition, due to historical outsourcing of most of their IT personnel, they have very little digital and IT capabilities of their own. IT was never a core capability of a bank and only recently banks have started to realise that it needs to be a core capability for their survival. A deficiency not only exist for IT capabilities but also for innovation in general, people who are comfortable with the fuzziness of the front-end and explorative phases of innovation. Think of people who can facilitate those processes and also designers (UX and UI) for example.

We Need UX'ers!

During the research, I met with a UX designer from the Mobile, Internet and Design grid who was working temporarily for the Mortgage grid on a new screens for the mobile webpage. Whilst showing me through the examples screens of the proposition (confidential), he talked about the fact that he was literally pulled from grid to grid as there was a big shortage of designers. He mentioned to me he was doing both UI and UX design whilst he was originally schooled for visual design (See Fig 4-4).
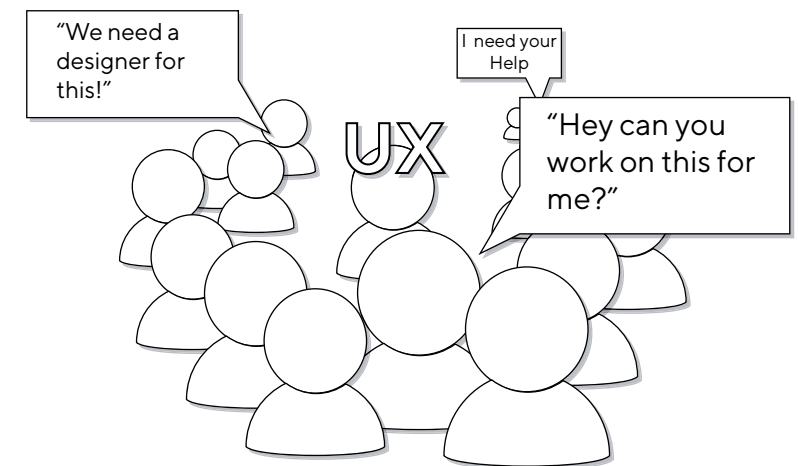

"We need a designer for this!"

I need your Help

"Hey can you work on this for me?"

UX

Fig 4-4 "UXers needed"

Organisational & Cultural Legacy

As more traditional corporates move to agile ways of working, increasingly companies are realising that they're held back by things from the past. Whether, processes, culture, mindset or organisational forms that are "worn" into the firm, they are all significant blockers in attempting to achieve change within the current company. Either consciously or unconsciously, people fall back into their behavioral patterns. On multiple fronts agile ways of working don't align with processes from the traditional company. One example already mentioned is the top down approach of senior managers, whilst agile propagates a bottom up approach. Next to that, traditional award systems work against the collaborative focus of agile methods. Employees get rewarded for their individual, short-term performances. Next to that innovativeness or the effort put towards is not part of the performance reviews. There are no incentives to work on longer term items within the grid landscape, and due to Scrum sprints, items that don't fit well in a sprint generally all of the backlog, which is the case most of the times for innovative items.

Moreover, one can imagine that employees who've worked at a company for over 10 maybe even 20 or 30 years, changing their way of working and mindset doesn't happen in a day. The traditional culture is still very much perceivable, with earlier mentioned traditional behavior by senior managers, a risk aversive mindset, and a blamish approach to problem solving. This is further reflected in the way the grid landscape is designed. Many concessions were made on a political ground, where logical choices were replaced with irrational ones because of ego's and protectiveness of people in key positions that were unwilling to give up their "pride", meaning their departments in exchange for a better outcome for the entire bank. Additionally, organisational legacy has made it difficult to fully integrate the "business" (e.g. product managers, project managers, process managers) into the IT organisation as they both fall within their own hierarchical line. The decision was made to keep to separate hierarchies and organisations (whilst they do merge in the agile grid landscape) on both political and practical reasons. The danger existed that if the IT organisation would be fully merged with the business, IT would be overshadowed and neglected to the the deficiency of IT knowledge within the business.

....

LIttle Kingdoms

Vhilst talking to employees from the Consumer Credits grid who take care of for example personal loans, they talked about the illogical organisation of their development capacity. As a grid which is considered relatively big only has two teams who can develop and actually build software. This is because the systems on which they work fall under the responsibility of Commercial Banking (Grid Corporate Credits) and during the transformation all of this software development capacity stayed put under Corporate Credits' their ownership. This organisational design is, as stated by the employees, very illogical and is holding them back in developing new propositions. You could compare it to a central castle where all the resources are stored and kept for the king (Fig. 4-5).
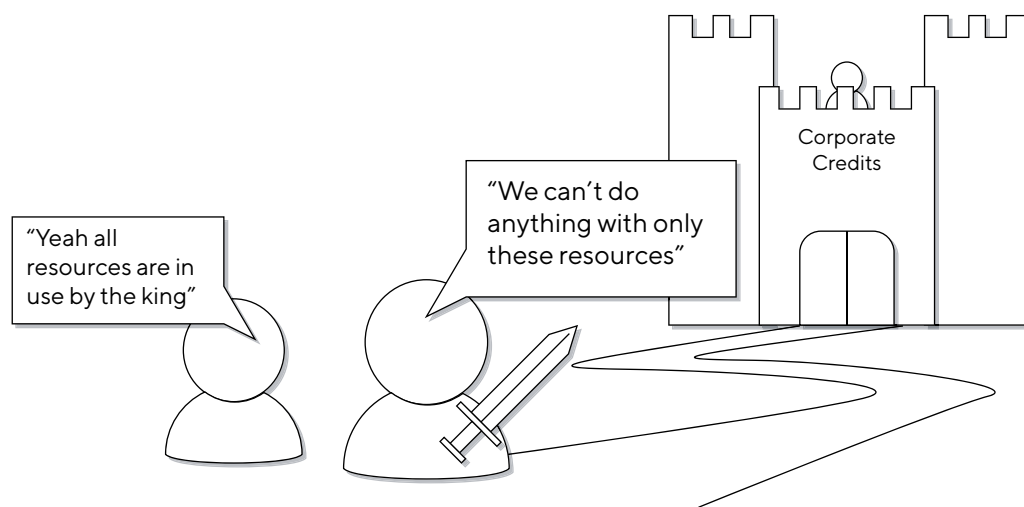
Fig 4-5 "Illogical division of resources"

Getting innovation on the backlog

As a large enterprise in the financial services sector, ABN AMRO as any other large bank is influenced by their regulatory environment. A lot of work comes from the regulatory demands, such as complying with GDPR, in order to avoid high fines or even the danger of lose a banking license. Additionally, traditional top down behavior of senior management as mentioned before adds to the already large stack of work that needs to be done. Evenmore, many updates, fixes and IT related work, which isn't necessarily concerned with "innovation" also cover a large part of the backlogs of teams. These full backlogs largely filled with mandatory items either from regulators, superiors or simply to keep systems running leave little room and space for innovation. Generally if new items find their way onto a sprint planning or a higher priority, they come from within the grid or teams themselves. Whenever items or requests come in from different parts of the organisations (e.g. other grids, business lines), this work generally gets deflected to the bottom of the backlog and suffers from the "not-Invented-here-syndrome". These phenomenons make it tremendously difficult to get innovation on the backlog, especially if that backlog isn't yours. This problem would be improved lightly only if clear boundaries and strategies existed to which each team need to prioritise their work. However due to a lack of a strong vision and strategy, many POs and grids prioritise their work based on what contributes to their vision. In general innovations, aimed at solving customer problems touch upon a multitude of systems and subsequently needs priority on many different backlogs to realise it. These dependencies and the limitation of autonomy will be further discussed in the next challenge.

....

Nice concept, we'll take over.

A PO from the Insurance Grid created a concept for a new value proposition related to packaged insurances, using multiple design sprints. However this proposition was dependent on two other grids. In attempt to implement and realise her idea she inquired with the grids she needed. Immediately, the other grids became defensive and decided to do some more design sprints to further develop the idea (both of the grids). Now a couple months later, the initial idea has been changed multiple times, by different grids and still nothing has been actually built yet (See Fig 4-6)
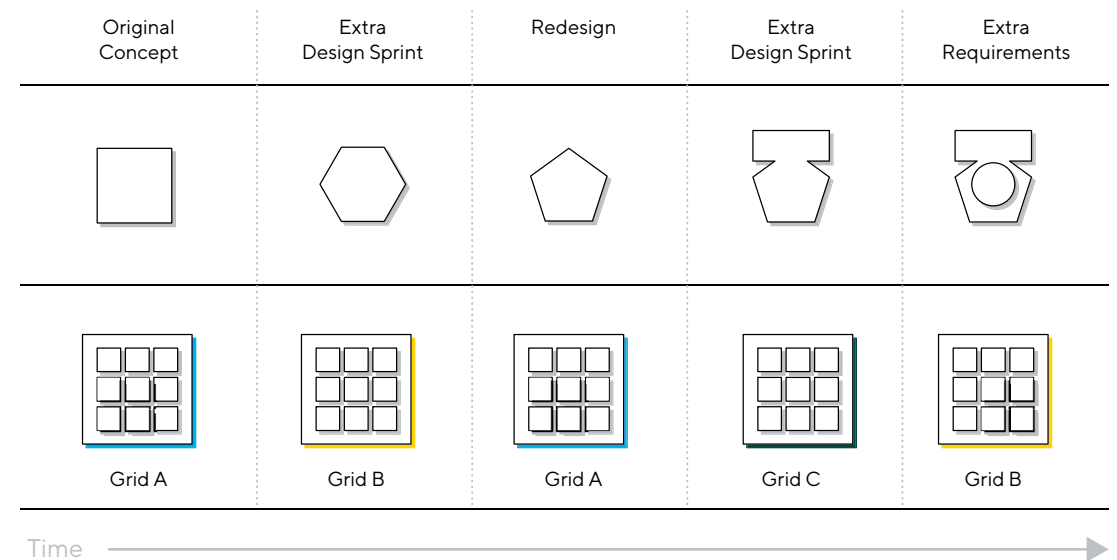
Original Concept	Extra Design Sprint	Redesign	Extra Design Sprint	Extra Requirements

Grid A	Grid B	Grid A	Grid C	Grid B

Time ⟶

Fig 4-6 "Changing concepts"

Dependencies & Limited Autonomy

Traditional Corporates have the problem of IT legacy. They've been built around monolithic IT systems and as years have passed new systems, subsystems, and links have been created to have finally come to a giant structure of systems, interfaces, subsystems and solution that can't be captured in one visual and of which not a single person understands all. Over the years teams at ABN AMRO have been organised around these systems and subsequently became experts in that specific system. Now with the transformation to the agile landscape an attempt was made to make grids and blocks end-to-end responsible. Since these systems and IT teams that were organised around them could be pulled apart, the decision was made to spread responsibility of these systems over the entire landscape. In addition, the Grid owners and Product Owners all became responsible (Profit and Loss even) for their part of the chain. However, this led to tremendous siloing of the organisation, where if any change needs to happen, a priori multiple systems (and thus backlogs and teams) are needed to build within them. This system and product orientation of the landscape results in a very complex stakeholder and dependency, landscape. Especially whenever new innovations, that flow from customer experiences for example, need to be realised in this landscape as for each change in the customer experience multiple systems will need to be adjusted. Whilst an opportunity would be to re-train personnel to work across multiple systems, which would be an unrealistic goal and stupidly large investment, there's still the issue that a lot of systems and the maintenance of them is outsourced to third party vendors, meaning they're dependent on those third parties. The entire design of the grid structures and landscape leads to limited autonomy and complicates the integration of new initiatives. The complex landscape and the fact that Grids are deemed responsible for their "piece" of the entire end-to-end stream, result in suboptimal solutions that improve "part of the entire stream". It could be seen as a coping mechanism to exclude the difficulties of interacting and aligning with different grids to bring about larger changes (which is perceived to be complex) and mainly focus on innovations and improvements that can be built within the autonomy of the grid. Alltogether this leads to fragmented, suboptimal and narrowly focussed innovations that miss the opportunities of innovating over entire streams or customer journeys of which they are part.
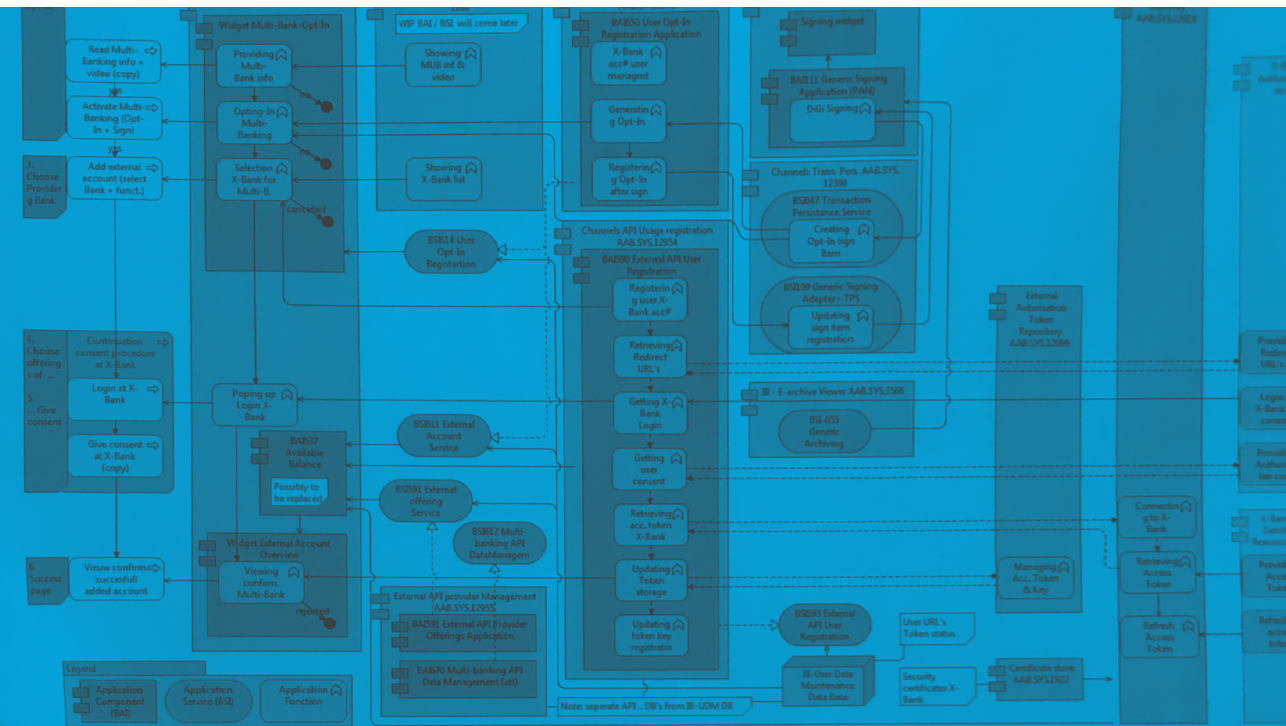
Welcome to the maze
Whilst walking through the office I noticed an IT architecture mapping which was linked to specific steps in a login procedure of Multi Banking (being able to view and manage your accounts from different banks in one place. For a simple login procedure more than a dozen IT systems were used and these systems' responsibility was shared over multiple grids (see Fig 4-7). Within these grids there are different teams with different products owners that all have their own backlog and work on these systems. It's like a maze of systems and teams that you'll have to traverse.

Fig 4-7 "Maze of systems"

4.2 Generative Workshop

To add another layer of validation to the 6 challenges a workshop was organised together with employees from the grid landscape. Up until this point only data was collected based on interviews and observation. However based on research from Sanders & Stappers (2012), in order to get to the real needs of the users, different ways of data collection are required (see Fig. 4-8). In order to find tacit and latent needs of the ABN AMRO employees, generative sessions could help in doing so. Generative session in this case are sessions (e.g. workshops or meetings) in which ideas or concepts are created.
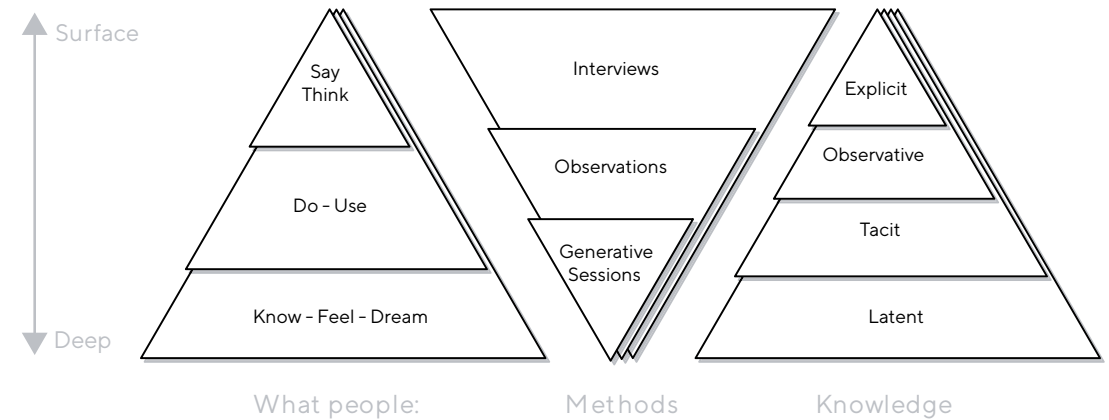
Fig 4-8 "Different abstractions of knowledge" adapted from Sanders & Stappers (2012)

4.2.1 Method

A workshop format was chosen for the generative session that took a total of two hours with "innovation in the grid landscape" as a topic. As a base for this workshop "the path of expression"-method by Sanders and Stappers (2012) was utilised (see Figure 4-9). Participants need to be prepared for these sessions to make sure deeper levels of understanding can be achieved of their needs, this process is called "sensitisation". A total of five participants joined the workshop, which were all part of the grid landscape and are involved with the creation or management of innovations. As ABN AMRO employees are time-poor, sensitising questions about their current experiences with innovation were sent to the participants starting a week in advance of the workshop, with more questions sent to them in between. These questions were focussed on their current perceptions and the "now", during the workshop the participants were guided through past experiences and used that as a context to dream about the future. From that point, solutions and ideas were created that served as a stepping stone to their future. See Appendix P for the entire workshop plan. During the workshop clusters and ideas around them were created and served as a basis for analysis, which will be discussed in the next section.
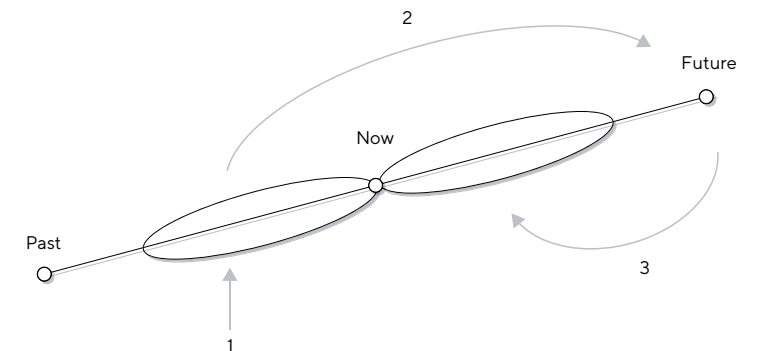
Fig 4-9 "Path of expression" adapted from Sanders & Stappers (2012)

4.2.2 Results

During the workshop the participants were asked to write down associations with innovation in the grid landscape currently and with ABN AMRO in the past on post-it notes. These notes were clustered onto a 2x2 matrix (x-axis: negative vs. positive, ,y-axis: bank wide vs. individual). A total of twelve clusters resulted out of this, where the clusters "old culture", competencies, management, and organisation of the grid were seen as the most important clusters for innovation.

The workshop finished with the participant creating ideas around a "how-to" question that centered around the prioritised clusters. The participants created ideas that reflected their desired solution. Interestingly, three main themes could be distinguished across all the ideas the participants made:

- Organise around customer journeys and value streams
- Gather external information and knowledge (e.g. partnerships, customer interviews)
- Rotating and exchanging skills

The full results to the workshop can be found in Appendix Q.

4.2.3 Conclusion

The clusters from the workshop matrix were compared and matched with the six challenges defined earlier (See figure 4-10). Interestingly there were several clusters that could directly be linked to the six challenges such as the cluster "competencies" and the challenge "deficiency of knowledge and skills for innovation". Some challenges however could be linked to multiple clusters such as "organisational and cultural legacy" which is linked to "behaviour and attitude" as well as "traditional culture". In sum all of the six challenges found in the research were represented in the mapping and no new ones were found that were seen as critical for innovation" in the grid landscape.

The findings of the workshop (e.g. clusters and ideas) together with the existing challenges served as the basis for defining underlying values and needs of the grid employees. These values are the basis for further ideation and solution finding. These values are represented table 4-11 with examples from the workshop or the challenges

Altogether, the workshop results align with the results from the research in the agile grid landscape as well as innovation management within ABN AMRO. All of these findings together were used to define underlying values which will serve as input for the design challenge. The problem definition and design challenge will be discussed next.

Fig 4-10 "Challenges Matched with workshop results"
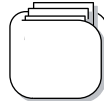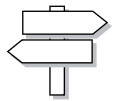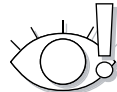
Value		Examples
	Recognition/Appraisal	• "Blaming Culture" (afrekencultuur) as a cluster during the workshop. • "Organisational and cultural legacy" – one of the six challenges. Specifically the fear of failure and the historical treatment of them.
	Ownership/ Possession	• Backlogs who are literally owned by Product Owners, however also tasks which get shuffled around. See example below. • "Not invented here- syndrome" – as an example from multiple interviewees
	Autonomy/Independency	• "How might we make Product Owners less dependent on each other?" – a how might we statement from the workshop • "Dependencies and limited autonomy" – one of the six challenges.
	Guidance	• "How might we design a governance for grids vs. business [lines]?" – a how might we statement from the workshop • "Lack of governance on H1 innovation" – one of the six challenges
	Awareness	• Compulsory client contact" – as an idea from the workshop. • "Partnering" – as a cluster from the workshop. • Lack of customer insight which was mentioned by multiple interviewees.

Table 4-11 "Values with examples"

4.3   Problem Definition & Design Challenge

The previous chapters of this report were all about exploration and problem finding. This section seeks to summarise the most important parts of it and merge them into a problem definition for innovation management within ABN AMRO and a design challenge that subsequently aligns with that problem definition.
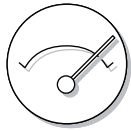
Improve Customer Experience   Deliver Faster   Innovate & Grow
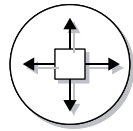
Three of ABN AMRO's strategic pillars are depicted above. A first step towards delivering faster was made by doing the agile Fast Forward transformation. And the growth and support from ABN AMRO's group innovation is helping on the "innovate & grow" part as well. It is argued that that all three strategic pillars are connected to ABN AMRO's innovation management efforts. Where "Deliver Faster" says something about the speed of the innovation, "innovate & grow" is related to the type of innovation(e.g. new products and services), and "improve customer experience" states the focus of innovation for the new or existing products and services. However, six challenges are found within the agile grid landscape specifically that withhold them from actually becoming faster to the market, more innovative, and customer centric. Especially for the Agile organisation that mainly focusses on Horizon 1 innovation (incremental), human or customer centricity is crucial (Norman & Verganti, 2014). So in order to succeed on their three strategic pillars, ABN AMRO should focus on growing their customer centric capabilities.

A principle that's part of Design Thinking neatly captures part of these problems, and helps in the description of the problem. Recenlty, Design Thinking has been gaining attention as an approach to innovation management. Companies such as Pesico and IBM use Design Thinking to improve their innovation efforts (Ignatius, 2015; Hamm, 2016). And even consultancies like Deloitte and Accenture are acquiring design agencies. It's generally described as a problem solving approach to innovation, however in a detailed sense it's described as a multidisciplinary, human-centred approach to innovation, inspired by the ways designers think and work (Brown, 2009). According to Brown (2009), from a design thinking perspective, innovation exists out of three components; human (is it desirable?), business (is it viable?), and technical (is it feasible?). He argues that true innovation has a balance between these three components, however always starts with human desirability. Figure 4-12, visualises this principle that helps in the description of the problem and examples can be found in Table 4-13.
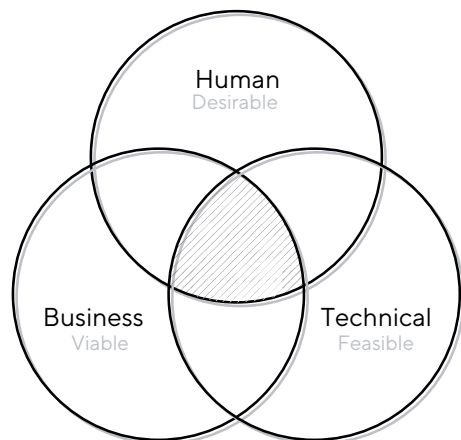
Fig 4-12 "Three key components of innovation"

Desirable	Viable	Feasible	Example
	💵	⚙	*Pepsi once released a clear variant of their drink called Pepsi crystal. In an attempt to appeal to the emerging "health and fitness" market, it actually was a flop. People were confused as the drink didn't taste like pepsi and felt very unnatural.*
❤		⚙	*Snapchat is a great example of a company that didn't account for their viability. Whilst they're still alive in the present, they have been struggling to find a viable business model. Whilst people like the sharing of temporary photos and is technically higly feasible, they overlooked the part of making money off of it.*
❤	💵		*Teleportation is an example of where businesses could make money through selling it like any other transportation company, and it certainly would save a lot of time for people, however currently it's just not technically feasible.*
❤	💵	⚙	*We all know Bolletje, the brand that makes "beschuit". After many frustrated customers and broken "beschuiten" because they couldn't get it out of the package, Bolletje made an indent that made it easier to remove "Beschuitjes", used less "beschuit" due to the indent and could easily be fixed by changing the moulds.*

Table 4-13 "Examples for innovations lacking one of three components"

However, as seen in in our research, the human component is something that's lacking within ABN AMRO's grid landscape since it has a deficiency of skills within that area. This leads to the creation of ideas that are heavily focussed on the technical and business components of innovation. Which is a logical consequence of the scope of the transformation which only included traditional business (e.g. product managers and business developers) and IT (software engineers and architects)(See Fig 4-14.

Moreover, because the IT and organisational landscape is so complex and employees were educated very specifically, the grid landscape had to be oriented towards products and systems. This orientation results in many interdependencies between grids and blocks. These interdependencies and complex IT processes lead to a lot of time waste. Especially for new propositions or ideas based on customer needs, for which is known that they generally involve multiple products/grids. This complicates and discourages the creation and realisation of these types of innovation.

Fig 4-14 "Scope of transformation"

Out of Scope Grid Landscape

Marketing & Customer Experience not in Agile Organisation

In Scope Grid Landscape

Business Departments Now Value Proposition Blocks

In Scope Grid Landscape

IT Departments Now Value Delivery Blocks
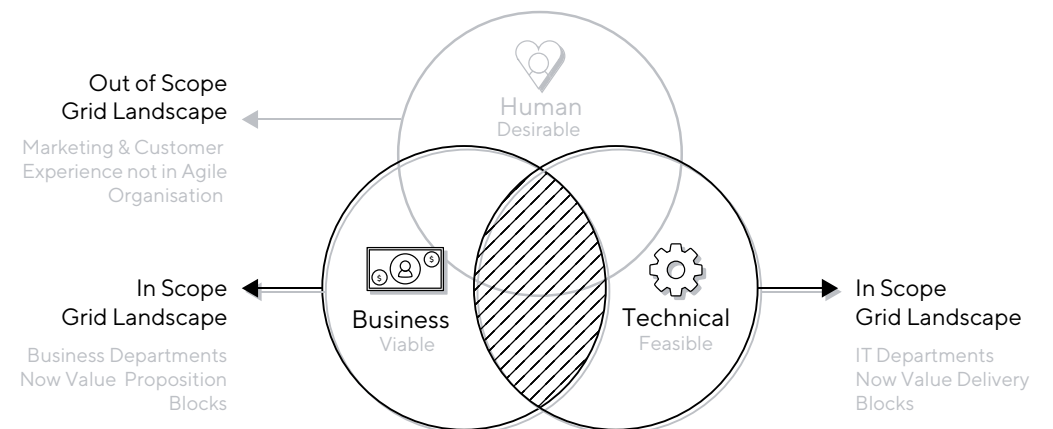
However still there's a noticeable movement and need towards organising and ideating along the end-to-end customer journey or customer needs in general, though a larger gap starts to appear with the product and system oriented agile organisation. The siloed nature of the grids further results in the Not-Invented-Here Syndrome, where ideas that come from outside a respective grid (e.g. which ideas based on customer needs generally are) are more prone to get rejected or deferred to the bottom of the backlog (1). Or end up being bounced around and stuck due to all the dependencies (2). Altogether, these factors create a very difficult environment in which ideas that do have all the components (human, business and technical) can successfully be realised and integrated into the existing organisation (see Fig 4-15)
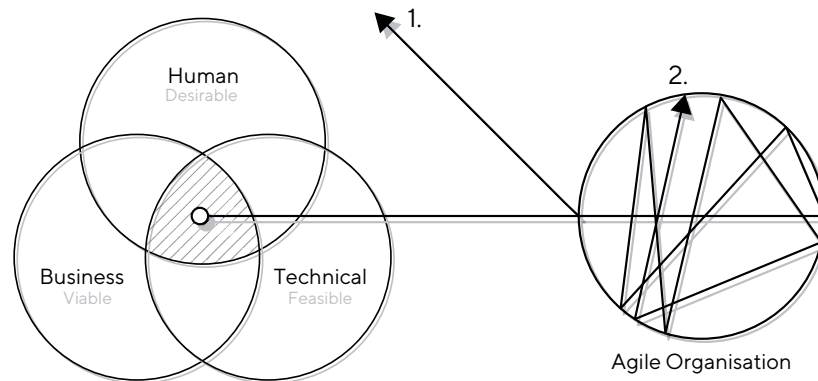
Fig 4-15 "Deflection and dependencies hold up innovation"

Where on the other hand, innovation that comes from the grids generally tends to be limited to innovation for their own system and product, creating sub optimal solutions within the entire customer journey of which it is a part (see Fig 4-16). In addition, it was found that for innovation in the grid landscape little to no support exists. The way teams approach innovation is generally left to them to figure out and gives them the leeway to keep innovating within their own silos.
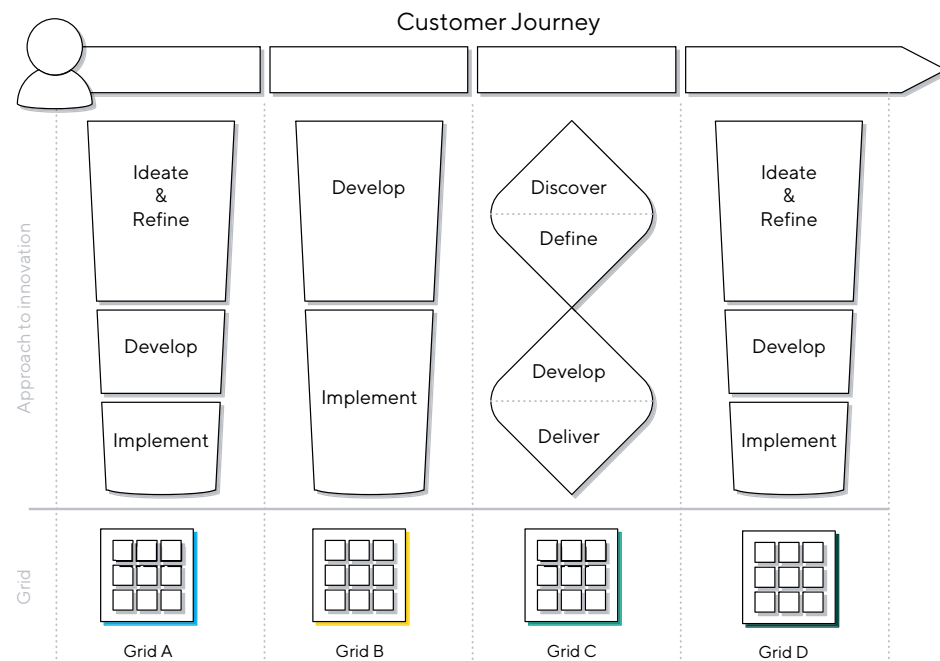
Fig 4-16 "Narrow scope and approaches"

4.3.1   Problem Statement

Due to the product and system orientation organisation and structure of grids, the employees in a grid's responsibility and focus lies only on a very small subpart an entire value streams. Ideas that are created in the grids generally solve only a small part of the actual problem and focus only on the scope their grid and don't necessarily add to the customer experience. In addition, grids have a deficiency of skills and knowledge to create propositions that are customer need driven. Whereas propositions that are based on customer needs generally have dependencies with many grids, making it harder to realise due to the complex nature of the organisation and symptoms like the not-invented here syndrome, hand-overs and neglection of ideas/items that come from outside the grids. There is no support, process or governance for innovation in the grid that helps overcome siloing and lack of customer focus.

The result of this is that there's a lack of idea/initiative realisation based on true customer needs. Where for innovations that do come from the grids themselves (many times) the process of implementation and integration is slow, complex and tedious, has many stakeholders, and eventually don't solve the real customer problems.

4.3.2   Design Challenge

Whilst all six of the challenges for innovation management in the agile grid landscape need to be solved in order to successfully innovate, a distinction can be made based on the nature of their challenges and feasibility of being solved. So far a couple of implications for a solution have been stated throughout the chapters, where we made decisions to leave Horizon 3 out of scope (as the grid landscape has no direct input on that) and focus on Horizon 1 and Horizon 2 in the agile grid organisation. In addition, a decision is made to focus on teams within the grid landscape that (should) work on the early stages of innovation by designing new or improved products and services. If all of these implications are plotted on the earlier defined innovation management framework together with the challenges we find a narrower scope in which the solution should fall (Fig 4-17).
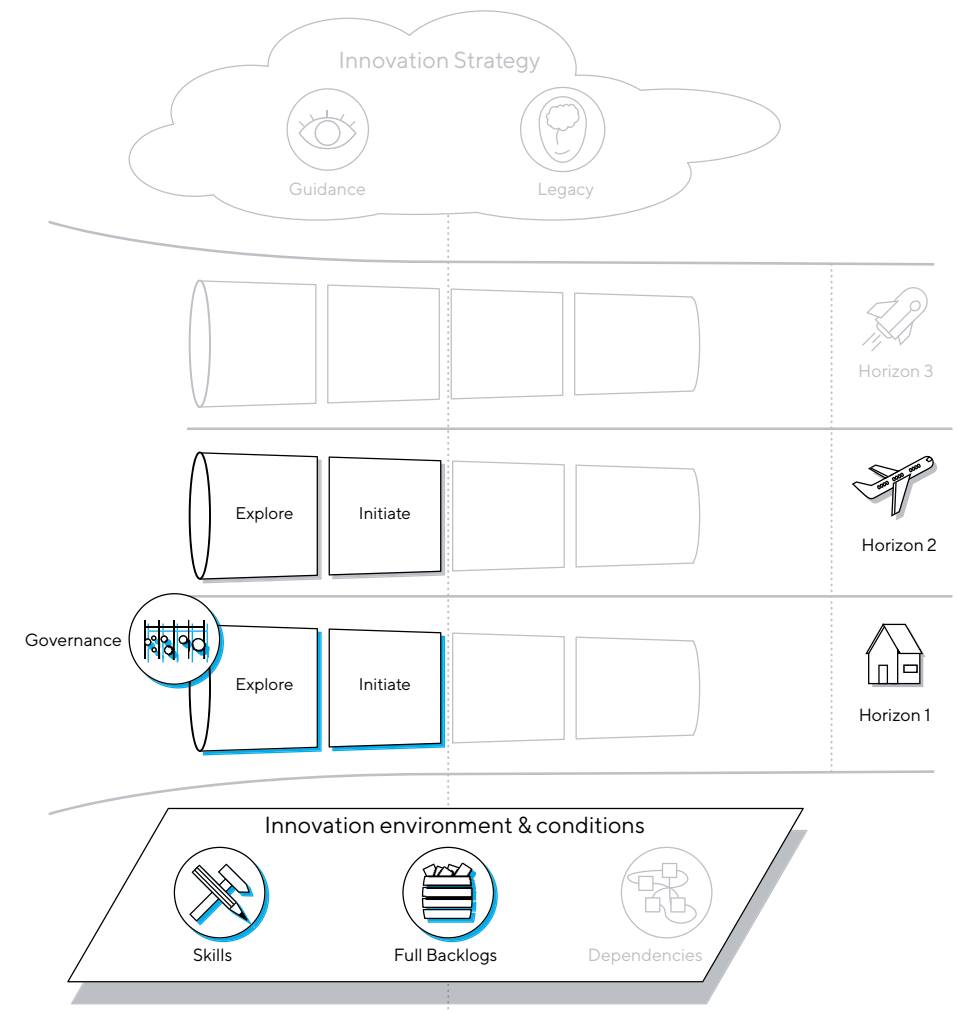
Fig 4-17 "Scoping of Design Challenge"

In light of being a graduate student a decision is made to zoom in on three challenges and leave "Lack of clear guidance & leadership on innovation", "Dependencies & Limited Autonomy", and "Organisational and Cultural legacy" out of scope . Changing culture and mindset is a challenge that is not feasible within the given timeframe, changing the organisational landscape is also not within my reach (see example), and since there are already discussions happening in the board room to determine a new innovation vision and strategy together with a large consultancy firm my efforts would probably be in vain. So the focus lies on "Deficiency of skills & knowledge for successful innovation", "Getting innovation on the backlog", and "Lack of governance on innovation in the agile organisation" as those challenges fall within my reach of influence. Based on the eventual narrowed scope (See fig. 4-17 again), the importance of customer insight for Horizon 1 innovation and the values that followed from the future visioning workshop the following design challenge is set:

....
Just change the Landscape!
What is implicitly stated is that the design solution fixes part of a bigger problem: their organizational orientation. However due to ABN AMRO's capabilities and main contributor to that is the IT landscape, this isn't feasible. ABN AMRO's CEO explicitly stated that they won't be investing in a new IT landscape however would be further developing the existing one. One example of the risks associated with migrating to new IT landscape is exemplified by the recent TSB IT crisis (was part of Lloyds banking group), where an IT migration resulted in customer losing their accounts, having accounts linked to different peoples accounts, people losing their money and eventually losing thousands of customers of course.

Design a solution that stimulates ownership and awareness amongst Value Proposition Block members towards customer problems and needs. This solution needs to provide clear guidance to enable autonomous and successful realisation of these customer centric innovations in the product and system oriented agile organisation.

4.3.3   Summary

In the previous two chapters some implications for the eventual solution were found. In this chapter we combined findings from those two chapters and created six new challenge areas. Based on a workshop and these challenges a design challenge was formulated. To summarise these findings, they've been visualised in Table 4-18. The WWWWWH technique (Who? What? Where? When? Why? How?) Is used as it's a great way for deconstructing problems systematically (Boeijen et al., 2014)and is therefor employed here as well.

Table 4-18 "WWWWWH"

WWWWWH	Reference visual	Answer
Who?		Eager as well as traditionally minded employees of Value Proposition Blocks that lack explorative/discovery skills and experience
What?		Produce innovations that narrowly focus on their respective grid and don't always align with customer needs
Where?		As part of the grid landscape that is responsible for Horizon 1 innovation, where there are many dependencies and it's easier to solely focus on your own grid to avoid dependencies.
When?		In the early stages of the innovation process (problem finding & solution finding)
Why?		It's imperative and crucial for success that the products and services are build/improved based on real customer needs, whilst still being realistically attainable.
How? (context)		*There is no innovation support available for the agile grid landscape* *There are no existing governances an processes for innovation in the grid landscape* *There are existing processes for H2 innovation in the H2 labs, however are not linked to the grid landscape.* *Unsupportive organisational structure and IT landscape which leads to many dependencies.*

5.1   Introduction

Back in 2008, Pepsico decided to go environmental friendly and launched a 100% biodegradable bag for their brand Sunchips. After the launch of the product they were left puzzled as to why this 100% compostable bag variant of their chips wasn't selling as expected. Upon further inspection they quickly realised they overlooked a crucial flaw in their product. As they started to question customers why they weren't buying the product, they discovered that the bag was too noisy and loud. You might wonder why this would be a problem for a product of which you only eat what's on the inside of the bag, however the flaw was that Pepsico overlooked the context in which these chips were consumed. Consumers didn't neatly put the chips in a bowl, instead they ate straight from the bag whilst watching their favourite TV-shows or when they tried to sneak a couple chips in as a cheat-meal. This meant that with noisy bag, which was likened to the sound of an Air Force Pilot's jet, customers couldn't hear their TV sound over the crackling noises or got caught in the act of trying to sneakily consume some chips. This example goes to show how crucial it is to understand the context in which a product or any other solution will be utilised.

In the previous chapter a problem was presented along with a design challenge that aims to solve part of the problem. As one of the goals of this thesis is to help ABN AMRO with their innovation management efforts, a solution will be created based on the design challenge at hand. Similar to the Sunchips example, this solution will need to take into account the context in which it'll be used in order for it to be successful. However, next to fitting in ABN AMRO's context, the solution should also contribute to the eventual end goal of its survival. All of the data that's been collected up until this point will serve as a starting point in finding a solution. However, as for many solutions, they're never fully finished and multiple iterations are needed to find a solution that does fit its context. The goal of this chapter is to explain the approach to the design challenge, the iterations that have led to a "final" solution, as well as to discuss the learnings from the iterations. The learnings from the iterations will be discussed more specifically in light of challenges for innovation management in the agile grid landscape.

....

40th **Time is a charm**
The wonderful WD-40 spray, who owes its name to the 40 attempts it took to get the solution right (Berkun, 2009). It's a great example of an iterative approach leading to success. Now WD40 wouldn't probably have saved my bicycle chain a dozen times, if the creators wouldn't have learned from each of the preceding attempts.

Fig 5-1 "Sunchips compostable bag"

V   Develop & Deliver

5.2   Design Approach

In order to work towards a solution the decision was made to start with ideation which helps in generating a wide variety of solutions. This divergent phase consisted of two ideation (idea generation) workshops and individual ideation sessions, which will be explained more in detail in the next section. During these sessions ideas were clustered and based on individual ideas and clusters new "mini"-concepts were created. In addition to these ideas, input from the external interviews was also used to enrich some of the ideas and concepts. From there onwards a decision was made to go forward with one solution that fit the values and design challenge best. This concept/idea has undergone four main iterations before it reached its current state. In this chapter the steps will be discussed up until iteration four. In the last chapter, iteration four will be discussed (See Fig. 5-2)
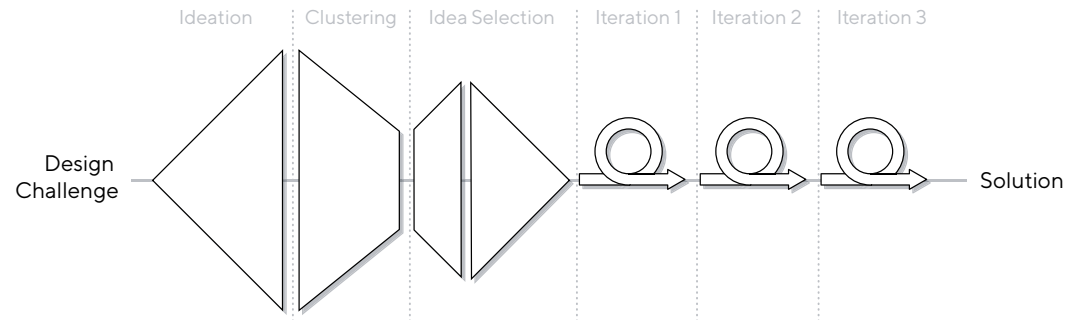
Fig 5-2 "Design approach"

5.2.1   Ideation & Clustering

In order to generate as many ideas as possible with regards to the design challenge, the author organised two idea generation sessions which lasted 1,5 to 2 hours each. One session was held with four Strategic Product Design Students and the other session with four ABN AMRO employees (See Fig 5-3). The goal of the assignments was to come up with clusters of ideas which would serve as input for the solution direction. The workshops were designed using techniques from Tassoul's (2004) creative facilitation book and Buijs & van der Meer's (2013) "Integrated creative problem solving" techniques such as "shedding the known" (where initial ideas regarding the design challenge are written down) and "associative thinking" (to force ideas around existing concepts, such as forcing an idea that draws inspiration from the word "ikea"). The full workshop guides can be found in Appendix R.

Ideas were generated based on pre-defined (by the author) "how might we" statements which were directly drawn from values embedded in the design challenge:

The ideas that flowed from the ideation were clustered by the participants and later clustered by the author. In total 7 large clusters were formed; social solutions, incentivise & reward, give them a moment to shine, decision support, support tools & structures, Inspire & exchange, and governance rules & security. The full results of these ideation session can also be found in Appendix R

....
Ikea + Guidance = ?
To give an example of what force fitting resulted in during the workshop. One participant came up with the idea of making it compulsory to add a tool to any idea whenever it's made so that the person who picks it up knows what to do next. The inspiration came from the fact that IKEA always supplies the needed tools with the product.
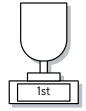
Value	How Might we Statements
Recognition/Appraisal	How might we make grid members feel more recognised in taking risks and in being entrepreneurial?
Ownership/ Possession	How might we make grid members take more ownership over customer needs and problems?
Autonomy/Independency	How might we make grid members more independent in bringing about change/ innovations?
Guidance	How might we make grid members feel more guided in their innovation efforts?
Awareness	How might we improve the awareness and understanding of customer needs amongst grid members?

Fig 5-4 "How Might We Statements"

Fig 5-3 "Workshop with SPD Students"
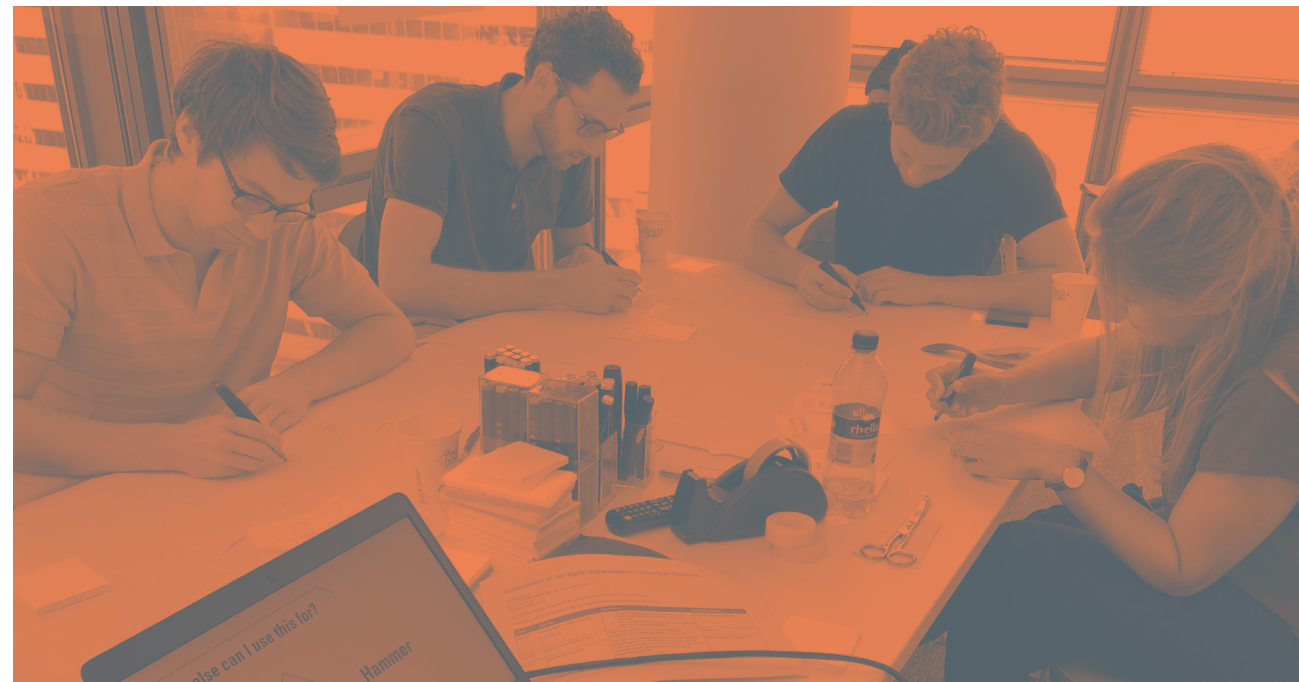
5.2.2   Idea Selection

The categories that followed from the clustering served as a starting point for further ideation. Most of the ideas were filtered by the author by assessing their alignment with the values of the design challenge as well as their novelty and feasibility. More (mini) concepts were created, however information from the external interviews were also taken into account for concept development (See Fig 5-5). One example is the activity called "klik uurtjes", where everyone (at Coolblue) plan an hour in their agenda in which they go through their own website to find problems and flaws.

The eventual concept that was selected to have most overlap with the underlying values (e.g. awareness, guidance, ownership, autonomy recognition/ appraisal). Was the concept of a process manual/template that takes you by the hand in gathering customer insights and how to translate that to internal processes. The first iteration of this process will be explained next. The concept was born from existing ideas such as the PACE manual that ING uses for the management of their innovation initiatives, "product principles" that Booking uses to ensure consistent quality of processes and dragon's den style pitching which came up as an idea very often.
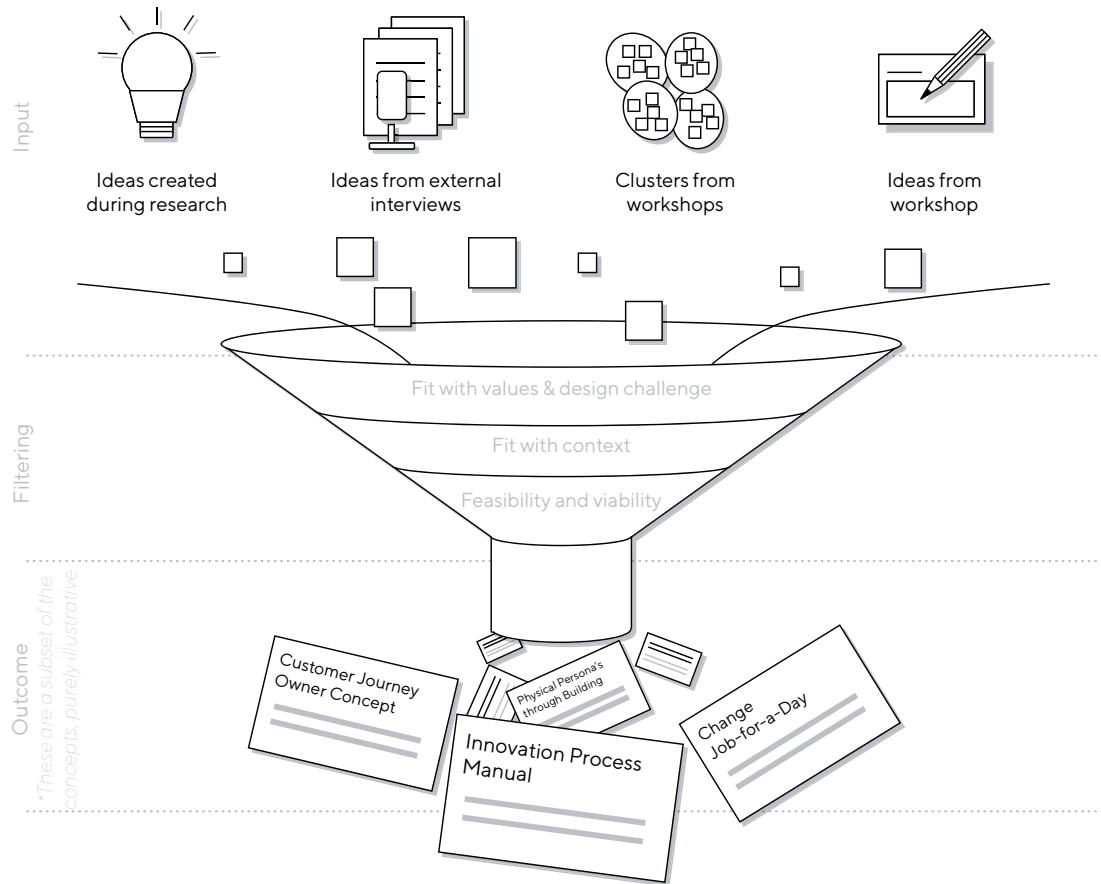
Fig 5-5 "Idea selection"

5.3   Iterations

As T.S. Eliot, famous british Poet, stated "The journey, not the destination matters..". In this section we will be guided by this knowledge by not focusing on the solution for each iteration, however by focusing on the learnings with each of the experiments and validation tests. With each iteration changes were made based on the findings from the preceding experiments. The learnings and various approaches to testing the iterations will be explained next.

5.3.1   Iteration 1

The first iteration was a process that came in the form of an "IKEA"-style manual as well as a canvas (See Fig 5-6).
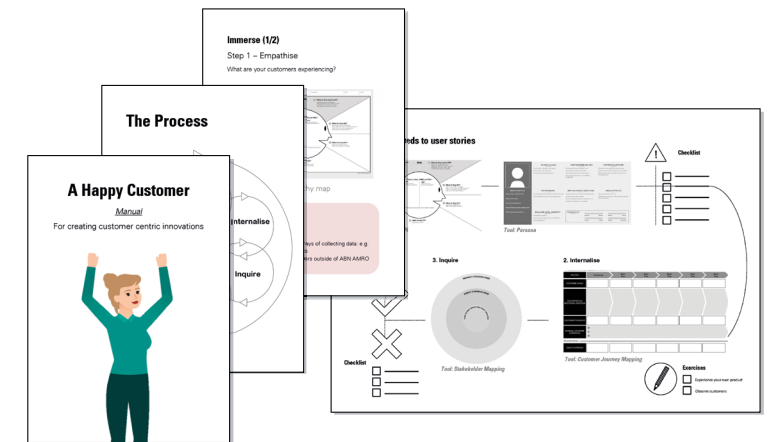
Fig 5-6 "First Iteration Manual & Canvas Form "

Product Under Test

The proposed solution was a process that guides the teams and users through a process of customer centric innovation on a high level from beginning all the way to an implemented product. The first iteration of the process which has been created in the form of a manual, in a similar fashion to the PACE manual which is used by ING employees. It had six stages: Immerse, Internalise, Inquire, Improve, Integrate, an Inspect. These six stages all had tools and methods presented along with them so that with each stage everyone has a place to begin with. There were checklists that reminded the users to do certain activities before proceeding. The excersises offered suggestions for how the tools and methods could be used. There were checkpoints that served as a go/no-go point as well.

Goal of Experiment
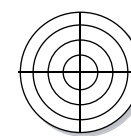
The main goal was to find out whether ABN AMRO grid employees saw value in a process that guided them through the innovation process. In addition, some subgoals were: finding out whether people liked the features such as checkpoints, checklists and suggested excersizes. Besides that, I wanted to know which variant was preferred by the people, the manual or the template format. Evenmore, the sequencing of the process and the suggested tools had to be logical and understood by the users.

Approach
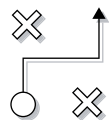
The manual, canvas and questionnaire were printed. Both the booklet and workshop templates are shown to employees from the grid landscape. They were asked if they had 10 minutes of their time to quickly provide feedback to a minimal viable product. They're handed the two documents, and after that they were asked some open questions as well as given the questionnaire. A total of 15 people were approached and in order for them to suffice as a test participant they had to be part of the grid landscape and work within either a VDB or VPB. The setup was both quantitative (unstructured interview) and qualitative (questionnaire) Sidenote: the iteration you see in Fig. 5-6 is an improved version from MVP 1.0, as the testing was split over 2 days where MVP 1.0 was improved in between the first and the second day. Both the questionnaire and results can be found in Appendix S.

Main findings
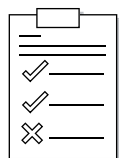
- 13 out of 15 participants indicated that this solution would help in gathering customer needs and translating this to the grid landscape.
- Comments on the sequencing and phases of the process indicated that the last three stages are already things they do in the agile landscape.
- 7 out of 15 participants indicated that they would prefer the template/canvas style
- 6 out of 15 would prefer both a manual and template, only 2 would prefer the manual.
- The majority of people found the checklists and exercises to be valuable
- However comments were made on their similarity and that it would be clearer to have these combined.
- Multiple comments were made that they missed the element of business value in the process
- -Additional comments were made that it was unclear for them how decisions were made.

Implications next iteration

- The process was seen to be valuable, however the main contribution would lie in the first stages of the process where customer insights are gathered and translated. The next iteration will zoom in on the first three stages.
- A template/canvas format will be the way the solution will be communicated.
- The checklist and suggested exercises will be merged, however will be kept.
- Add elements that include business value and also decision making.

Fig 5-7 "Feedback session with 2 VPB members"
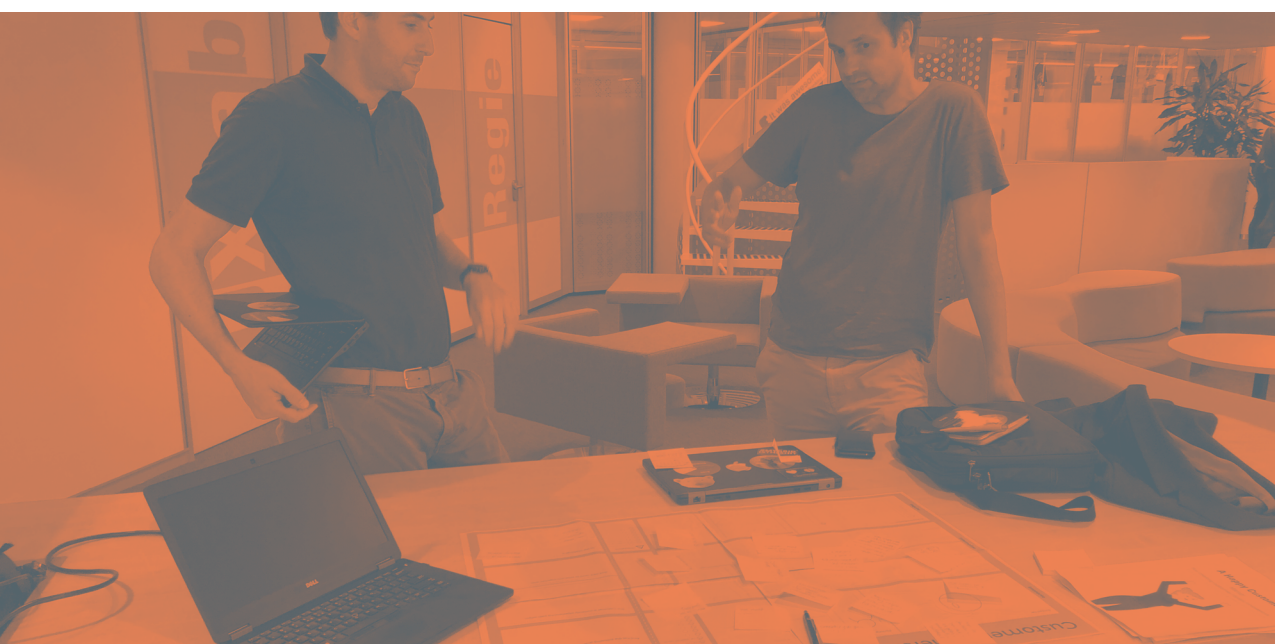
Iteration 2.1

Based on feedback from the previous iterations, improvements were made. This time a large canvas/template was created that focussed on the three first steps in the process. Tools were added that helped incorporate the business value as well as decision making (business value vs. customer value matrix). The checklist and suggested exercises are merged into a single solution. See figure 5-8 for the updated MVP 2.0.
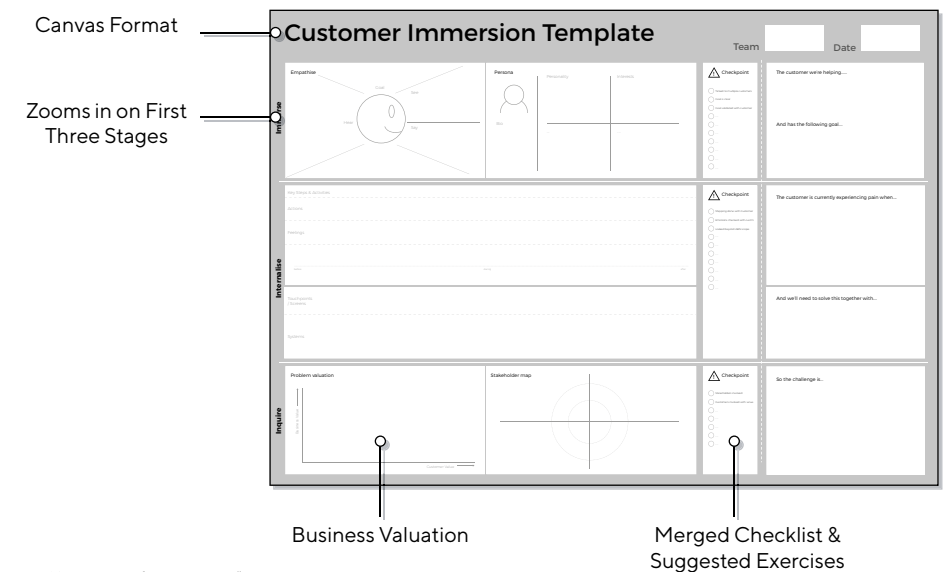

Canvas Format — **Customer Immersion Template**   Team   Date

Zooms in on First Three Stages

Business Valuation

Merged Checklist & Suggested Exercises
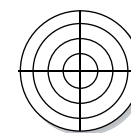
Fig 5-8 "Second Iteration - first version"

Product Under Test

The Updated Customer Immersion Template. (Version 2.1)
It only focussed on the first three stages (Immerse, Internalise, Inquire), where there were first six. The template was printed on A1 size, in contrast to the first experiment where it was A3 size.
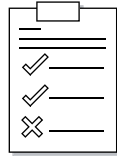
Goal of Experiment

The goals of the experiment were to find out (1) if the participants would use this canvas? if yes how and why? (2) do the tools and the sequencing work for them? (3) if they were to use this template what would their main concern be?.

Approach

A total of five people were approached which all came from different grids and departments within ABN AMRO. One session lasted 2 hours (with two Value Proposition Block members (see Fig. 5-7 for photo), whilst the other 2 sessions (one session with a Management Consultant that worked for a grid, and one session with two lean consultants) lasted about half an hour. They were asked to give feedback on the model and to discuss their concerns. The data collection was thus qualitative.

Main findings

- Multiple comments were made about that tools in the canvas could be filled in in multiple ways.
- Not having template stages for the customer journey was perceived to be very confusing.
- For multiple participants it was unclear where you start with this process. How do you scope, how do you select the specific product you're going to focus on?
- Feedback was given that it was unclear how long each of these phases took and was expected to be included somewhere in the canvas.
- A couple comments were made on the fact that this document should be so clear that anyone that picked it up should know what and who it is for.

Implications next iteration

- Guiding questions, examples and stages need to be added.
- Add scoping element up front
- Add timeframes
- Place some contextual information about this canvas/template in it.

Fig 5-9 "Feedback on Canvas"

Iteration 2.2

After the first version of iteration two was tested, the decision was made to do some more testing, however this time a little bit longer and with a broader audience. The feedback and results from the previous sessions had been incorporated into the new version 2 (Fig. 5-10).

Fig 5-10 "Second Iteration - 2nd version"

Product Under Test

The Updated Customer Immersion Template (**Version 2.2**)
The canvas/template was printed on A0-format (similar to what it should be printed on).

Goal of Experiment

The goal for this experiment was to find out whether the tools and flow of the canvas was logical. In addition I wanted to find out whether there where gaps or mismatches somewhere in the process. This in preperation of a bigger experiment that was coming up.

Approach

The second version was tested with four agile consultants in a 1,5 hour session. The canvas was printed on A0 format and hung up on the wall. An extra empty sheet was placed next to it so that the participants could leave their opinions. The intention of the session was to go through the canvas step by step. Per stage in the canvas the consultants were asked to come up with examples where this would work and where it wouldn't work. Evenmore the process was later tested with 8 management consultants in a 45 minute session in which they gave feedback on the process, tool selection, and their main concerns with the template (See Fig 5-11). The approach differed from the first session in that I did not ask them to give examples per stage. All the feedback was qualitative, and was generally captured using post it notes on the physical canvas (See Fig 5-9)

- During the testing an observation was made that many times multiple persona's will need to be made based on a life cycle even (e.g. divorce) or even products in general, the canvas did not yet support personas
- During the feedback and testing session it became evident that it wasn't clear how decisions should be made between different persona's.
- Another point of feedback was, how and when do you select the goal this persona has? because it was clear that in many situations persona's can have multiple goals related to a product (e.g. a mortgage, checking the conditions, changing the credit, moving houses etc.)
- Many participants mentioned that the example questions worked really well for filling out the template.
- A big concern many participants shared was that when all of the stages would be filled with examples and example questions it would become very chaotic and unclear. The Canvas is already very big
- The scoping element based on age didn't work as this way key stakeholder groups are excluded based on products (e.g. followed from example of "becoming an adult", where both the child and parents are stakeholders).
- Again multiple participants mentioned that everything should be on the canvas and also be very clear whenever someone would pick it up. Everything should be described in detail so that no faulty interpretations can exists.
- One participant made the observation that in some cases multiple scenarios and multiple customer journeys can exist for reaching the same goal.
- Another participant was very observant and stated that the system and business journey is way more detailed than the customer journey and thus can't be at the same granularity as the customer journey. This should be clear in the template as well.
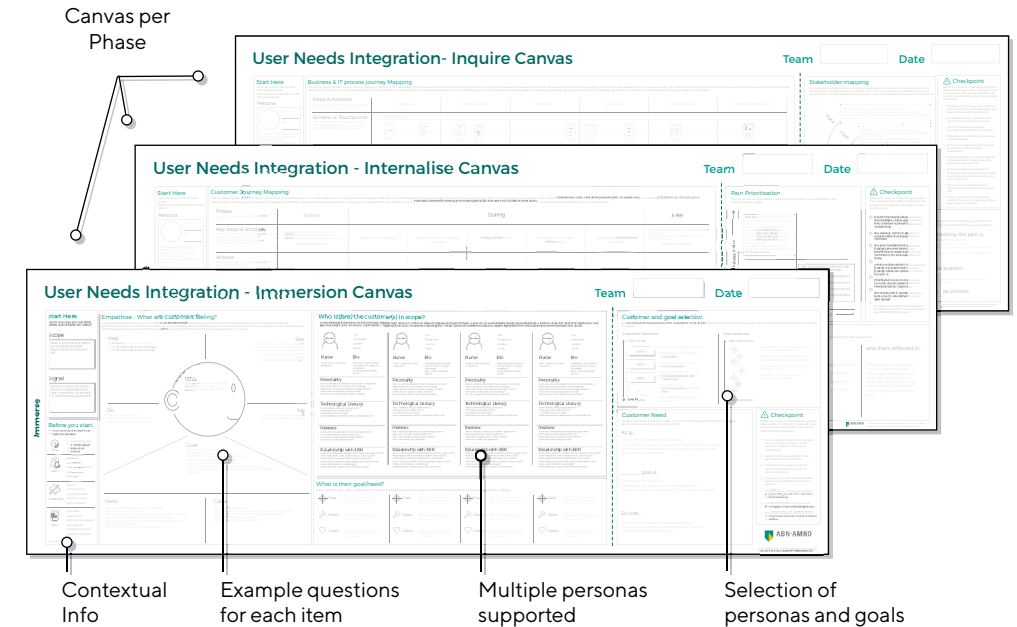
Implications next iteration
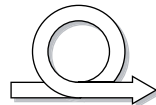
- Support for multiple persona's needs to be added
- Add explanations and steps for selecting persona's and goals
- Add more examples and example questions to each stage of the process
- Find a way to keep the canvas/template clear and clean, whilst adding examples and example questions to all the tools and steps.
- Change scoping element, in a way that doesn't divide/exclude key customer groups up front.
- Add more contextual information to the canvas.
- Accommodate for multiple customer journeys
- Make clear that the business/system journey zooms in on only a part of the customer journey.

Fig 5-11 "Feedback from management consultants"

5.3.2 Iteration 3

Based on feedback from the previous sessions more improvements were made. For example in order to keep the canvas clear and clean, a decision was made to split up the canvas into multiple canvases per phase of the process (See Appendix V for all three canvases). This way the focus is placed on only a single phase per time and also allows for configurability when it comes to adding multiple customer or system journeys. Next to that a decision and prioritisation exercise for persona's and their respective goals was added. Altogether feedback from the previous round has been incorporated as much as possible (see Fig. 5-12).

Canvas per Phase

Contextual Info — Example questions for each item — Multiple personas supported — Selection of personas and goals

Fig 5-12 "Third Iteration"

Product Under Test

The "Immerse Phase Canvas"
The canvas/template was printed on half the size of an A0 paper (divided in long-edge). In addition, the tools in the immerse phase canvas were each drawn on an A0 paper serving as a template as well.

Goal of Experiment

Besides overall observations and testing to see how employees respond to the process and the canvas a set of specific hypothesis are defined;
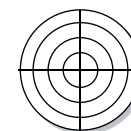
(1)*I believe that* inviting customers into the workshop with grid employees
Will result in user stories that align more with user needs instead of products
I will know I have succeeded when the user stories defined in collaboration with ABN AMRO grid employees will significantly differ from those that did not collaborate

(2)*I believe* providing the teams with a process with clear steps and examples
Will result in higher autonomy across teams to gather customer insights and pains and insights
I will know I have succeeded when during the workshop there weren't many questions on what to fill out in the template

Approach
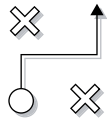
Two (1-hour) workshops were facilitated in which the "immerse"-phase of the entire process was tested. The goal was to find out whether ABN AMRO grid employees are able to collaborate with and get valuable insights out of customers. To test this, one workshop was held in which no customers were involved and one workshop where customers were invited (See fig 5-13 for workshop with customer). A total of 11 ABN AMRO employees joined the first session without customers and 12 employees joined the session where four customers were present. The assignment for the teams (consisting of 3 to 4 people) was to create a user need story based on a persona they had to create themselves during the workshop. During both workshops the same starting scope was given to the teams: the "joint account" product. During the workshop the facilitator (who is also the author) made observations on how people used the canvas, what kind of questions participants had and what they struggled with most. These insights were captured during the session itself. In order to capture more feedback a questionnaire was distributed after the workshop as well. The workshop setup can be found in Appendix T, the questionnaire and the results in Appendix U

Main findings
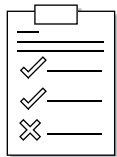
- Overall, the UNI process/canvas was received positively. Based on the scores of the questionnaires, the conclusion is drawn that the UNI process helps them in gathering and translating customer needs into the product and system oriented grid landscape. Evenmore, many participants also stated that they would recommend this process to a colleague.
- The biggest concern for many participants was making sure people would use this process/canvas correctly without misusing it as a checkbox/fill-out exercise. It would require a lot of training for people to use this in a correct way. Empathy mapping and Persona's in general were things the participants hadn't worked with at ABN AMRO so training on how to do this properly is key.
- The hypothesis was posited that adding/inviting customers to the workshop would have an effect on the scoping of the user stories. The differences show that inviting customers into the workshop did have an effect on the scoping of the user needs stories, where teams without customers in the workshop stayed closer to the initial scope , whereas teams that collaborated with customers in general shifted or broadened their scope to better fit the customer need. However, for both groups the user stories were very solution focussed, whilst it was explicitly mentioned that at this stage we were concerned with goals and problems of the customer instead of solutions (See example on the right) .
- Another hypothesis was made that the process canvas, filled with example questions and examples would result in higher autonomy for going through the process and gathering customer insights. One of the most difficult parts proved to be the scoping up front Moreover, the answers and pains given by the users were taken very literally, without asking deepening questions to find the underlying pains and needs

Implications next iteration
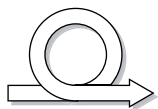
- The canvas needs to be further split into seperate templates, where there's one main canvas that captures the high over process (users complained over the small size of the canvas and 6 out of 8 teams used the canvasses on the wall instead)
- Create a Connections webpage to help distribute and communicate the model (was most prefered way of communicating the model by participants)
- Adding more descriptive information and examples on how to talk to customers and how to validate assumptions with customers.
- Improve user need story, so that it's clearer that its about customer goals and needs instead of solutions

He needs A Financial Overview!

One of the groups eventually came to the conclusion that their customer wanted a "Financial Overview" and subsequently made that the core of their User Need Story. The reason they selected this was because the fact that the customer in question just stated that he needed overview, so the team immediately switched to a "solution"-focus: HE NEEDS A FINANCIAL OVERVIEW APP! Whilst the idea is not wrong on itself, it's more about switching to solutions instead of finding the underlying problem. Upon further questioning the customer after the workshop, the reason because he wanted an overview was because a few days back he received a withdrawal from his account of which he didn't know where it came from. Eventually he found out it was for his son's insurance, however he did not know that. Next to that he had an issue a few months back where he didn't know if his new electric bike was covered by his insurance. So he had to make several calls, which he disliked. The point is that these two events made him think he needed a financial overview, however the underlying cause seems to be two seperate frustrations.

Fig 5-13 "Workshop Participants with a customer (girl on right)"

5.4 Discussion

The goal of this chapter was to describe the approach taken in order to solve the design challenge. Through the use of two ideation workshops and individual ideation sessions a base solution was created in the form of a process. This solution was further developed through the use of four iteration cycles each with improvements based on the learnings from the previous cycles. Another goal of the chapter was to discuss these findings in light of the challenges for innovation management within ABN AMRO's grid landscape.

Based on conversations with al the experiment participants, it was found that guidance is key within ABN AMRO. Each of the iterations got more specific and prescriptive as participants indicated that these are crucial for them to adopt such an approach. If it lacks this structure and guidance, the solution will either not be used or misused. In one of the experiments this was supported by the fact that many people liked the checklists as for them it created a feeling of structure. the content and instructions given to them have a significant impact on the outcome of the process. Previous research on the effects of structure on creativity however shows that for individuals with a systematic background, which is the case within ABN AMRO, structure actually positively influences the individual's creativity (Sagiv et al. 2010). Right now (based on survey results) there is no standardised innovation process within the grid landscape, a structured and guided approach to innovative processes is therefore recommended for ABN AMRO's context. This is also backed by the results from experiments/workshops from the multiple iterations where nearly all participants indicated that they would like to receive the process developed and even some who asked whether someone could facilitate the process for them.

In extension to the previous finding, one of the main concerns of multiple participants and even innovation managers within ABN AMRO is the correct usage of the process and canvas. They state that even when structure and guidance in a passive form is presented (e.g. instructions, example questions), the customer centric discovery tools for example will be misinterpreted, poorly understood, or used as a fill-out exercise. Results from the workshop further confirmed this by finding that the empathy map was filled out without regarding the specific elements it asked for in most cases. This is simply because for many individuals in the agile organisation, it'll be the first time seeing and using such a tool. Besides further confirming the earlier stated finding of a lack of (customer) discovery skills, it stresses the importance of having facilitators or support roles for these creative processes. Since ABN AMRO's innovation center only focuses H2 innovation with regards to coaching and facilitating, this indicates a clear gap for managing innovation in the agile organisation. The challenge here is either securing support in the form of training and coaching to teach people how to work with such processes, or adding roles and human resource that naturally have these competences. Both are tricky challenges as coaching skills for innovation are expensive and User Experience Designers and Interaction Designers have been reported to be scarce within the company.

Results from workshops showed that ABN AMRO employees have a very solution oriented mindset the solution, jumping to solutions rather than finding the underlying problems and needs. For example, one workshop group came up with a persona about a family man with two children and a wife, who wanted a "financial dashboard". When approached later on, and asked about why he would have wanted a dashboard, the customer responded with several smaller issues that gave him the feeling that he wasn't in control of the financials in his account. One example he mentioned that annoyed him was that one on his account a withdrawal was made that for him was unclear what and who it was for. Eventually it turned out to be an insurance withdrawal for his son. This challenge however is related to behavior and mindset, and is known to be difficult but also possible (Lumsdaine & Lumsdaine, 1994). Whilst ABN AMRO employees did appear to listen to the customer insights and needs, they directly translated this into the context of ABN AMRO (e.g. what product does he she mean? what kind of product could solve this?). Moreover, whilst involvement of customers positively influenced the outcome of the workshop, and showcased the capability of ABN AMRO employees to utilise the customers, extra attention needs to be paid to training and familiarising employees with customer interactions. One customer for example mentioned that they sometimes talked about her as if she was not there and made assumptions about her without validating or clarifying. Previous literature has identified that for explorative processes different

skill sets and mindsets are required than for exploitative processes (Lavie et al., 2010). Since financial services firms are known to lack an innovative legacy, the challenge for managing innovation is related to hiring or retraining enough employees to build the problem-oriented competency of the firm. This problem oriented mindset should also be carried in higher levels in the organisation as this challenge is also related to a company's' organisational culture.

During multiple experiments questions were asked on how to scope or prioritise the items in between certain steps in the canvas. Scoping and prioritising is observed to be a crucial but complex task for people in the grid landscape. This difficulty with prioritisation and scoping can be a consequence of the earlier mention challenge of a lack of clear vision and strategy. People mentioned this to be challenging as they have no clear guidelines and direction that helps them in selection and prioritisation this fuzzy front end of the innovation process. An example was that multiple employees struggled with the scoping piece of an experiment. They were given a "joint account" as a scope, and they were asked to brainstorm about possible users of this account. They struggled to brainstorm loosely about multiple users and generally came to consensus as a group on what person they were going to brainstorm about and then started with the brainstorm exercise. An alternate view on this challenge could also be the lack of experience of the ABN AMRO grid employees with the fuzziness and messiness of these early stages in the innovation processes.

In an article about creative problem solving Lumsdaine & Lumsdaine (1994), they state that for these fuzzy and messy processes people with a more imaginative and interpersonal mindset are needed. However I speculate that within the financial services industry the workforce is predominantly analytically and sequentially minded, and therefore have a deficiency of people that can deal with the more chaotic and messy processes of innovation. The challenge for innovation management in this respect is very similar to previous challenges where it's more about changing the employees' skill and mindset, so that they can better perform in the front end process of innovation. Or offering them structure and guidance which allows them to work in these environments.

Multiple sessions with individuals from different departments indicated that the process itself with the linked tools can't be too rigid either as different departments had different needs. In addition, the maturity of all these teams with regards to innovative processes differs and they all have their own preferred tools and methods to use. There needed to be some sort of customizability to the solution to cater for all these different needs, whilst still offering guidance if required. Most of the participants in the experiments indicated that they lack knowledge for planning innovative processes. In line with the first point in this discussion, in order to manage innovation effectively, there should be support for these innovation processes. Each problem has different ways they can be approached and this process is only one of them. This process focuses

Fig 5-14 "Clustering post-its"

specifically on customer needs and problems as that was one of the challenges identified, survey results further confirmed that ABN AMRO lacks a standard approach for gathering these customer needs. There are of course other ways to approach incremental innovation (e.g. from a technical or process perspective), the challenge is to define processes that cater for all of these different approaches or to make strategic decisions to focus on just one.

Generally the organisation responsible for incremental innovation or exploitation does not yet have governance structures and processes for managing innovation, as was the case within ABN AMRO as well. Building these from the ground up is a challenge on itself. Arguably the biggest challenge however is to define an innovation governance or process that both fits the needs of all the different teams and departments within ABN AMRO, as well as the existing processes such as the agile way of working in the grid landscape. As mentioned earlier, the interfaces with existing processes and structures should be clear, however innovative processes don't easily align with the structure and artefacts such as "sprints' for example. These apparent "mismatches" shouldn't be underestimated as they do influence the eventual ease with which the process can be implement or adopted. Once the solution does fit the context subsequently, people have to be convinced of the usefulness of having such an innovation process. Whilst there's a perceivable interest in a solution that packs part of the front end of innovation into a single process, there are other people more skeptical of it as they already use their own process. This isn't necessarily a bad thing as that might indicate that they've found a tailored solution for themselves, however as has been stated earlier, this will go at the cost of consistency and alignment. It's up to the organisation to make a decision between standardised or tailor-made processes as both will yield drawbacks and benefits, however having a governance and/or process in place for incremental innovation has been found to be needed and requested.

5.5 Conclusion

The chapter aimed to explain the iterative approach taken to get to a solution for the design challenge at hand. Learnings from five iterations were used to establish new insights with regards to challenges for innovation management in the agile landscape.

Guidance and structure was found to be a crucial element for ABN AMRO employees especially with regards to these innovation processes. An interesting future direction would be to look into the difference in team performance or innovativeness when using a structured and prescriptive innovation processes in comparison to the teams who don't follow any process. This is needed to understand the effectiveness of such structure innovation processes within large financial services firms. In relation to the previous finding, misinterpretation and misuse of innovative tools and processes was a concern amongst employees. Therefor support and training for existing employees or acquisition of new individuals that do have these competences to work with explorative/discovery processes is essential.

Employees within ABN AMRO were found to have difficulty thinking in problems and were very solution oriented. Employees directly translated customer needs into the context of financial products or services they could offer. This hampers the process of finding true underlying needs and immersing oneself in what the customer wants. This mindset shift is complex but possible and should both be met with enough HR support and be carried by senior management as well as it concerns organisational culture (in which they play a key role). In general, employees struggled to work in chaotic and messy processes of the front end of innovation (e.g. discovery and exploration). The speculation is that within financial services firms in general, due to a lack of innovation legacy, there's a deficiency of individuals with the competences and mindset to deal with these uncertain phases of the innovation process. Further research is suggest to see whether this speculation is correct.

Differences in maturity and context require an innovation process to leave enough leeway for more mature teams to customise as well as enough structure and guidance for teams that do need it. Either tailored or standardised, having a clear innovation process for incremental innovation is both advocated and desired in the context of this case company (rather than not having one).

Implications for the eventual solution

Many employees and teams within the grid landscape do need plenty of support and guidance. Many of the employees have no experience with working with these tools so in-depth descriptions and stepwise approaches are needed. Though still there is a large variability in maturity when it comes to discovery/innovation processes. The tool should account for that difference in maturity as well.

Fig 5-15 "ABN AMRO employees working with canvas"

VI The Solution

6.1   Introduction

"We no longer talk about the lagging indicators of success, right, which is revenue, profit. What are the leading indicators of success? Customer love,"

....
Exemplary Inclusion

Microsoft is of course known for their big products like Microsoft Office, and the most hated browser "Internet Explorer". However there's a big empathic side to the company as well. One example that shows the "customer love" is the focus on inclusion. Within Microsoft "Saqib Shaikh" is the well known blind programmer. He's had plenty of media coverage, but still he is a great example of how Microsoft is living up to their mission to empower every individual and organisation on the world to achieve more. Through the us of machine learning and A.I. and a lens fitted in sunglasses, Shaikh allows himself and all other blind people to be more independent and experience the world. His applications translate images into spoken text which is directly fed into the ears of the blind person. This way he can order his own food in a restaurant without asking for help !

That is what Satya Nadella said three years ago during an interview with the Verge on how he planned on shifting the entire company to become more empathic and customer centric. He stated that it was all about creating products that people love to use, and that the rest will follow (Weinberger, 2015). Nadella lived up to his statements and showed how valuable cusomter cenricity is, by reporting a 30% year-on-year revenue increase and a 105% growth in stock value ever since the day of that interview. Microsoft is only one of many examples that demonstrate the value of customer centricity, and the competitive advantage it brings (Brown, 2015).

Customer centric innovation, or customer centricity are now seen as an integral part of any successful company. Resulting in a lot of talk about being customer centric and wanting to be customer centric, however surprisingly little companies actually are (Devlieger, 2015). ABN AMRO similarly has customer centricity as one of their strategic pillars towards 2020 and is making moves to get there, along with their priorities to innovate and deliver faster. However the previous chapters have shown that in order to get there, multiple challenges are withholding them. Customer discovery skills were found to be lacking. Though even when that challenge is solved, there's still the product oriented organisational structure that complicates customer centric innovation as it leads to many dependencies.

In order to help ABN AMRO, a design challenge was defined based on these challenges. The solution to this design challenge had to both stimulate idea owners in the grid landscape to take ownership as well as improve their awareness of customer problems and needs. This solution had to provide clear guidance to enable autonomous and succesful realisation of these innovations in the product and system oriented agile organisation.

This chapter explains the solution called the User Needs Integration Canvas, which is a process aimed to help teams in ABN AMRO's grid landscape to bridge the gap between customer needs and their internal organisation.

The User Needs Integration canvas (UNI canvas) is a process represented in a canvas that aims to aid teams in the grid landscape in gathering and translating customer needs into the product and IT system oriented agile organisation (Fig 6-2 & Appendix W)

Fig 6-1 "CEO Satya Nadella with Saqib"

The User Needs Integration Canvas

Briding the gap between user needs and the agile grid landscape.

♡ Empathise	⊙ Personas	⊕ Goal
⟫ Customer Journey (as-is)		🩹 Pain
		🔑 Key stakeholders
🖧 Business & System Journey		📊 Problem Pitch

Product Vision Statement

For	teams that develop and improve products/services within ABN AMRO's grid landscape
Who	need guidance in creating and implementing improvements and new products/services that are based on customer needs
The	User Needs Integration Canvas is a process
That	takes teams by the hand and provides the necessary tools and structure to find validate, and create a grid-proof problem definition based on customer needs
Unlike	existing innovation processes
This	process takes into account the complex nature of a large organisation and provides the right tools and guidance that help with implementation early on in the innovation process

Fig 6-2 "The User Needs Integration Canvas & Product visioning Statement"

6.2   What is it?

The User Needs Integration canvas builds and combines elements of existing processes and tools to create a solution that takes teams by the hand, in creating a problem definition that is based on user needs. Unlike existing creative frameworks and canvases which are widely accepted and used for new service and product development (or improvement), like the Value Proposition canvas (Osterwalder et al., 2014), the double diamond (Nessler, 2016), design thinking (Brown, 2008) (see Fig 6-3); this process provides concrete handles and tools that take into account the integrative part of the idea into the existing organisation.
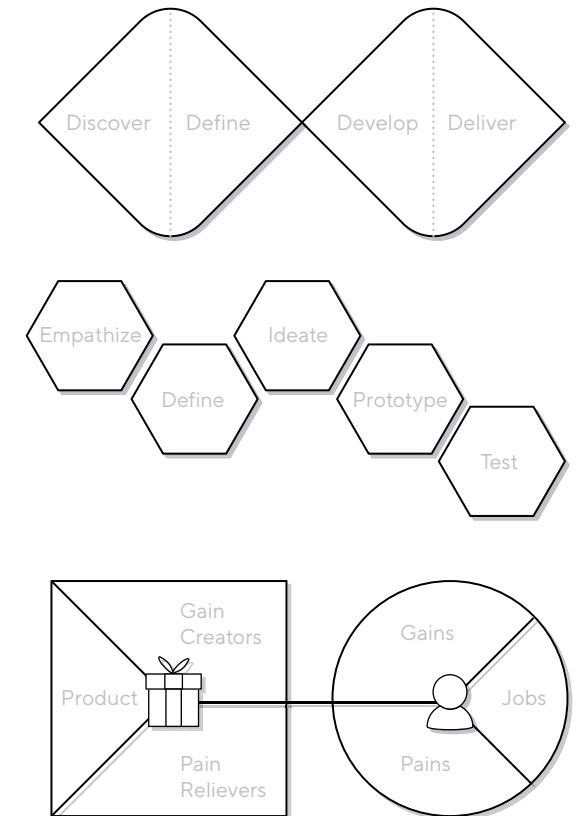
Fig 6-3 "Double Diamond (top), Design Thinking (middle), Value Proposition Canvas"

The User Needs Integration Canvas uses concepts from these existing frameworks like "empathise" from design thinking, the problem finding (right hand side of the canvas) from the value proposition canvas and the discover of the double diamond process. However it also extends on some parts;

In order to help with empathising a set of tools are presented to the team members that have outcomes logical fit within the next tool. The empathise part which has been renamed "immerse" in the UNI canvas has been based and constructed of existing tools in product design. Persona's are used because they enhance engagement and reality, which will help ABN AMRO grid employees to be more aware of the customers that use their product (Grudin & Pruitt, 2002). Furthermore, it draws on principles from context mapping, which describe methods that seek to find information about the context in which people use products (Visser et al., 2005). The aim of adding these principles is to expand the scope of ABN AMRO employees from their own system and product silo into the context of the user and how the product is used.
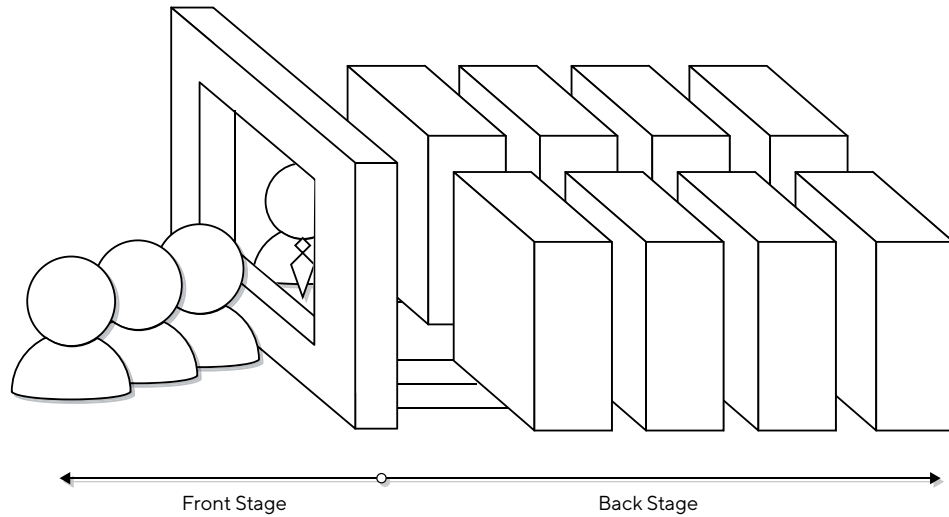
Fig 6-4 "Service Design Front and backstage"

Front Stage — Back Stage

Furthermore, it also combines principles from service design, which is a process in which a designer focuses on creating the optimal service experience, with existing tools like customer journey mapping and stakeholder mapping. Within service design a commonly used tool is the "blueprint", which is a process chart (much like a customer journey map), which shows the service delivery process from the customer's perspective. There's generally a part to the map that indicates the "front-stage" (what's visible to the customer) and a "back-stage" (what happens behind the scenes) (See Fig. 6-4). These front and backstage serve as a basis for the "internalise" and "inquire" phases of the UNI canvas which will be explained in the next section together with examples that illustrate the meanings of the phases together with possible uses.

6.3 How does it work?

The UNI canvas consists of three phases and a final pitch which logically follows from the results of the three phases (see Fig. 6-5) . The first phase is called immerse, in which the aim is to find out who your customers are, and what their goal(s) are. The second phase is called internalise, in which the goal is to understand what their current experience is in order to reach that goal and to understand which pain(s) they experience in reaching that goal. The third phase is named "inquire", which revolves around understanding what the underlying systems and processes are for a particular pain (and thus part of the customer journey), and who is needed to improve that part of the customers' experience. Lastly, the pitch stage is all about finding support for the problem and getting approval from the grid to solve it. Each of the phases has their own tools, templates and steps which will be described next. See Appendix X, for all the templates that are "attached" to each of the stages which wil be discussed next.

Fig 6-5 "Phases in the process"

Immerse — Internalise — Inquire — Pitch
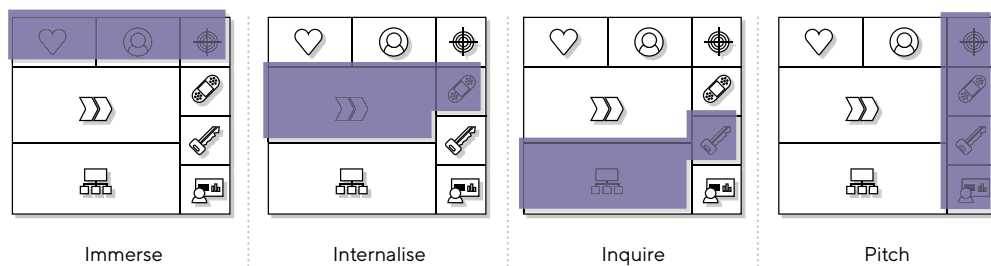
Immerse

Who is your customer and what is their goal?

Start here	Empathise	Personas	Goal
before you start	*find out who uses your products*	*find patterns and differences*	*find their goal*
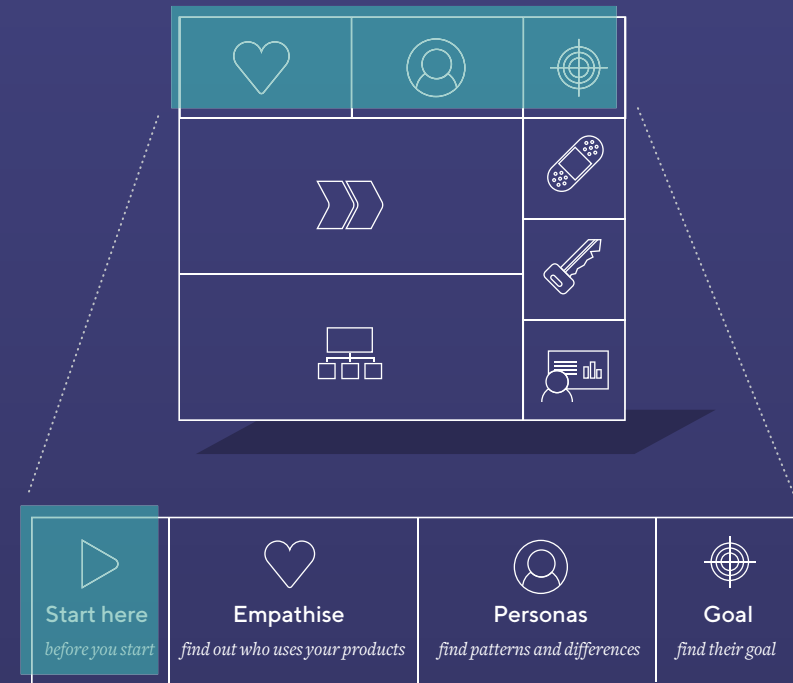
Goal	To find a specific customer/persona with a particular goal you want to help better achieve that goal.
Outcome	A User Need Story, which captures which customer you're going to focus on, what their goal or need is and why it's important to them.
Roles	Facilitator, Researcher, Data Analyst/Scientist, Designer (UX), Strategist
Materials	Printed Templates, Post-its, Recorder/Camera, Wall or Room Space, Pens and Markers
Data	Interviews, Observations, Data Analytics (usage), Trent Reports, Competitor Analysis, Generative sessions.
Time	**1 - 2 weeks |** This process can take several weeks as it also includes the data collection for al the tools and templates. Take enough time to immerse yourself into the lives of the customers.

Define a scope, what product are you focussing on?

▷	♡	◎	◈
Scope	Empathise	Personas	Goal

Who are the customers that use this product?

▷	♡	◎	◈
Scope	Empathise	Personas	Goal

Find patterns in the data and create personas

▷	♡	◎	◈
Scope	Empathise	Personas	Goal

Select a persona and their goal, define their user need story

▷	♡	◎	◈
Scope	Empathise	Personas	Goal
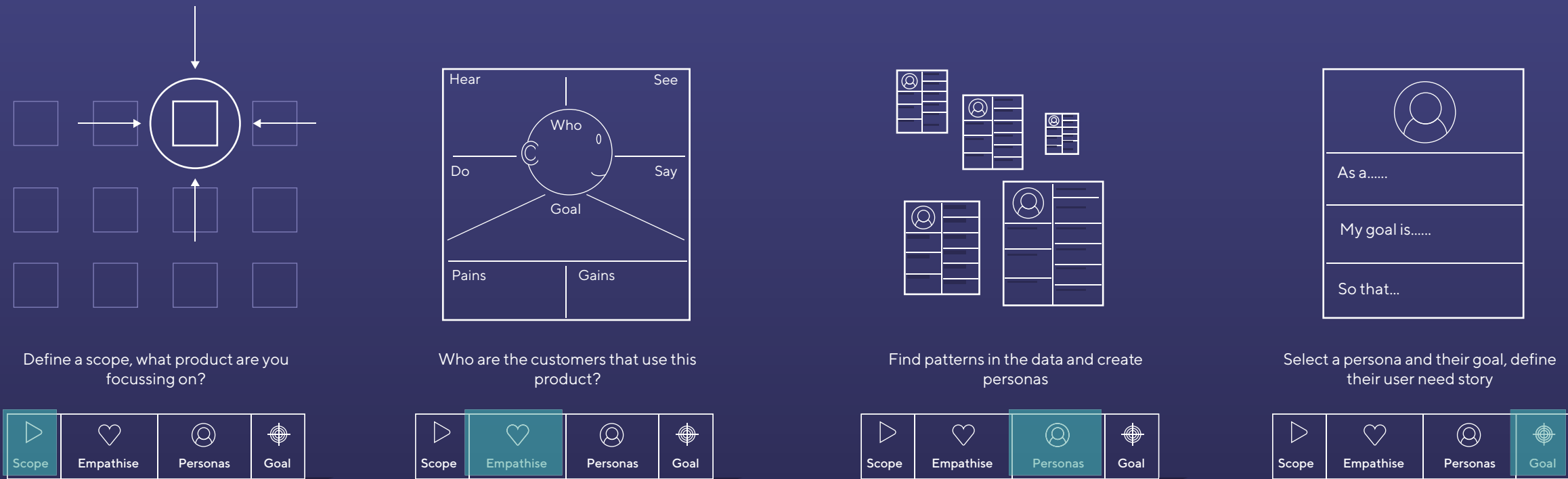
Fig 6-7 "Steps in the Immerse phase"

The first phase, as mentioned earlier is all about finding out who the customer is that's using your product. Understanding what their needs are and in what context they are using the product (See Fig 6-7). In order to better understand and segment the customers a set of tools is handed to the ABN AMRO grid employees. For each of the stages in this canvas a separate template is provided, that has examples and example questions on them.

Scoping

The immerse phase starts off with a scoping, understanding what product the ABN AMRO grid employees need to start thinking from. A decision is made explicitly to start from a product perspective as that's the context which is known for most of the ABN AMRO employees and feel most comfortable with. During the immerse phase they're slowly pulled and expected to move out of that product focus. Together with that scoping, there's a "signal"-section which should be filled out to understand why you're choosing this specific scope and what makes you look at it in the first place.

Empathy mapping

As a next step in the process the ABN AMRO grid employees will collect data about the customers that use their product. If we take the "mobile banking app" as an example, data should be collected about the usage of the app and different types of people that use it. That data can be mapped onto the "empathy map", which is a tool for mapping user insights and gaining a deeper understanding of users. With the empathy map as a base different persona's can be created based on patterns which are seen in the empathy map. See an example in fig. 6-8 of an empathy map of a young ambitious student who uses the mobile banking app.

Persona building

A persona is a fictive customer who is a representation of a larger group of customers who might use the product. Based on the patterns in the empathy maps, persona's can be created. These persona's help in empathising with the customer, what their situation is and in what context he/she uses the product. In the example in Fig. 6-9 , Andre Hitcher, a tech savvy student, loves going out with family and friends and generally only uses his mobile app to check whether he has enough money to pay for unexpected expenses like dinners or drinks. This context helps in understanding how this person uses the app and how we might better help him in this context.

Prioritisation & selection

If done correctly based on a large amount of data, multiple persona's should come out of the empathy mapping and persona building. Based on strategic priorities in the grid and also based on aspects like the expected size of the persona group. A decision is made on which persona and which of their goals will be focussed on.

User Need Story

Once a selection is made of the persona and the goal, a user need story is created, which describes the selected persona, in what context he or she is in, what their goal is and how it will help the persona when the goal is reached. The format is taken from User Stories generally used within agile setting, and is thus known among ABN AMRO Grid employees.

Checkpoint

Every phase finishes with a checkpoint in which some pointers are given to remind grid employees to check the quality of their work. As was found in research, ABN AMRO employees like the comfort of checklists and structure and therefore this list was added. This is however not a mandatory list and should solely serve as inspiration
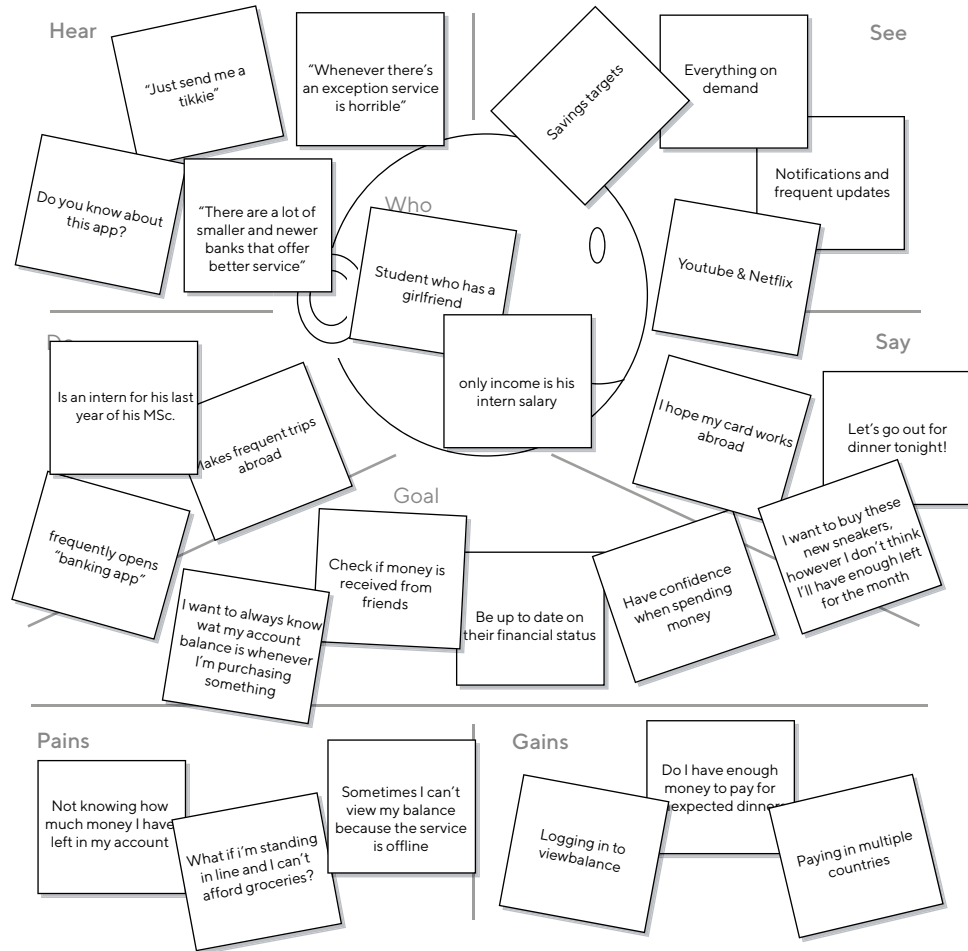
Fig 6-8 "Example Empathy Map"

Fig 6-9 "Example Persona"

Internalise

What are the current pains in reaching their goal?

	Start here *before you start*	**Customer Journey (as-is)** *Discover pains in the current journey to reach their goal*	**Pain** *select a pain to solve*
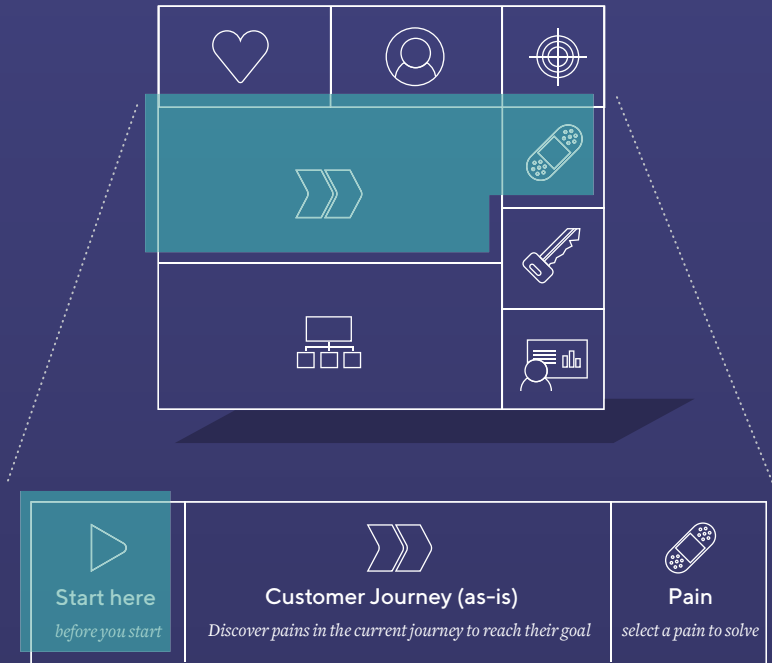
	Goal	Selecting a specific pain in the customer journey that is going to be solved
	Outcome	A selected and described pain that's going to be solved using the pain selection template
	Roles	Facilitator, Researcher, *Business Developers*, Designers (UX, UI, Service), *Business Architects*
	Materials	Printed Templates, Post-its, Recorder/Camera, Wall or Room Space, Pens and Markers
	Data	Interviews, Observations, Experience (the experience yourself) exercises, Generative sessions.
	Time	**~1 week |** The mapping of the journey is heavily dependent on the size of the goal you're trying to map. The suggestion for now is a week (longer with multiple scenario's probably)
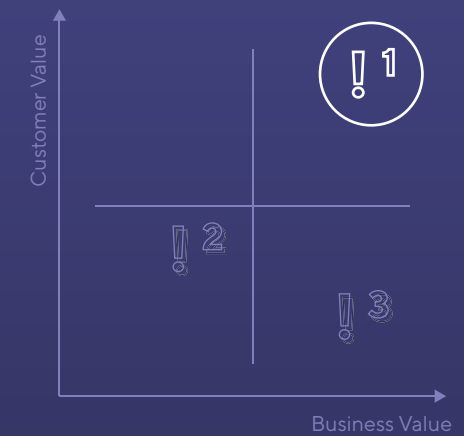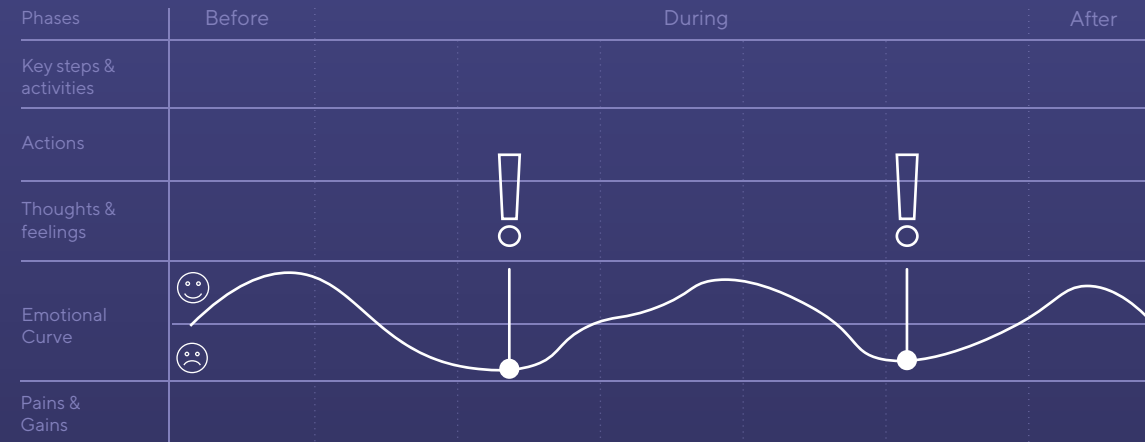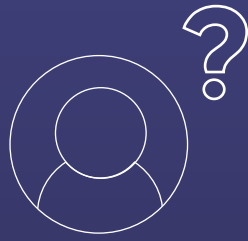
Who is the customer we're doing this for?
What is their goal again?

Remind | Customer Journey (as–is) | Pain

What is their current experience in reaching their goal? Where are they experiencing pain?

Remind | Customer Journey (as–is) | Pain

Which of their pains they've experienced in reaching that goal do you want to solve?

Remind | Customer Journey (as–is) | Pain

Fig 6-10 "The internalise Phase"

The second phase is all about understanding and mapping the current experience in achieving the goal the customer has. In order to achieve that goal, multiple pains can occur along that customer experience (Fig 6-10).

Customer Journey Mapping

In order to find out where pains occur in trying to achieve a goal, multiple ways of collecting data can be utilised. Through observation of customers that fall within the "persona" description" and by going through the experience as an ABN AMRO employee, the journey can be mapped and pains can be identified. For example, an entrepreneur whose goal it is, to stay updated on the latest developments on his account might experience pain points when logging into the mobile app and also in that same journey when he has to switch between multiple accounts to see the transactions.

Problem & Pain valuation

Once multiple pain points are identified, they can be valued on (in this canvas), a two by two matrix in which the problems are valued on customer impact (how much will it impact the customer experience when we solve this problem?) and business impact (how valuable is it to solve this problem for the business?). The customer will be able to rate the problems themselves and as a business (based on strategic priorities), an estimate can be made how valuable it would be to solve the pain/problem. See Fig. 6-11 for an example template

Checkpoint

Just as with the immerse phase, a checkpoint will make sure to remind the ABN AMRO employee of possible "blind spots" in their approach or let them critically reflect on the work they've produced.

Fig 6-11 "Pain Selection Template"

The journey of getting divorced

In the picture below (Fig 6-12), you see a team of ABN AMRO employees talking with a customer (during the workshop I facilitated). To give an example of how fragmented and non coherent processes and customer journeys are within ABN AMRO sometimes , is this example of a recently divorces man. In order to get everything arranged (mortgage, joint account, insurances, etc.) he had to call over 5 departments, make several visits together with his ex wife (all with different departments), and still even after 3 months, his ex still has access to his savings account through the app. He expressed his frustrations and amazement as to how difficult it was to get everything arranged.

Fig 6-12 "A customer expressing frustrations"

Inquire

Who do we need in order to relieve the customer from their pain?

	Start here	Business & System Journey	Stakeholders
	before you start	*Map the processes and systems connected to the pain*	*Define & inquire*

	Goal	To understand and identify the stakeholders in related to the pain that needs to be solved
	Outcome	Stakeholder map with an early inquiry of key stakeholders. Based on this a indicative go/no go for further solution finding.
	Roles	Facilitator , Designers (UX, UI, Service), Business Architects*, IT Architects, Software Developers,* Business Developers*, Business Experts*
	Materials	Printed Templates, Post-its, Recorder/Camera, Wall or Room Space, Pens and Markers
	Data	Interviews, Document Analysis, System an dProcess Analysis, Focus groups
	Time	**1 - 2 weeks |** Take enough time to map the architectures underlying the pain. This process is likely going to take longer if this is the first time you're making an assessment of the systems and processes you're reliant on.

Who is the customer we're doing this for?
What is the pain we're trying to solve?

Remind | Bus. and System Journey | Stakehld.
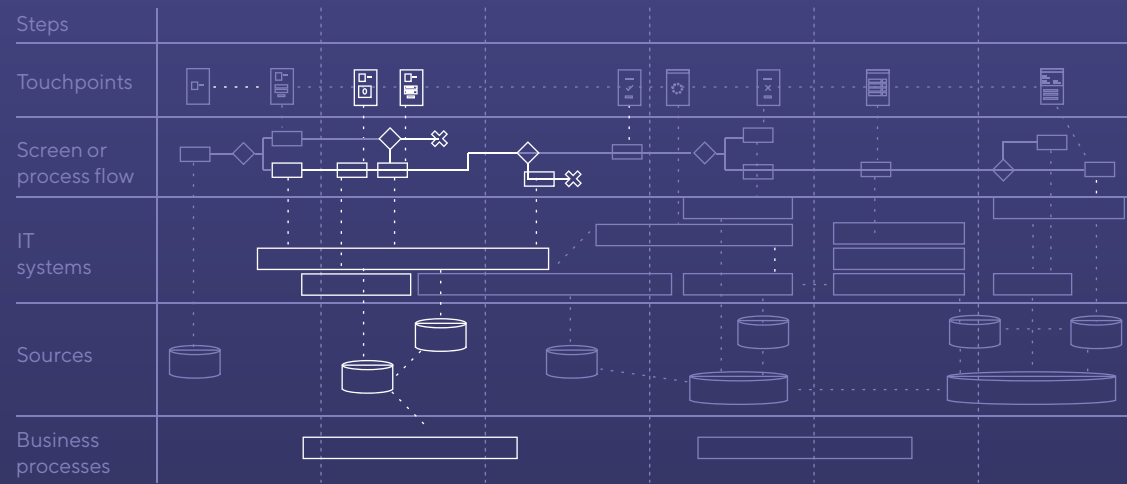
What are the underlying systems and journeys? And who are responsible for those?

Remind | Bus. and System Journey | Stakehld.
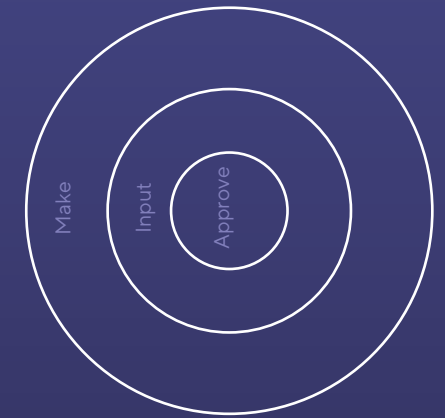
Which stakeholders are needed if we want to solve the pain?

Remind | Bus. and System Journey | Stakehld.

Fig 6-13 "Pain Selection Template"

The third phase is about discovering which underlying systems and processes are causing the pain. Based on these systems, crucial stakeholders can be identified which are needed to solve the issue.

IT system mapping

Because ABN AMRO's IT landscape is so complex, it's crucial to find out which systems underlie the specific pain point. Through expert interviews and system analysis, based on the screens or IT systems used at that pain point. A better understanding can be achieved of what needs to be changed in order to improve the current experience (IT wise).

Business process mapping

Next to the complex IT landscape, ABN AMRO also has to deal with many traditional as well as current business processes. An example would be for Mortgages where some of the contracts go back 30 years, which means that if a change is made to the service where you can amortise part of your mortgage, it has to take into account all the different options and types of mortgages that have been made, even the ones from 30 years back. Another example of a business process would be an after service call based on a question that was submitted in an online form. Therefore it's important to inventorize what kind of business processes and components will be related to a specific pain.

Stakeholder mapping

Once all stakeholders are identified around a specific pain, a selection and prioritisation can be made according to their share/importance in solving the pain (See Fig 6-14 for template). Compliance for example is a stakeholder that in nearly all cases has to approve, however is a stakeholder that is not key in solving a particular problem. However if as a grid, savings & deposits, you're planning to build a new savings product for "friends in a bar", where they can create on demand "money pots", it's crucial to involve the grid that's responsible for the mobile banking app if you're planning to implement it in that app.

Checkpoint

Just as with the Inquire phase, a checkpoint will serve as a reminder before the final problem is pitched during the grid sync.

Fig 6-14 "Stakeholder Selection Template"

Pitch

Are we going to solve this pain?

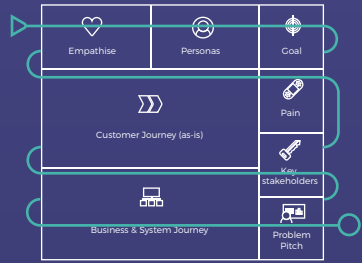|	
Goal	Who is the **customer** and what is their **goal?**
Pain	What **pain** do they experience in achieving that goal?
Key stakeholders	Which **stakeholders** do we need in order fix the pain?
Problem Pitch	**Pitch** the problem to the grid. Do we want to solve the **problem?**
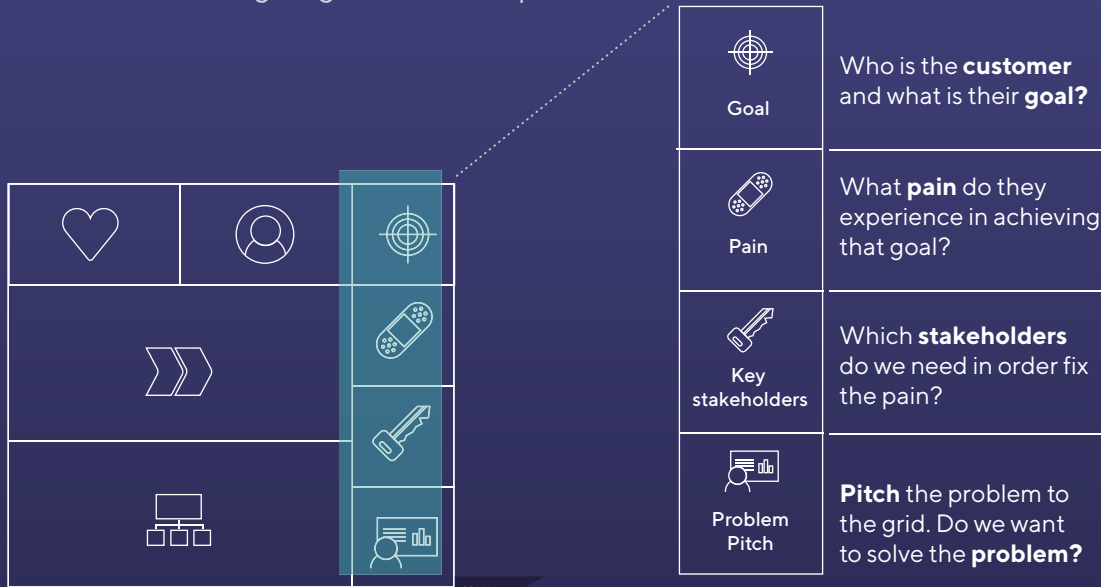
The outcomes of the three phases can be viewed as a standard format for the problem definition (See Fig 6-15). In the immerse phase a user need story was defined. In the internalise phase the problem/pain was identified that withholds the customer from (optimally) achieving that goal. And finally the inquiry phase gave insight into the internal stakeholders which are needed to solve that pain.

Taken from the double diamond model, the problem definition finishes with a "How Might We"-statement that directly feeds into solution finding and is advised to be pitched during a Grid Sync, a meeting where work is prioritised for the entire grid. There are three options at this point:
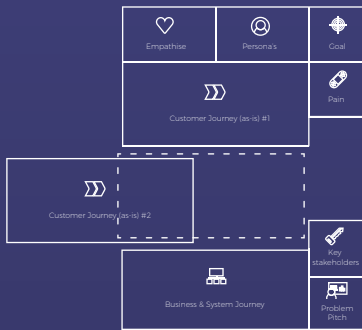
- **Grid sees value and approves** - Once the grid approves of the problem and sees value in solving it, it is taken into the Grid Backlog as either an Episode (3 months - 1 year of work) or an Epic (1 month to 3 months of work) to be solved and built, based on the size and capacity in the grid.
- **Grid sees value and disapproves** - If the grid sees value in the problem definition however doesn't have capacity to solve it or foresees that the solution might go way beyond the grid or even has the potential to grow into a seperate business, it can be used as input for H2 labs. The UNI canvas is in alignment with the "problem fit" requirement of the H2 labs and thus can bypass this first stage in this process.
- **Grid doesn't see value and disapproves** - Any further developments and efforts towards this problems stop and no further steps are taken to define a solution.

Problem Pitch Template
User Needs Integration Canvas – Pitch

Team ☐ **Date** ☐

The Customer
Who is the customer you're trying to help?
What makes him or her special?
What is the story behind this customer?

Their Goal
What are they trying to achieve? What is their end-goal?
What is the situation the customer is in?
When would the customer be successfull?

Their Pain(s)
What is the pain they're experiencing in trying to reach that goal?
Where in their journey does that pain happen?

The Proof
How many people are experiencing this pain?
What value does it bring ABN AMRO in solving this pain?

The systems and processes
Which systems and processes are related to this pain?
Which of these processes and systems are crucial?
What impact or influence do you have on those systems?

The stakeholders
Which specific stakeholders are needed to solve the pain?
Which of the stakeholders identified have been contacted and who is willing to help?
Who of the stakeholders identified, are you not expecting to give support?

The challenge
So what is the eventual challenge or problem your trying to tackle after having inquired and involved stakeholders?
How would you define the challenge in a "How Might We"-format?

Next Steps
Are you going to go forward with solving this problem/pain? Why or why not?
What are the next steps after you get approval for solving this pain? What is the plan?

Immerse — Internalise — Inquire — Pitch
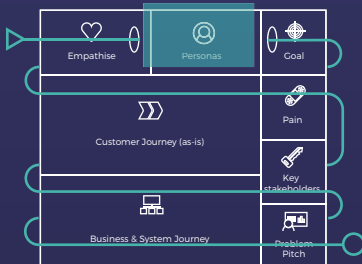
Fig 6-15 "Problem Pitch Template"

From beginning to the End

Adding Elements

Skipping Phases

Skipping Elements

6.4   How could I use it?

As mentioned earlier, the canvas can be used in multiple ways. Whilst it's recommended to go through the canvas from the start there are scenarios where you can skip parts and add parts. Some examples will follow below (See Fig 6-16). Though canvas is designed around a process and built on the sequencing of the processes. Therefore it's recommended to follow the process all the way through. You could of course pick parts and elements from the process, however it's most effective if the sequencing of the process is followed. Most outcomes of the suggested steps also lead into the subsequent steps. If you decide to only use certain parts of the canvas/process, be aware that you'll have to use and select different ways of gathering these inputs (maybe ones that are more to your liking)

What if there are multiple customer Journeys?
If you have multiple scenarios for the goals your chosen customer is trying to achieve you can make the decision to add another "Internalise phase"-canvas. An example where this might happen is for "checking the conditions of my insurance", which can be done through visiting one of the branches and asking the employees, whilst it's also possible through online banking on the website. Besides adding a customer journey, It's possible to add extra elements from the canvas, for example if you're mapping the system and process journeys for multiple pains or if there are multiple stakeholder maps needed to better capture the problem. You could even add elements that are not in the process at all, like a scenario mapping, where you visualise the multiple scenarios of achieving a goal before you start mapping more in detail journeys.

What if I've already found a pain in a customer journey?
Firstly, if a customer journey has already been established and the pain has been identified and validated, you can skip the immersion step and move on the the "inquiry phase". Secondly, if you've done all the steps up until the pain identification, and during the "inquiry phase" you find out that the pain you're trying to solve is currently too complex to solve because it is running on old systems which won't be updated until next year, you could select a new problem from the existing problems you've found and do the "inquire phase" again. The main point here is that certain sections in the canvas can be used in isolation.

What if I' already have my persona's?
You could skip the persona exercise if you're confident that the persona's you've defined give you enough contextual information about the product or service you're trying to improve. A recommendation is made to still do the empathy map to understand/refresh the goals they have.

What if I already have a problem I want to solve?
If there's a problem your grid is trying to solve or has a solution to, however it's unclear for whose problem this actually is and what goal it is serving you could use the canvas as a way to validate the problem you're trying to solve. Given you've already mapped and inquired the internal stakeholders for this problem, you could go through the immerse and internalise phase to make sure the problem your trying to solve fits with the customers that use your product and if they perceive this problem to be crucial. See figure below

What if I like to use some other methods for empathising?
The canvas provides tools with certain steps and stages in the process, however you're not forced to use these. If you and your team are used to working with the value proposition canvasfor example you could substitute parts of the UNI canvas for that method as well.

We always do something up front that's not in the process, what do I do?
If you and your team generally have other steps in the process as well, feel free to add or tailor them. I can imagine that you would want to establish a vision up front if the product you're going to use the canvas for doesn't have one yet. Just add it up front. Or if you like to understand the market better, for a more in-depth description of your persona, feel free to add a market research stage. You can add stages anywhere you see fit.

Our team is already quite mature, how can it be valuable to us?
The canvas has different levels of information and knowledge. If your team is already quite mature, you could just pick those elements which you like or use them as inspiration. Just download the Empathy Map Template and use that in a way you think will be valuable to your team. Don't be overwhelmed by the detailing of the process steps. If you don't need them, don't use them!

As validation

Substituting Phases
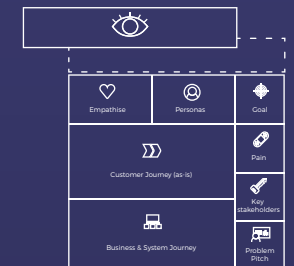
Adding Phases up front

Picking what's usefull

Fig 6-16 "Example uses"

6.5   Where can I find it?

The canvas has been compiled into an interactive PowerPoint so that it's easily shareable within the organisation (See Appendix Y for the full powerpoint). Within this PowerPoint you're able to download all the respective templates you need for each of the steps. These templates can also be found through the Connections Webpage (see Fig 6-17), that everyone has access to and is the main knowledge sharing platform within ABN AMRO.
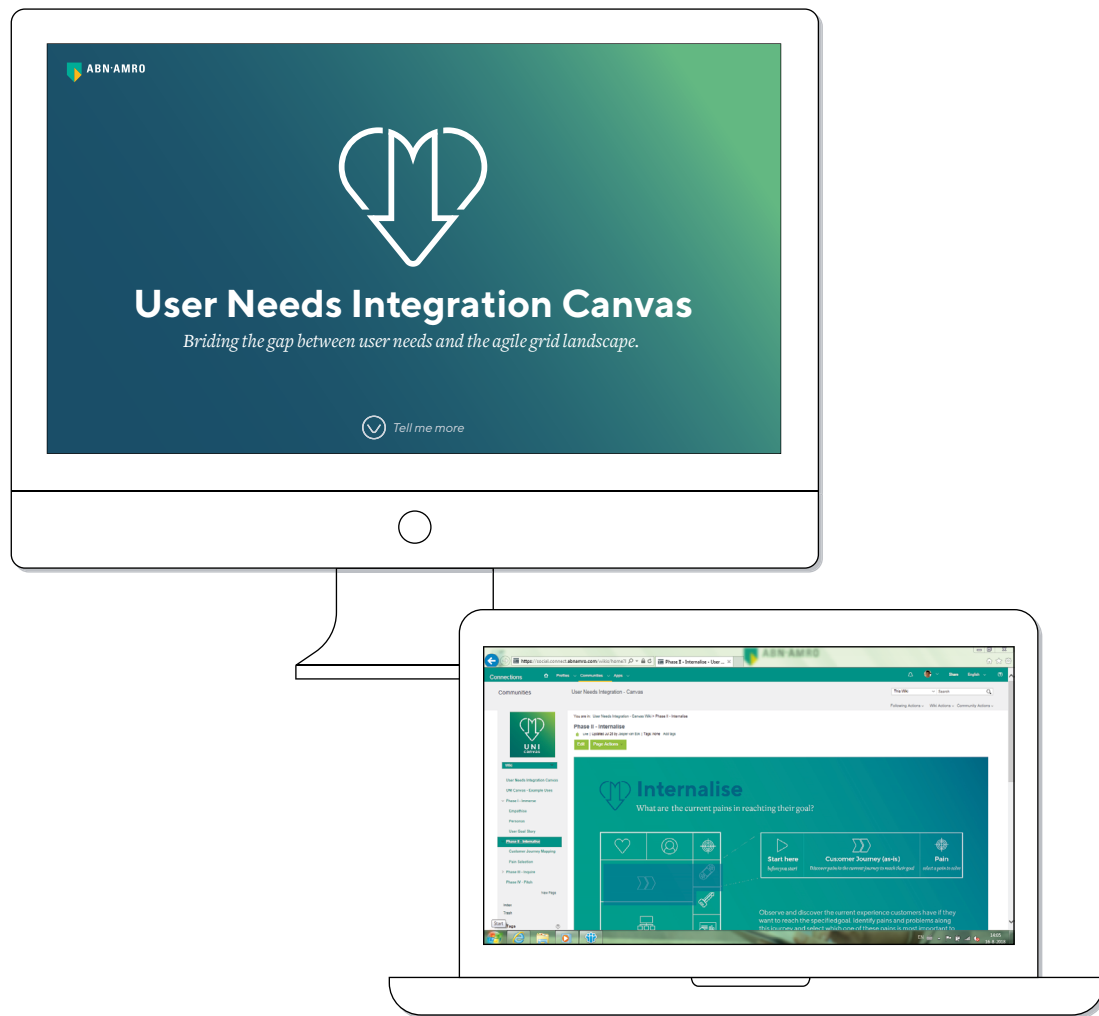
Fig 6-17 "Powerpoint & Connections webpage"

6.6   Solution in context

From the get-go the solution had to fit within ABN AMRO's current context. Based on all the data collected in the first sections of this project, the context into which the solution had to fit could be sketched. Most of these requirements have been highlighted in the "Define" Chapter as part of the design challenge. Table 6-18 & Fig. 6-19 show how the User Needs Integration Canvas fits the existing context of ABN AMRO.

| Visual	Requirement	UNI Canvas
	The solution had to account for the existing Strategic Innovation Portfolio process that is focussed on H2 innovation.	The solution could loosely be described as a zoomed in "problem-fit"-phase which is already used within the H2 Labs. Only in this case the solution is tailored to the agile organisation.
	ABN AMRO employees lack experience with discovery tools and explorative processes. The solution needs to be clear and teams should be able to autonomously use it.	Every tool had been filled with example questions and information on how to use them. However as will be later discussed this doesn't seem to be enough.
	Existing processes and artefacts of the agile way of working should be accounted for in the process. It should fit in sprint cycles, strategic priority meetings, etc.	Timeframes for each of the phases are indicated in the canvas using "sprints". Still the nature of these exercises makes it difficult to pinpoint exact durations. The outcome of the canvas is a problem definition template that can be used as a basis for pitching during the Grid sync or PO sync meetings.
	It should easily be shareable and fit in the knowledge sharing style of ABN AMRO employees.	The canvas explanation is presented in the form of a powerpoint, which is the a widely used communication format within ABN AMRO. The Canvas can easily be shared through email. In addition. A connections webpage houses the canvasses, which is the main place for document and knowledge sharing within ABN AMRO.
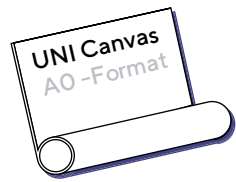
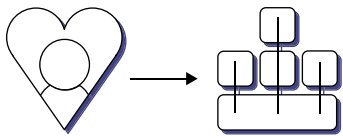|		
	Utilise the co-located nature of the teams and the "visual" way of working they've adapted.	In the agile transformation, visual and physical representation of work is used. Teams are colocated and have access to plenty of large paper formats and markers. In addition. ABN AMRO houses a print shop in their building which makes it very easy to print large-format.
	Account for the divergent needs and maturities of the teams in the entire agile organisation.	Different ways of usage are presented in the manual/powerpoint. The canvas is set up in a "modular"-way, so more mature teams can pick elements which they like. However for less mature teams, they can follow the entire flow of the process from beginning to the end.
	The complex IT landscape should be accounted for and can't be ignored in the solution.	The entire canvas is set-up around translating the customer needs into the complex organisational structure. In the inquire phase, a problem is translated into the systems that underlie it so that the right teams and systems can be identified that need to be changed.
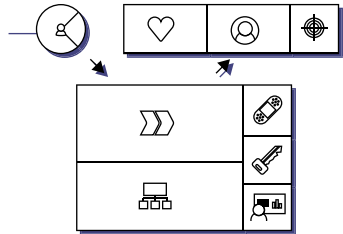
Table 6-18 "Fit with Context"
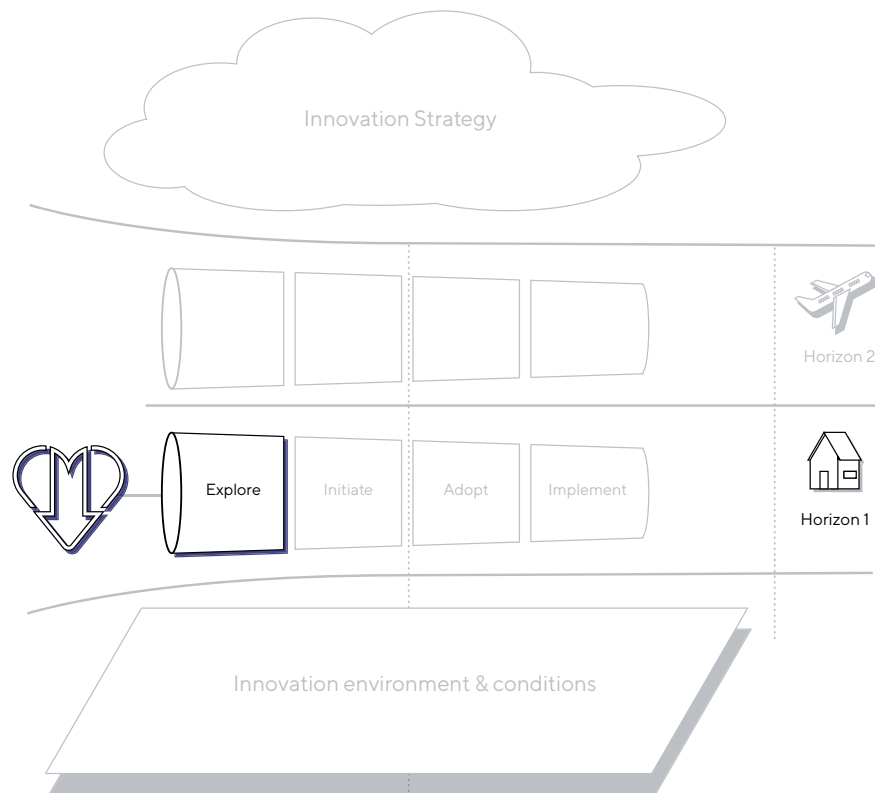
Table 6-19 "Fit with Context II"

6.7 Evaluation & Recommendations

This solution presented in this chapter was the fourth iteration on the canvas and has been subject to a lot of changes. It's important to see whether the proposed solution still aligns with where we left of with the design challenge. The challenge was to design a solution that both stimulated idea owners in the grid landscape to take ownership as well as improve their awareness of customer problems and needs. This solution had to provide clear guidance to enable autonomous and successful realisation of these innovations in the product and system oriented agile organisation. As stated earlier, and covered in this chapter, the solution has to fit the context of ABN AMRO. Based on the four iterations and the learnings from each of them, a general image is painted on whether the solution works and to what extend it solves the problem.

6.7.1 Evaluation

The solution as it was presented has evolved through iterations. For each of these iterations learnings were noted with regards to challenges for innovation management. However in light of the design challenge the solution had to answer to a set of five values which were established in the "Define chapter" and integrated into the design challenge. To proposed solution will be discussed in relation to these values

Value		UNI Canvas
	Recognition/Appraisal	The framework hasn't been tested in full because of time-constraints, so no definite conclusions can be drawn with regards to success. What is known however is, that within ABN AMRO, the not-invented-here-syndrome led to rejection of concepts and ideas. Through early identification of stakeholders and involvement in defining a solution, this challenge is attempted to be overcome. Moreover, examples from the grid landscape where multiple grids came together to collaboratively define a solution, reports of project progression have been positive. Thus a preliminary conclusion is made that the proposed solution will help in achieving overall project success.
	Ownership/Possesion	Taking ownership of customer problems instead of their systems and product seemed to a complex challenge to solve. The Canvas does not attempt to shift their mindset by strictly focussing on the problem, however the results from the sessions showed that there was a strong tendency for ABN AMRO employees to stick to solutions and products. Shifting a mindset orientation is time-consuming, and a canvas on itself is expected to be insufficient in changing that mindset, although it does form a solid base to depart from
	Autonomy/Independency	The canvas in presented in as a structured process, and focuses specifically on internalising customer needs into the agile grid landscape (as that's one of ABN AMRO's strategic priorities). It lays out a process in detail specifically focussed on internalising these customer needs, however does not cater for pure IT or Compliance innovation. The process is designed with actual end-users in mind and should thus be universally applicable, however different approaches can and probably will be more appropriate for these other types of innovation. Moreover, this canvas solely focuses on problem identification and does not (yet) support solution finding. In conclusion, the tool is created with customizability and broad applicability in mind, so that each team can individually determine what they need for the innovation process to be successful, however it's currently biased towards customer centric incremental innovations and lacks the solution finding stage. Thus only providing autonomy to part of the innovation process.
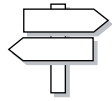
Guidance

The canvas is a specifically laid out process, which can be tailored to the needs of the teams. Even though the UNI-canvas gives in depth knowledge on how to perform each of these steps and how they lead into each-other, observations and other feedback sessions indicated that in some respects still a lot facilitation and more specific guidance is needed with regards to interpreting and understanding steps and templates. As most of the people in the agile organisation have never used these tools and methods before, misinterpretation is highly feasible and not preferable. Whilst the canvas provides significantly more guidance than previously available, still more specific explanations for each of the steps are needed. Moreover, support and facilitation of these processes is a critical element in the successful integration of the solution.
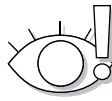
Awareness

The tools and templates included in this canvas are designed around the customer, and are aimed at creating awareness of customer. Especially these tools like the "empathy map" and "Persona's" seemed to resonate well with ABN AMRO employees and really liked how they forced you to think about your customer in a different way. Whilst these tools only have a limited effect on creating awareness, early feedback is positive. Still the danger exists in filling out these tools purely based on assumptions, without actually validating what the customer wants. The difference was clearly perceived in the difference in workshop outcome, which was described earlier in this chapter. True awareness is only achieved through talking with and observing the true customer. The canvas in this sense works as a reminder by introducing customer centric tools, and could potentially lead to better awareness of customer needs.

In review, the solution seems to be of great value both serving as inspiration for more mature teams as well as a detailed process for less mature teams. I've received many requests from all over the organisation to help teams with their innovative efforts and multiple teams have already asked me whether I would want to facilitate the UNI process for them. Whilst this enthusiasm shows that it solved part of the problem, it uncovers an underlying condition for its success. In order for the UNI canvas to be truly valuable, it will need an active facilitator and someone who supports the teams that work with it. Even though the process provides clear handles that allows teams to independently go through it, they still need/want support. This can either mean that teams do want to innovate, however lack the willingness to actively plan and perform these activities themselves. Or the teams aren't mature enough to do it themselves, and thus lack the support they need from the organisation.

6.7.2 Further Development

No solution is ever finished, and neither is the UNI Canvas. Whilst it's showing early signs of being valuable, much can still be improved to make it even more valuable.

- Although the canvas has been shown to multiple people in the company and even part of it tested in a workshop. Still mainly holistic feedback on the entire process was retrieved. Due to time-constraints, as the process takes longer than four weeks to go through, it hasn't been tested in full with the teams. In order to further validate and test the process and its effectiveness, ABN AMRO is advised to do full-length tests with agile teams. Already three teams have requested for this process to be facilitated for their teams, so finding pilot teams isn't expected to be a concern.
- The process on itself is a big pill to swallow and feedback from innovation managers indicated that employees like to cut processes "up into pieces", to make it more comprehensive. The same should be done with the way the canvas is presented. Each of the separate stages should be more clearly presented along with concrete first steps that teams need to take in order to get started with them.
- The canvas focuses solely on the problem finding stage of an innovation process and does not yet include the solution finding stage. Since problem finding was found to be the most important stage during the iterations, the solution zoomed in on this part. Still ABN AMRO is advised to create an extension of this process that does cover the solution development, as management for that part of the innovation process was also found to be lacking.
- The templates created for each of the individual steps have been filled with generic examples. It's advisable for ABN AMRO to tailor these templates to the specific contexts of the grids. So for the mortgage grid, adding examples relevant for buying a house for example. Giving these contextual examples will aid in an understanding of these templates and how they should be used in context. Moreover, the process and especially the tools in the process should be described even more in detail, in order to better guide the teams and to avoid misinterpretation as much as possible.
- The process has been designed from a customer centric design perspective and isn't necessarily the most appropriate approach for innovations that stem from technological advancement or a legislative change perspective. This is limitation of the canvas and in order to better support all innovation within the agile organisation, the UNI canvas or even other processes should be developed that better support those types.
- Since the entire canvas is developed by a single person, the design and selection of it has been subject to bias. Even though the canvas has been developed based on feedback from a wide set of employees as well as innovation managers to avoid that as much as possible, there may still be gaps or areas that are missed. For example there might be other ways to better capture customer needs which are overlooked. Next to that there might be crucial parts or processes in the organisation that are missed or underrepresented (e.g. specific compliance processes or IT value). The recommendation is to let other employees from other departments (that have a crucial interface with the agile organisation) go through this canvas to spot these biases or gaps.

6.7.3 Implementation

In extension to the recommendations for further development, a holistic implementation roadmap is presented to give an impression on how the canvas can be further developed within the organisation (See Fig 6-20). The timeframe will be up until the end of 2020 as that aligns with their strategic priorities as well, however they could also be interpreted as phases with adjustable timeframes. It's important to note that the following implementation plan is solely suggestive and lacks theoretical grounding in many aspects. Many of the ideas and elements have been based on gathered knowledge throughout the project. If the UNI canvas were to be implemented it should be done in an agile manner as well, meaning it'll be subject to a lot of changes. For the "organisation" element, the suggestions are very specific, this is due to the fact that in conjunction with this thesis I collaborated on a project that focussed on how to overcome challenges with regards to VPBs (value proposition blocks).

Phase 1 | 2018

No organisational changes are suggested, the project that ran in parallel stopped as it showed that teams were still adjusting to their current agile way of working and weren't ready for such a change. The development and implementation of software is already covered by the current governance in the agile landscape. The focus in the first year should be on the problem-fit/finding phase, which is covered by the UNI canvas. Therefor multiple pilots should be done with (mature) value proposition blocks to test the process as well as to establish a support base. In conjunction with piloting, improvements should be made to the problem fit phase of the UNI-canvas. Once the problem fit part of the UNI canvas proves to be viable, it should be extended by developing the solution fit part of the canvas. The pilot teams, and other teams who are willing to give it a try should receive a short up-front training to learn to work with the tools that are present in the canvas. In addition, the templates and tools in the UNI canvas should be further tailored to the needs of the specific grids to enhance ease of adoption. The pilot teams all receive a facilitators and researchers, as both of these roles are underrepresented in the current organisation. These skills should therefore be specifically recruited.

Phase 2 | 2019

In the beginning of 2019 it's advised to use only one Product owner on a pool of people, who based on the items in his backlog can decide which employees should be assigned to a project or backlog item based on the type of work and the phase in which the project is. There will be less handover as there's one PO who, together with his/her team(s), are responsible for items from problem discovery up to implementation. The discovery and development isn't done by a two different teams who are fixed. After the problem fit phase of the governance is communicated widely internally (using the pilots as proof), the focus shifts to "implementing" the solution fit phase. Whilst teams already come up with solutions, there is no structure to this (yet). In this phase the solution part of the canvas should be tested in a similar fashion to the problem fit part, through piloting and training sessions. In addition after the solution phase has been piloted, it will subsequently will improved based on feedback. As the solution phase proves to be valuable, further extension of the

UNI canvas or new processes should be developed to support all types of innovation or work (e.g. legislative, technical). To further stimulate creative skills, creative facilitation and ideation, workshops can help in communicating creative tools, improve creative thinking skills and to create exposure for innovation internally. As this phase is focussed around implementing the solution-fit stage of the innovation process, a recommendation is made to acquire more designers (both user experience and visual designers). These designers are first assigned to the pilot teams however later on, together with the researchers and facilitators recruited in phase on, help with the facilitation and implementation of the innovation process throughout the entire agile organisation. It should be noted that these designers, researchers and facilitators are hired for their facilitative and educative skills as well. Their responsibility is to spread their competences and skills within teams and thus should be hired specifically on that trait as well.

Phase 3 | 2020

During 2020 it's recommended to move to an organisational structure that's fully centered around the customer. A suggestion here is to use Customer Journey Owners, people who are responsible for a larger journey that covers multiple sub-journeys. Such as for example "buying a house" as a main journey, with sub journeys such as "orientation", "altering my house", "a house as investment". Each of this sub journeys has their own Product Owner, and based on the project, and the phase it's in the Customer Journey Owner together with the Product Owners (better said: Journey Owners) decide which employees are allocated to which project. This way of organising also allows ABN AMRO to prioritise based on customer journeys, enforcing decisions based on type of customers as well. However before teams move towards this model of organising, it's recommended to have several things in place first. Similar to the problem-fit phase of the innovation process, the solution phase needs to communicated firm-wide after proving its added value. In order to avoid the danger of solely focussing on customer value (and neglecting IT and business architecture) due to the organisational structure, the extension to the UNI canvas or extra processes that are developed specifically for other types of innovation / work in phase two need to be piloted. After piloting these processes should be communicated and shared company wide, in a similar fashion as the other stages of the innovation process. Integration of the new and existing innovation processes is imperative. In addition extra measures are such as flexible stage gates in between innovation stages are recommended, to continuously focus all efforts towards what's valuable and most important to the customer. And performance measures or incentives that stimulate customer centric behaviour on a company wide context (in order to avoid siloing). Teams should be given further support and training, however more on an inspirational level, by highlighting new tools or methods that might help teams in their innovation process. Teams should be encouraged to help each other in becoming more customer centric as well. Effective Customer Journey Owners, are customer centric leaders and visionaries. ABN AMRO is recommended to acquire these individuals from outside the bank. Simultaneously, training and support should still be given to further.
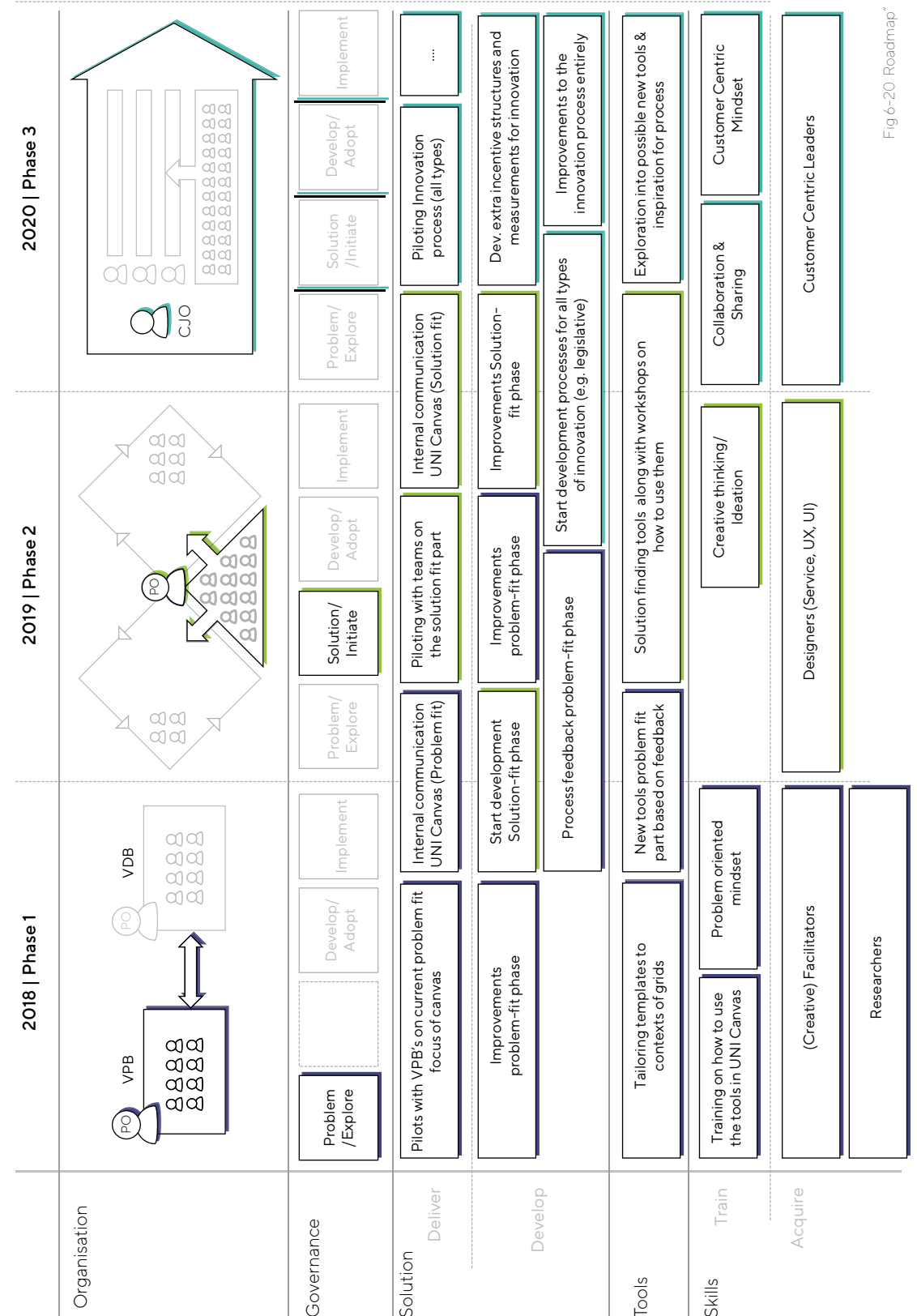

Fig 6-20 Roadmap

6.7.4   Further limitations & recommendations

ABN AMRO's strategic priorities towards 2020 were to deliver faster, innovate & grow, and to improve their customer experience. Based on the research in the first chapters six challenges were identified that hampered ABN AMRO in doing so. The UNI canvas focussed on solving part of this problem, namely the three challenges; "governance on innovation in the agile organisation", "deficiency of exploration skills", "getting innovation on the backlog". The UNI canvas is a process that helps teams in bridging the gap between user needs and the internal organisation. It attempts to do so in three phases; immerse, internalise and inquire. Each of these phases offers templates and tools so that teams can autonomously find out who their customer is, what the problem is they want to solve and who they're going to solve it with. The challenges "Lack of clear guidance & leadership on innovation", "Dependencies & Limited Autonomy", and "Organisational and Cultural legacy" were thus out of scope for the canvas. It's therefore important to understand the limitations of the canvas and find appropriate recommendations for ABN AMRO in light of their strategic priorities and the challenges found.

The UNI canvas did not take into account the "lack of vision and strategy"-challenge, however seems to be influenced by it nonetheless. Especially the scoping and prioritisation was experienced to be difficult without clear strategic boundaries to prioritise against. On the contrary, this could also possibly indicates a lack of risk taking and entrepreneurship amongst ABN AMRO employees, it's evident that something needs to be done. Establishing a clear vision and strategy for innovation has already been stated to be beneficial, ABN AMRO is recommended to create this vision on a company wide level or support teams in establishing their own vision to help them traverse fuzzy and chaotic processes.

In an organisation the size of ABN AMRO it's unrealistic for a single team to possess all the skills and competences needed to have full autonomy and end-to-end responsibility from customer need to implemented feature. In addition, one cannot expect all team members to have all competences ranging from discovery to coding skills. The canvas addresses this by indicating different roles in different parts of the process. The canvas is however limited as it only looks at a certain part of the entire innovation process and does not neatly align with the way the teams are currently organised. Beyond further developing the canvas, I would recommend ABN AMRO to investigate which roles are needed in which phases of the project. In order to account for the shifting in roles that will need to happen, ABN AMRO could possibly use a "pool"-model where based on the task or project at hand, employees are pulled into or out of a project. Eventually ABN AMRO could better organise for autonomy on customer journeys and end-to-end value streams, this is observed to help deliver customer centric innovations faster in other organisations as well (van de Kamp, 2018; Nap, 2018). Having customer centricity as one of their strategic priorities, ABN AMRO needs to put the customer at the center of the processes and organisational structures they employ, instead of around the products.

The canvas stimulates a better awareness of customer needs, however other results showed that the solution oriented mindset was still persistent within the company. The canvas is expected to have a limited effect on mindset and actual behaviour of employees. In order to break through this cultural legacy, ABN AMRO is recommended to rely more on the "innovation" pioneers in the agile organisation, a method recommended by Staes (2018) as well. During the time at ABN AMRO it became evident that there are teams who are very enthusiastic about Design Thinking and Lean Startup as ways of working for example and have already started to work that way. ABN AMRO should foster these innovators and early adopters and should use them for further integration and spreading of the importance of (customer)-discovery processes. In the hands of these pioneers, the canvas can serve as a nice springboard for skeptics to ease into the new way of thinking.

The canvas aims to grow the skills and knowledge of ABN AMRO employees by giving them structure and guidance in using new tools and processes. This process is limited in its static nature as the tools attached to it are fixed and specifically focuses on customer discovery skills. In order to innovate, and become customer centric, both the process and tools attached to it should be continuously updated to reflect the dynamic nature of skill learning. Moreover, the skills needed for innovation will change over time based on the environment. ABN AMRO is therefore recommended to find ways to continuously grow new competences within the firm as well as change

them as their environment does. A possible start is to look at theories related to dynamic capability development (Lawson & Samson, 2001). Moreover, the canvas requires an active learning attitude of employees. So far results have shown that support and stimuli are needed for employees to get involved with developing new competences. Whilst relying on an individual's active approach to develop the right competences is possible, ABN AMRO is still recommended to take an active approach to develop competences on a more holistic level. To make sure that on a company wide level, the competences are appropriate for the environment.

The UNI process integrates some elements that help in getting innovation on the backlog, through for example early involvement of stakeholders and the pitching of problems instead of solutions, thereby attempting to avoid feelings of "not-invented-here". However what this model doesn't account for is the autonomy and mandate that for instance Product Owners and Grid Owners have when it comes to prioritising work on their own backlogs. In this light, a canvas and process can only help innovation get on the backlog to a certain extent. There are other types of challenges that withhold innovation from getting onto the backlog. Therefor, ABN AMRO is recommended to look into other governance structures, incentives or other processes that could further help stimulating innovation and customer centricity on the backlogs.

A lack of processes and governance are easily filled, this is part of what the canvas tries to cover for. Whilst it does provide value to those who need guidance and structure, one must not forget there's a limit to what processes and governance structures can do. If an individual doesn't believe in a particular process or maybe even a direction a company is taking, you can create all the processes you want to no avail. Process and governance should merely serve as a means to an end, as an amplifier and channelisation for all the skills and knowledge in the company. Although investing in creating processes and governance that are conductive of innovation is important, investing in the people that use these processes and governance structures should be more important. As the title of an article on a large scale agile transformation reads: "It's not the pants, it's the people in the pants" (Goodman, 2008)

Fig 6-21 "Film crew taping ABN AMRO employees working on the immerse canvas"

VII Discussion & Conclusion

7.1 Discussion

The financial service industry is under pressure, and due to external treats like new entrants, legislations and technological developments this will only continue to increase in the coming years. In order to survive, traditional financial services firms will have to innovate in ways they've never done before. One way in which they're responding to this environment is by becoming more agile themselves. In recent years, large scale agile frameworks gained popularity as a way to become more agile and responsive to the changing environments. The goal of this thesis was to understand the challenges for managing innovation in these large scale agile organisations as well as help ABN AMRO by developing an innovation process that fit within the context of their large scale agile organisation, which was discussed in the previous chapter. The study expands the scare body of literature of both large scale agile implementations, innovation management within the financial services sector, and is the first to connect both of these in a single study. In addition, these findings will help firms that are engaged with (or plan to do in the future) large scale agile transformations in avoiding common mistakes and define mitigation strategies to work towards the end goal, which of course will always be; survival.

This goal was approached from three different angles; challenges in a large scale tailored agile organisation, challenges for innovation management in a financial services firm, and through the development and testing of an innovation process. The findings have been based on an in-depth exploratory case-study of ABN AMRO and generalisability of these findings is limited. By linking the findings to existing literature and external interviews, an attempt is made to improve upon the limited generalisability. Though the following findings will hold most relevance in the context of large traditional financial service firms.

A lack of clear vision and strategy on innovation was a challenge found within the case company, in literature as well as in other companies. Both the fact that the financial services sector lack innovation legacy, and a deficiency of senior management support and knowledge on innovation have been found to contribute to this challenge. This study finds that this lack of a clear vision leads to fragmentation and diffusion of innovative efforts, especially in combination with the autonomous and self-organising nature of agile times. In the large scale agile landscape this was also found to complicate prioritisation of tasks. Large financial service firms are advised to establish a strong vision and strategy on innovation before moving to large scale agile methods.

In addition, agile principles like autonomy and self organisation are also found to work counterproductive in an organisation where traditionally a restrictive and risk-aversive mindset was common. Whilst teams (generally the PO) have responsibility over their own backlogs, it's very difficult and very uncommon for PO's to prioritise innovation. For financial services firms this problem becomes more relevant as their demanding regulatory environment has a tendency to eat up the top of the backlogs. The challenge in this case is assuring that innovation has a recurring place in the backlog, and in order to do so adequate processes should be put in place or employees in the agile organisation should receive more incentivisation/training to stimulate innovation.

In extension to the challenge of getting innovation onto a backlog, this is further complicated due to the timeboxed nature of agile methods. Items related to more innovative work are generally bigger than the time-boxed sprints and thus easily fall of the backlog. Not only the sizing of these items were found the be a problem, this study found that Agile methods on itself do not cover the innovation management practices entirely. More specifically the front-end of innovation, also generally known as explorative processes, are not covered by standard agile methods. As large scale agile frameworks cover (new) product and software development departments, extra processes need to be put in place in order to account for this shortcoming.

Agile methods are known for their customer centric nature as well. This study finds that within this large scale agile transformation scope did not include departments that are generally involved in retrieving customer insight. Another finding was that within the large scale agile organisation there was a lack of customer discovery skills. The scoping of the large scale agile transformation influenced the overall effectiveness of the agile transformation. In order to successfully manage innovation, purely implementing agile methods won't make the organisation more customer centric. It requires customer centric skills, considerable training and

support in case the organisation does not possess these skills (or did not include them in the transformation). Furthermore, employees in the agile organisation were found to struggle with the fuzzy front-end of innovation processes, and that clear guidance and structure for this was preferable. Whilst this might seem to go against the the values of agile (individuals and interactions over processes and tools), it's important to first understand the basics through following processes and techniques before an individual masters the craft to create their own interpretations and processes. This concept is better known as shu-ha-ri, which is widely known and applied within lean and agile realms and stems from Japanese self defense techniques (Cockburn, 2006). Both literature and findings in this study, indicate that financial services firms lack discovery skills in the incremental organisation and therefore it's recommended to support the individuals with clear structure and processes for the front end of innovation.

To add to the scoping problem, non-agile departments (e.g. departments not included in the agile transformation) can't be left untouched whenever a large scale agile transformation is happening. HR practices and processes for example are a crucial driver for an employee's behavior as well as the selection of new hires. This study suggests that any large scale agile transformation can't be viewed in isolation, especially not since innovation management covers the entirety of the firm whereas the agile transformation might only cover a specific part. The interactions between these traditional parts of the organisation and the agile organisation in many cases lower the effectiveness of the agile organisation. Vice versa, where innovation generally happens on multiple levels (disruptive, radical, incremental) and in different company departments, not having established processes and governances on how these innovation initiatives are exchanged amongst these departments seriously hinders the overall management of innovation. In this case study it has shown to lead to serious implementation challenges, where many innovation initiatives that came from outside the agile organisation but inside the company were rejected. The challenge overall in this case is, defining appropriate firm-wide processes that extend beyond the agile organisation, especially since it was found that for many firms (new) product development is dependent on the resources in the agile organisation for developing and implementing those initiatives.

These interfaces with external departments are not the only challenge for managing innovation in a large scale agile landscape, another challenge found was managing the internal innovation interfaces and implementation. The complex IT landscape has informed many of the organisational design choices during the agile transformation. In order to give teams as much end-to-end responsibility as possible, a product oriented organisational design was chosen. This decision combined with their self organising autonomous status actually fueled organisational siloing. Even incremental innovations are found to have many dependencies, which are found to be avoided by the employees. Even within the agile organisation itself if was found to lead to innovation implementation issues. Many accounted this problem to the not-invented here syndrome and the unsupportive organisational structure. As a result, whenever innovations happen they generally happen within a narrow scope (e.g. a product or a system), whilst they're generally part of a customer journey or value stream, which could possibly lead to suboptimal innovation. The challenge in this case is assuring that innovation happens based on its value for the customer, not based on its ease of completion. A critical element to this is found to be the early involvement of stakeholders in the innovation process, also as a response to the not-invented here syndrome. The extent to which the stakeholders are willing to help, greatly influences the degrees of freedom for a new innovation (especially in established organisations with critical dependencies). Other firms were also found to face similar implementation issues, going from exploration to exploitation or from idea to development, and the the speculation is made that traditional financial services firms will face issues for the implementation of innovations (both radical and incremental). These companies are advised to account for extra efforts that coordinate and stimulate cooperations between these different organisational silos. In addition, organisational structures and processes built around products lead to extra dependencies for customer centric innovation, and it's therefore recommended to design the organisational structures and processes around the customer.

Overall, agile as a method as well as large scale agile frameworks don't necessarily suffice as a way to manage innovation. Especially since innovation management should be approached firm-wide, where large scale agile transformations generally only apply to parts of the

organisation that focus on incremental innovation. Whilst the agile methods are generally associated with incremental innovation, the above mentioned challenges give the impression that even incremental innovation is a complicated task within a traditional financial service firm, even when they work according to agile methods. In some aspects, agile values combined with specific organisational structures are found to even further hamper incremental innovation. In companies and in literature, innovation was generally focussed around radical and disruptive innovation. One must not forget that for most companies incremental innovation is still the largest part of the organisation, as well as the part that is currently bringing "money in the bank". If "innovation" and the management of it is only reserved for radical and disruptive initiatives, a company runs the risk of neglecting incremental innovation and thus eventually the needs of the customers of today. In order to have resources for innovations of tomorrow, however you'll have to stay relevant with innovations in the now.

7.2 Conclusion

The goal of this thesis was to find challenges for managing innovation in a large scale tailored agile organisation and additionally to help ABN AMRO with their innovation management efforts in this landscape. The findings are based on an in-depth exploratory case study of ABN AMRO and are thus limited with regards to generalisability. Comparison with data from external interviews and existing literature helped in improving generalisability, however the findings are best fitted to the context of financial services.

This study shows that agile methods and large scale agile frameworks insufficiently support the innovation processes and more specifically miss support for the front end of innovation. Moreover, this study confirms previous literature that most innovation management efforts and support goes towards disruptive and radical innovation, whereas the largest part (incremental innovation), receives little to no attention.

Barriers are faced when trying to implement both radical and incremental innovation initiatives into the existing organisation, as they're faced with challenges such as organisational siloing, and the not-invented-here syndrome that withhold them from being prioritised on the backlogs of agile teams. In addition, work related to innovative initiatives don't align well with the time-boxed nature of agile as they generally they take longer than a sprint and thus tend to "fall of the backlog". Early stakeholder involvement was found to be critical in order to help overcome some of those challenges.

Furthermore, A complex IT landscape is characteristic to traditional firms in the financial sector and generally leads too many dependencies in a development process, especially in a product oriented organisational structure. Complex dependencies stimulate siloed incremental innovation within a single department (e.g. mortgages or "savings & deposits), as dependencies are avoided this way. The challenge lies in creating cross team and departmental communication and collaboration to avoid this siloing.

Cultural legacy that stimulated a risk aversive and restrictive mindset and existing processes that still stimulate that behavior further hampers innovation. Besides mindset, the study shows that exploration and discovery competences are scarce among employees in the financial services industry. Even more specifically so with regards to customer discovery, which is essential for incremental innovation. Even though incremental innovation generally lacks innovation management support, the study finds that guidance and structure is needed in that area.

In order to help ABN AMRO with their innovation management efforts, a process was developed called the "User Needs Integration Canvas" that provides guidance to teams in the agile organisation during the discovery phase. The process is focused around problem finding and is split into three "phases" called immerse, internalise and inquire. The process helps teams to translate customer needs into the structure of the agile organisation. Even though evaluation shows that the process is valuable, the concern remains that for implementation facilitation, coaching and support are a bottleneck.

The above mentioned challenges are summarised in the report using these six challenges; "clear guidance & leadership on innovation", "governance on innovation in the agile organisation", "deficiency of exploration skills", "organisational and

Table 7-1 "Monzo's public trello board"
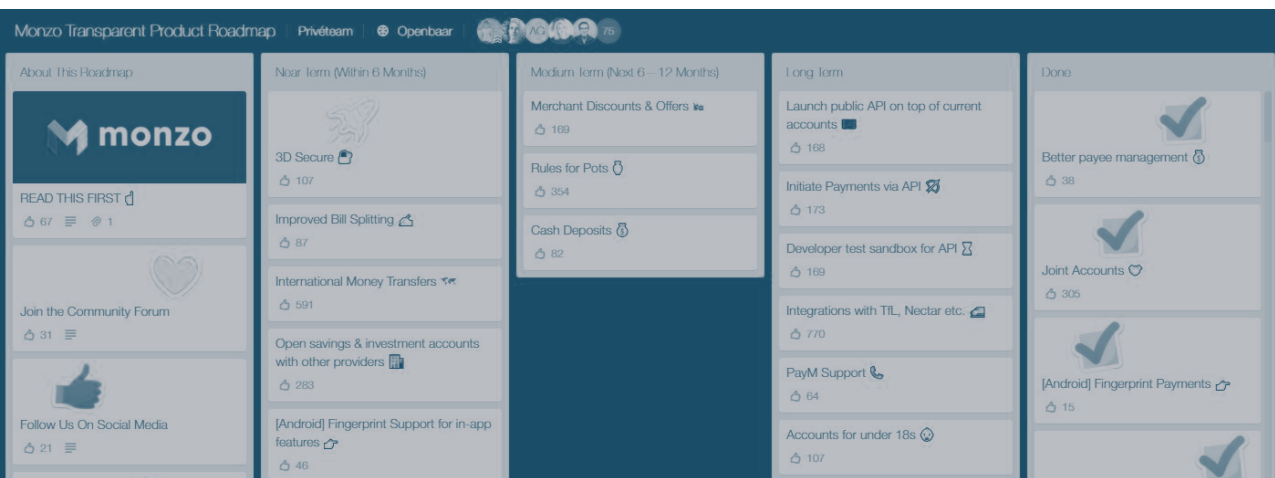
cultural legacy", "getting innovation on the backlog", and "dependencies & limited autonomy". The above mentioned challenges allshare great overlap, and one area in particular is the human component; either skill, behavior, or mindset related. The challenge lies in creating a total infrastructure that's conductive of innovation both incremental and radical, which requires a holistic stance on all of these challenges. Processes, structures, tools and governances will certainly help in shaping those conditions, however still it'll be the people in those structures who make the choices, create ideas and build them.

7.3   Implications

In order to survive, a financial services firm must manage to both innovate incrementally as well as radically. However this means that they need to establish innovation management practices for both types of innovation. Since agile methods don't cover the innovation process in full, extra efforts and support should go towards managing incremental innovation, the front-end of innovation specifically. Moreover, these innovation management practices for these different types of innovation can't be viewed in isolation. If radical and incremental types of innovation are organised separately inside a firm, it's essential to clearly define the interaction between these organisational units.

Innovations won't be of value as long as they are not realised by implementing them into the existing company. In order to survive, the innovations need to reach the hands of the customer, not the bottom of the bin or the backlogs. One way to help avoid the implementation problem is by the early involvement of crucial stakeholders. The acquisition of stakeholders that are willing to collaborate on the initiative are a core indicator of the degrees of freedom for the idea/solution. Whilst innovations created away from organisational constraints might lead to solutions that better fit customers' problems, they'll probably face difficulty or even rejection once they need to be developed and integrated. So a balance needs to be struck between what's ideal, and what's possible within the organisation, by early involvement of stakeholders you expand the breadth of possibilities.

Dependencies within a large financial services firm are inevitable due to the complex nature of their IT landscape. In order to avoid siloing of both the organisation as well as innovation, financial services firms should support and encourage more complex incremental innovations. In light of true agility, changes in the environment don't account for internal structures of an incumbent firm, they'll generally touch upon multiple products and even more underlying systems. Whilst these system and component teams will be agile as an individual identity due to their autonomous nature, their agility will be overshadowed by the dependencies, coordination and politics involved to respond to that change. This also implicates that traditional financial service firms working (or willing to work) with a large scale agile framework should reassess to what extend teams are given autonomy and mandate in such a dependency rich environment. In addition, agile is also known for its customer centricity. For companies implementing agile at a large scale, hoping to become more customer centric, are advised to design processes and organisational structures around the customer and not around products or systems.

Traditional financial service firms have to deal with the cultural legacy, as well as the lack of innovation legacy. The deficiency of exploration and discovery skills and the perseverance of traditional values are time consuming and resource intensive problems to solve. Both customer discovery skills and the right mindset are essential in creating and delivering products or improvements people want, which is on itself key for survival. Processes, governances and solutions can be helpful, though training and support for a correct understanding and usage is imminent for any company. Large scale agile frameworks are known to help respond to changing customer needs at a faster rate, however without the mindset and competences to find those needs, you still end up producing products or features people don't want or use, only faster.

There are no shortcuts for becoming an innovative company. This thesis showed that a large scale tailored agile framework doesn't suffice as a way to manage innovation and even complicates it in some areas. Agile is one amongst many approaches to become more innovative, however the challenge is to take the time, effort and patience needed to implement it beyond just a method, framework or a tool. The role of the individual in this equation, with their skills, mindset and behaviour is imperative. In the end it's the people that create and maintain the products and

services, nothing else. Much like the hunter gatherers introduced earlier in the report, who had to put time and effort into mastering the bow and arrow in order to improve their chances of survival, the same can be said for companies. If it wasn't for our ancestors' patience to master the "bow and arrow" and educate peers to use it, their chances of survival would have diminished, and this entire thesis may have never existed (See Fig 7-2).

7.4   Further research

Still a shortage of literature exists on innovation management within a large scale agile organisation. As large firms continue to implement large scale agile frameworks, more empirical research should be done into the effects of a large scale agile transformation on a firm's innovative capacity.

In addition, in this study showed that financial services firms are using frameworks that help organise their innovation efforts on both exploration and exploitation, in order to achieve organisational ambidexterity. Whilst large scale agile transformations are mainly focussed on incremental or the exploitative part of the firm, it would be interesting to explore how large scale agile frameworks could facilitate both exploration and exploitation (and avoiding hand-over in doing so).

Dependencies were found to be a hurdle for successfully managing innovation. During the research multiple other similarly sized (in FTE) digital literate companies (Coolblue & Booking.com) were interviewed. An observation was made that dependencies did not seem to be a problem for these companies. Both of these companies were organised based on value streams and customers journeys. An avenue for further research could focus on finding the effects of organisational structure types on the product development teams and the companies' respective financial and innovative performance. A question that surfaced multiple times during this thesis was; how would organising along customer journeys affect the output of the (new) product/software development organisation?

Table 7-2 "Hunter gatherers fighting for survival"

VIII Reflection

8.1 Personal Stance

During the writing of this thesis, I've had some general insights about the things I was researching. These insights are my personal opinions and do not have any theoretical grounding or validity to them.

I believe large scale agile transformations too often to be perceived to be a packaged solution aimed at preparing companies for their turbulent environments, however these processes, methods and transformations do not give the organisation a sustainable competitive advantage. Any company can do a large scale agile transformation, however in many cases I find that successes or challenges are the result of human behaviour and not a result of trending ways of working. In addition these large scale agile transformations are generally centered on the implementation of processes and structures, but fail to really implement the "mushy" core of agile as one of their founders calls it. You could draw similarities to the dieting industry, where there are certain plans for weight loss (shakes, low-carb, Atkins etc.), there are trends for companies as well (lean, agile, design thinking implementation plans). Though research has proved the long term sustainability of these dieting plans to be non-existent, and true healthiness is achieved by finding a sustainable and balanced solution that fits your living style. I believe the same to be true for businesses.

Don't get me wrong I do believe that agile is a good way of approaching (new) product, service or software development, however the success lies in shifting the entirety of an organisation into a certain direction (including culture, mindset, skills and even the physical environment for example). In large organisations generally only part of the organisation will start to work in this agile manner, and this limited scope is a limiting factor in many cases, holding back true company agility. The entire system keeps itself balances in that sense. Still whilst there is plenty of capital to implement and design better processes, governance and rules; it still comes down to motivated and competent individuals and teams that find opportunities, create solutions, and subsequently bring it into the hands of customers. Sometimes it's better just to start doing than to argue how to do it, but still you'll need visionaries and leaders that dare to determine the what and the individuals that believe in that what again coming down to people. The point here is, human capital in my opinion is crucial, and the processes and ways of working should only extend their capabilities.

The problem with large organisations still is their inertia, in order to grow an organisation has to make concession through standardising and fixing processes, create more specific job descriptions and invest in specific competences. However as their environment starts to change, their optimised role descriptions and processes become outdated, especially in the case with radical changes, this can happen really fast. They find themselves unable to response as they've been "dug in" too deep in a specific spot. And inevitably, new entrants that manage to reap the benefits of the changing environment will face similar issues as they start to grow in their respective industry.

This "changing of the guard" as I will call the death of incumbent firms and rise of new entrants for now, is further fuelled by the current mindset and stance financial services are taking on innovation. I speculate that too often financial services firms are worrying about how to save their business, instead of thinking about how they could break it to the ground with all the opportunities there are to subsequently do just that. In addition I find that the way they're approaching innovation is very much focussed on radical innovation, especially since that's generally the type of innovation that's supported by the corporate innovation office and incremental innovation is easily passed on to the "business". That feels to me, specifically for the financial services industry as if you're trying to run without knowing how to walk, especially since they have no history in innovation. Radical innovation can be a distraction and specifically for traditional financial services firms there's plenty of opportunities within incremental innovation, sometimes it's the small changes that make real difference for current customers (Troman, 2015). This brings me to my next point, which is the fact that financial service firms create products, in my opinion they should focus on designing and creating services as the name of the sector states. In an empirical paper on innovation management it's stated that among al service industries the financial services has the biggest product focus on innovation (Oke, 2007). They could learn a thing or two from service design, and that's maybe why these types of designers have been so popular within this sector (Cherim, 2018). This thesis has mainly focussed on innovation within the company, due to its inward facing nature. However in the

financial services industry I've found the orientation of their innovative efforts to be highly inward facing, which is also confirmed by others (Troman, 2015). Open Innovation isn't something familiar within the banking world (yet), finding partnerships and collaborating with others to create better services should be done more often. The risk aversive and protective nature of banks of course doesn't help them in this perspective, however they'll have to transition to this approach soon, as new legislations are pushing them to become more open.

I do understand that the above mentioned points paint a very negative picture for the traditional financial services firms and credit should be given to the tremendous steps many of them are already making. The way these banks are operating has tremendously changed and improved over the last years. They're courageous for making big steps towards becoming adaptive and innovative. However, the biggest enemy for these traditional firms is to find enough time to make this transition given the amount of legacy they carry. And only time will tell if there's enough left for incumbent banks.

8.2   Process

When I first started this thesis, I had a clear understanding and scope in mind for where I wanted to go with it (at least, I thought so). I knew what inspired me, had a lingering interest into the financial industry, the possibilities inside it, and was motivated to make big changes. After the first month at ABN AMRO I soon realised I had it all wrong. Whilst I tried to stick to my neatly laid out planning for my thesis, I got caught up in my personal trait of getting involved with many things to still my hunger to learn and to develop myself. Whilst this did help in gaining an overview and

understanding of ABN AMRO as a whole, it also triggered to what I experienced and describe as "system equilibrium – stress". Once I started to understand everything (or lose it better said), I saw relationships, links, dependencies that keep each other in balance. I generally liken it to a waterbed, where if you push down in one area, the water goes up in other areas. Similarly within an organisation I found, whenever you think you've improved one part, it probably resulted in losses elsewhere. Eventually, this holistic view helped me tremendously in gaining knowledge in, for me, new areas. However it did complicate things when later I tried to zoom back on a customer level (in this case being the ABN AMRO employees). The thing I was educated for, understanding customer needs suddenly became very difficult as every solution or insight I gained, I immediately related to the possible dependencies and linkages it has within the "system". In addition I got found myself talking to managers and coaches instead of talking to those working in the teams, which I believe resulted from this holistic stance I took on the issue. Later on in the project I managed to go back to "my roots" of talking to the actual users. Although, I've never really succeeded in letting go of that holistic stance, which is reflected in the thesis as well. Where there'll be points that might seem to go in "circles", it is a reflection of what was actually happening in my head. In multiple places I failed to boil things down to simple understandable points, as in my head these simple things have an entire backstory, which (with my perfectionistic trait) should be included. Things did started to go smoother when I had a clearer problem definition in mind, my old skills and competences found their way back to me. Especially when I had a concrete solution to work on. I regained the energy lost in the endless "system loops" my brain was making. The iterative part where I was working on an actual solution was where the energy was motivating me and driving me to

continue to work on the solution and improve it based on what the teams needed. Soon after the green light meeting I did find it tremendously difficult to put that on a hold to work on the writing of this thesis. That's where I really found that the amount of work I had done backfired on me. Finding and synthesising the meaning of this knowledge actually in light of the scope of the thesis, is something I struggled with and still do. Writing concisely and clearly as you may have already noticed isn't my strength. The process and time planning I made up front did help me in going back to what I was supposed to do again, however I did learn that there's still much to learn in effective and clear communication, where examples and simplicity are key. I've never realised this to be an issue as I've always worked with very concrete items in an environment where everyone "spoke the same language", possibly the complex and holistic viewpoint, as well as the new knowledge area brought this point of improvement to light, which I'm grateful of and still working on to improve.

Overall I find that as per usual I've attempted to do too much in a timeframe too small. This is a problem I've been struggling with all my life so far. Especially since this was an individual project, which was the first one in three years (really, my bachelor thesis was my last individual project) I realised how valuable it is to work as a group and how that affects the motivation and quality of a projects' outcome. This uncovered for me another point of improvement; asking for help (which I'm not a star at).

The entire process from beginning to the end is something I've hugely underestimated both the amount of work that could be done individually as well as the emotional effects it can have on a person. Altogether, with a couple hiccups here and there I find that the process went relatively smoothly and I've learned more than I could have imagined up front, the most valuable things to me however are the insights that the thesis has given me about myself, what I don't like, what I do and how I can improve myself.

8.3   Personal Development

If you would ask me during my Bachelor's where I thought I would write my thesis, I would have declared you mad if you told me I would write it at a large financial services firm. Both my dad, brother work in the financial services sector, and I've never really understood their interest in it. Up until a few years back when I saw the changing market environments. My collaboration with a large financial services during my internship in London made hungry for the challenges and opportunities that lay ahead in this sector. My time at ABN AMRO however has made me realise a lot about myself and has helped me develop in areas I've never expected up front.

I've managed to learn many new things about organisational complexity as well as the human component attached to it. And now looking back at where I left of, the things I've learned have actually little to do with the financial services industry per se. I've gotten to understand (part of) how complex and difficult it can be to innovate within an established firm, or better said to bring about change to the entire organisational "system". Interestingly, I've found that my time at ABN AMRO has mainly helped me develop soft skills, such as stakeholder management and clear communication, specifically in a corporate context. As

I find soft skills more valuable to develop, I'm still interested in this insight. In my opinion it indicates the importance of soft skills to bring about change inside the organisation. My internship at ABN AMRO has also showed me the broad applicability of the three IDE pillars (business, human, technical), seeing how within an organisation all three of these pillars are carried by different organisational units or how they're spread as competences, and seeing how the way they are organised impacts the overall output of the organisation. This internship has on multiple fronts confirmed my belief in cross-fertilisation, taking a concept from one field and combining it with things from another to create new insights.

At the beginning of the project I had set myself the goals to add something to literature, create something that's valuable for ABN AMRO as well as for practitioners. In similar fashion as previous projects, I was ambitious and my aim is always to deliver high quality on all fronts. With this thesis my traits have been working against me in multiple fronts. My inability to make choices, and my tendency wanting to do everything, has led to the fact that I didn't have enough time to deliver on all the goals and ambitions I had set for myself (or at least not to the degree to which I've liked. This point of improvement has become really clear for me, as I've actually experienced that it's just not feasible to deliver on all fronts without making concessions. The main take-away and reminder the internship gave me was the cruciality of making choices.

The eventual thesis was very heavily research focussed, whilst this isn't even one of my strengths. I've managed to work on these competences, however I've learned that I much rather prefer the "designerly"-side of it. Especially since in the second part of the project where I started to work on a solution, I noticeably became more motivated. Moreover, I've experienced that it's really hard in organisational changes and consultancy to see concrete progress and for me it feels like going in circles where there's this swinging effect between organisational forms, going from tailored to standardised, from centralised to distributed and back for example. There is no clear end goal in that perspective, finding the way to optimally perform in a given environment is ongoing is, however defining ways an organisation should behave without the ability, and time to switch to that behaviour feels futile to me. Whereas working on a product, app or service there's this direct feedback on a clearer goal, doing my Internship at ABN AMRO has made me realise that those environments suit me better.

I've also found that my skills as a designer are very valuable in the current environment, even for roles such as management consulting. Throughout the entire organisation I've found people wanting to learn how to visualise, do workshops, become more customer centric, etc. and I believe this is a good movement. However I've also noticed how easy it is to get sucked into a culture and a way of working that don't necessarily support that designer mindset I've built over the last six years, especially in the beginning I found myself easily overlooking and forgetting the skills I had and conforming to specific standards such as the way of communicating for example. As my ambition was and still is to bring about big changes (sounds very millennial like probably), I must not comply to the ways things are done currently (in any context), however to do things differently and the way I've been taught during my studies.

> *"In my opinion, companies are thinking too much about how to keep their business alive. They should be thinking about how they could break it to the ground to subsequently build the business that does just that. Otherwise someone else does it for you."*
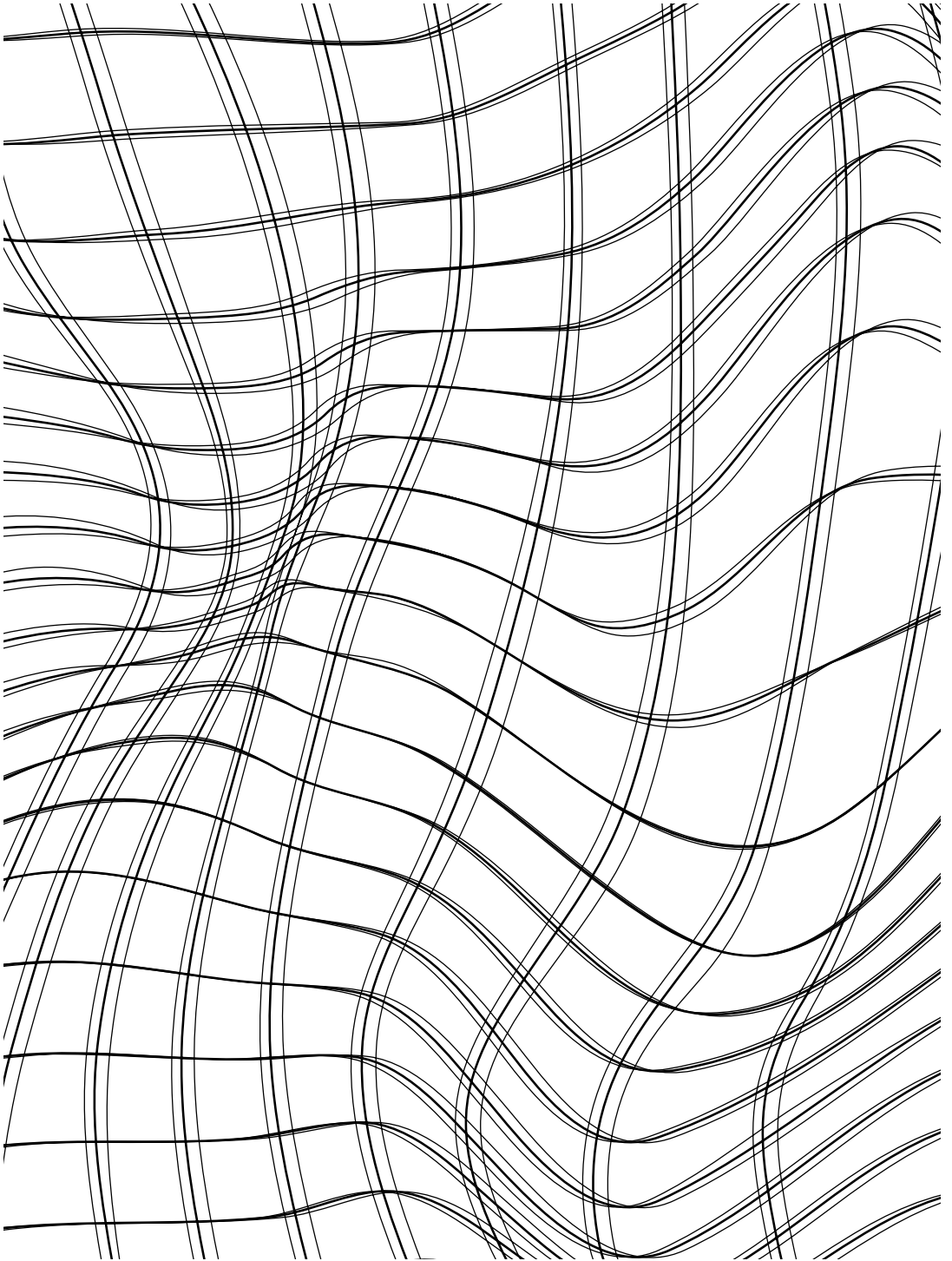
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