

Strategy on Innovation Capabilities
A first step towards measuring transformation

Graduation Report
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Preface

Who I owe this to...

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This report marks the end of 6 months of graduation, but also of 8 years of work at the TU Delft. These years have had a profound impact on me. Not only through the interactions that I've had with professors and the courses that I've followed, but also simply by being part of the local (academic) community.

Without a doubt, graduation was the most interesting element of my education and it has completely changed my view on design and business. I've learned to value the way designers think and realised the impact that we (I guess I can say we now) can have. Arguably even more importantly, I surprised myself by developing a drive to research the design process and build an understanding of innovation processes in general. I am happy that I now know what I will sink my teeth in the following years.

I couldn't have finished this project without the support of the people around me. Jurgen and Christine, thank you for helping me discover what design research is about and giving me the space to do this project 'my way'.

Anthony, David, Emma, Rosanne, Wouter, Dieke and all the others at Innovation Booster: I think there are very few places where graduate students are given the opportunities and help that you have given me!

Lauren, thank you for accepting all my rambling about graduation and restoring faith in a decent outcome more than once. I promise I'll return the favour next year.

Suus, Lot, Jac and Annemieke, thank you for your support and for helping me to take this report to a next level!



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Explore

Experiment

Execute

Executive Summary

A quick overview of half a year of research and design

In today's turbulent economic and technological environment, it is difficult for large enterprises to survive. To do so, innovation is needed. Firms that have perfected the exploitation of their current portfolio now need to focus more on exploring new business opportunities.

Innovation Booster (IB) helps large enterprises to create new business by performing innovation projects together. Throughout recent years, IB has developed towards being a partner in making firms more innovative. As IB transitions towards helping companies perform transformations, they encounter a new challenge: How to measure our transformational effect on clients? This is the question this research originally set-out to answer.

To tackle this challenge, a lean and agile approach was taken. Due to this approach, two insights were gathered quickly. First, a 'company transformation' is dependent on the company and the industry that a company is in. This makes it impossible to measure the objective 'state of transformation' of a company. Nevertheless a relative measurement (where progress from a base-line towards a pre-determined strategy is measured) might be possible.

The second important finding of the exploration phase is that clients of IB do not have a strategy regarding innovation (and thus transformation). The design goal of this research thus shifted from creating an objective measurement to helping IB's clients make an Innovation Strategy.

To realise this goal, the Innovation Capabilities Assessment (ICA) was designed. This assessment is based on a framework that was grounded in the Dynamic Capabilities

and Innovation Strategy theory. The ICA works as follows: first, data is gathered through use of a chatbot. This data is then visualized and used as input for a qualitative session in which Innovation Managers determine a strategy and pinpoint hurdles to improve Innovation Capabilities. The results of these elements are compiled and presented in a report, together with actions on how to improve the innovation program.

It is important to note that the ICA is only a first step in making transformation more measurable. If IB wants to make more impact on enterprises and transform more effectively, senior management will need to redefine their strategy and develop a follow-up proposition. In contrast with the ICA, this service can aim at objectively measuring improvement of Innovation Capabilities and thereby at measuring IB's transformational effect.



Introduction

In 1880, the American George Eastman founded Kodak. The company “known for its pioneering technology and innovative marketing” held a stunning market share of 90% in films sold in the late 1970’s in the US (The Economist, 2012). Today however, Kodak is nearly bankrupt (as can be seen figure 2) after ‘missing the boat’ on digital photography. As this new technology gained market share, Kodak needed to shift from selling camera films to selling digital cameras. Kodak didn’t realize this in time and endured the consequences.

This is an extreme case of how a company can fail to adapt their business model when the market demands it (Lucas and Goh, 2009). However, Kodak is certainly not the only sizable company that has trouble with staying relevant in a changing marketplace. Banks are challenged by transaction players such as Paypal, Insurance companies struggle to fend off startups that benefit from a native online presence and brokers and traders in every industry are feeling that the internet is “cutting out the middle men”.

In fact, according to an article in Forbes, research confirmed that “Half a century ago, the life expectancy of a firm in the Fortune 500 was around 75 years. Now it’s less than 15 years and declining even further.” (Denning, 2011)

Some argue that large companies are simply not fit to survive, because they lose their ability to explore new opportunities as they mature and focus on exploiting their current products. They argue that ‘creative destruction’ is needed were old companies are replaced by new ones as the economic, political and/or technical landscape changes (Schlesinger and Doyle, 2014).

Unfortunately, when large enterprises suffer, society suffers. Whenever a large enterprise topples over, many people lose their jobs. This means people are torn from their jobs that

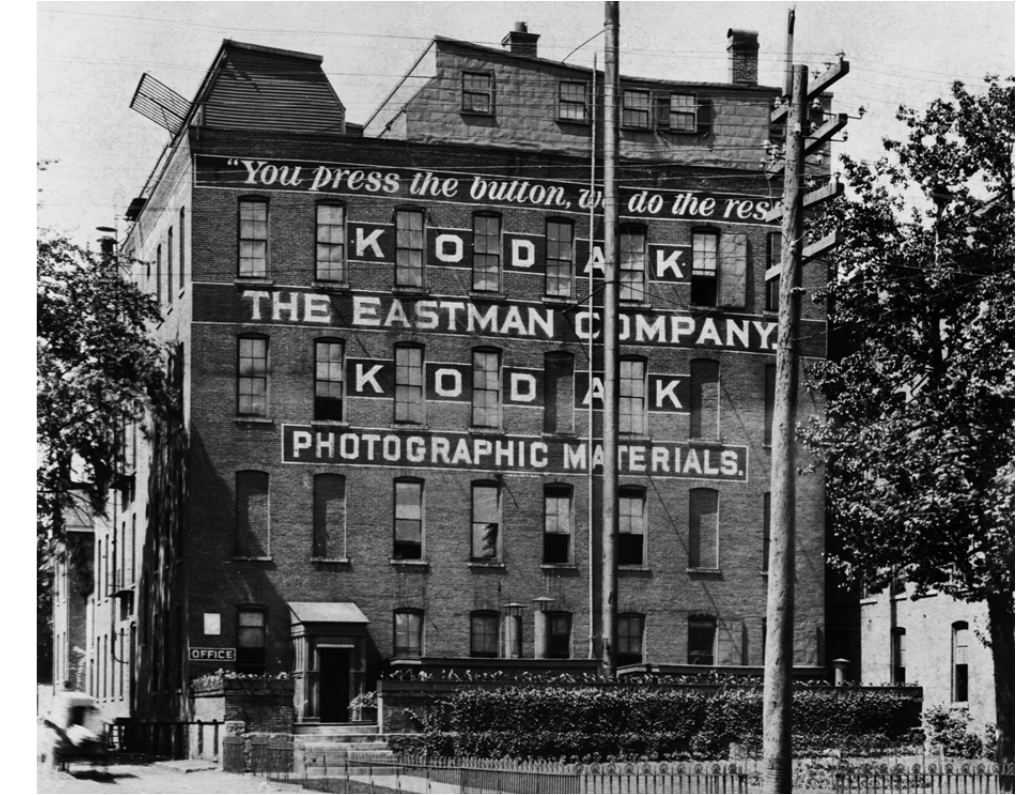


Figure 1: One of Kodak's first headquarters



Figure 2: Kodak's shareprice (The Economist, 2012)

they might have had for decades and an immense amount of knowledge is lost as communities of practice (or networks of experts) fall apart. Sadly, these people do not necessarily find work at the company that caused the shift in power. Disrupters need people with knowledge of new technology, with a fresh mindset. They have no place for people with the dinosaur mindset which caused the incumbent to crash and burn.

In the worst case, entire industries are disrupted. One needs only to Google the word 'Detroit' and the results of the car-industry being disrupted become painfully visible. This once great city of America now boasts many empty homes, poverty and rising crime-rates caused by unemployment for years.

With this in regard, a case can be made to fight for the survival of large enterprises. Luckily, there are also quite some examples of companies and industries that did manage to survive. IBM, General Motors, Proctor and Gamble and Boeing are only a handful of names on the list of companies that did manage to stay on the fortune 500 for more than 50 years (Perry, 2014). So there might be hope.

To sustain, enterprises will need to innovate (Eisdorfer and Hsu, 2011; Chesbrough, 2013). Hence the credo: innovate or die. That is where Innovation Booster (IB) enters the scene. As their BHAG (Big Hairy Audacious Goal) IB states: "In 2025, we want to double the life expectancy of the fortune 500". Realizing this goal means figuring out how to transform large enterprises. This report aims to add to that understanding by solving a challenge for IB.



Figure 3: Empty plots in Detroit City (2011)

Report Structure

What you can expect to find in this report and in what order

This report has three 'acts' as can be seen in figure 4. In the first act 'explore', Innovation Booster and the challenge that they faced will be described: how can we measure transformation? Next, the project approach is presented. This research followed a new Lean/Agile approach. As a result, the design goal of this research shifted midway from measuring progression on transformation, to setting an Innovation Strategy. The design goal was consequently rephrased to: design a process for IB to help Innovation Managers make an Innovation Strategy

In the second act 'experiment', the product of this graduation project will be presented: The Innovation Capability Assessment. There are three distinctive elements of this proposition that need further explanation: the 12 'Innovation Capabilities' framework, a 'chatbot' that is used to gather data from the firm and a qualitative feedback session to pinpoint hurdles for innovation in the organization.

The third and last act of this report focusses on 'execution'. Here, a future vision for Innovation Booster will be described. The two main building blocks of this part are: a second proposition (to follow-up on the assessment) and a strategy based on becoming an expert on knowledge-driven corporate innovation.

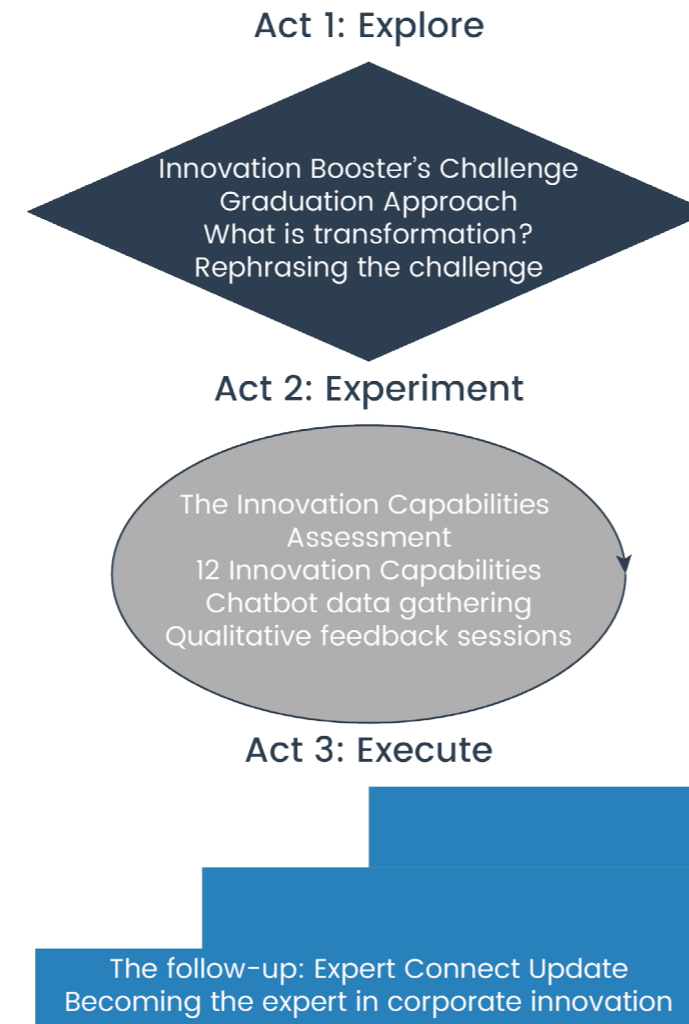


Figure 4: Report structure

Sidebar

The blue boxes that appear throughout this report contain non-crucial information such as examples, background information and extra clarification for the interested reader.

Reading Guide

Every act will be preceded by a short summary of the act. This summary will describe the main take-away of each act. Also, at the beginning of every chapter the activities that were performed to find data are mentioned. Frequently, references will be made to sprints or experiments that were performed. The experiment boards that describe these sprints or experiments can be found in appendix 1.

To fellow students and Boosters

For students who are interested in graduating using a Lean/Agile graduation approach: read chapter 2 (approach), 3 & 4 (how this approach led to a change in design direction) and 14 (reflection).

For Boosters who are interested in the final product of this research: read chapter 5,8 & 9 (explanation of final product), 10 & 11 (on a follow-up proposition) and 13 (discussion)



Glossary

Not everyone speaks designish

To increase the readability of this report abbreviations are used. They are explained in the text, but if you forget what an abbreviation means: here's a list of the most used abbreviations and what they mean:

- EB – Expert Booster
- EC-update – Expert Connect Update
- EI – Entrepreneurial Innovation (IB's methodology for corporate innovation)
- IB – Innovation Booster
- ICA – Innovation Capability Assessment
- IM – Innovation Manager
- MVP – Minimum Viable Product, a first version of a product that fulfils needs in a primitive way, see figure 5. Is not equal to prototype, which is an illustration/explanation of a concept.
- NSD – New Service Development
- WoT – Way of Thinking
- WoW – Way of Working

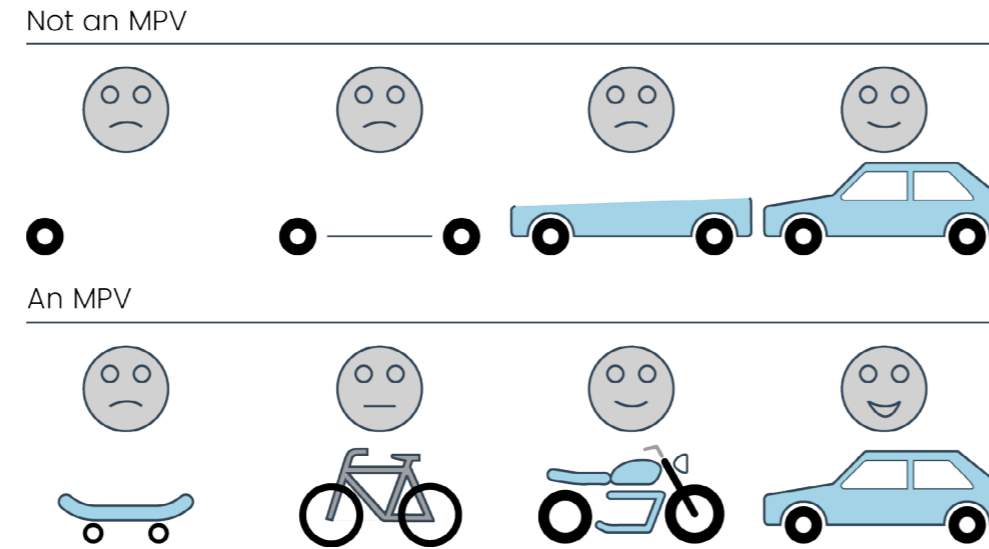
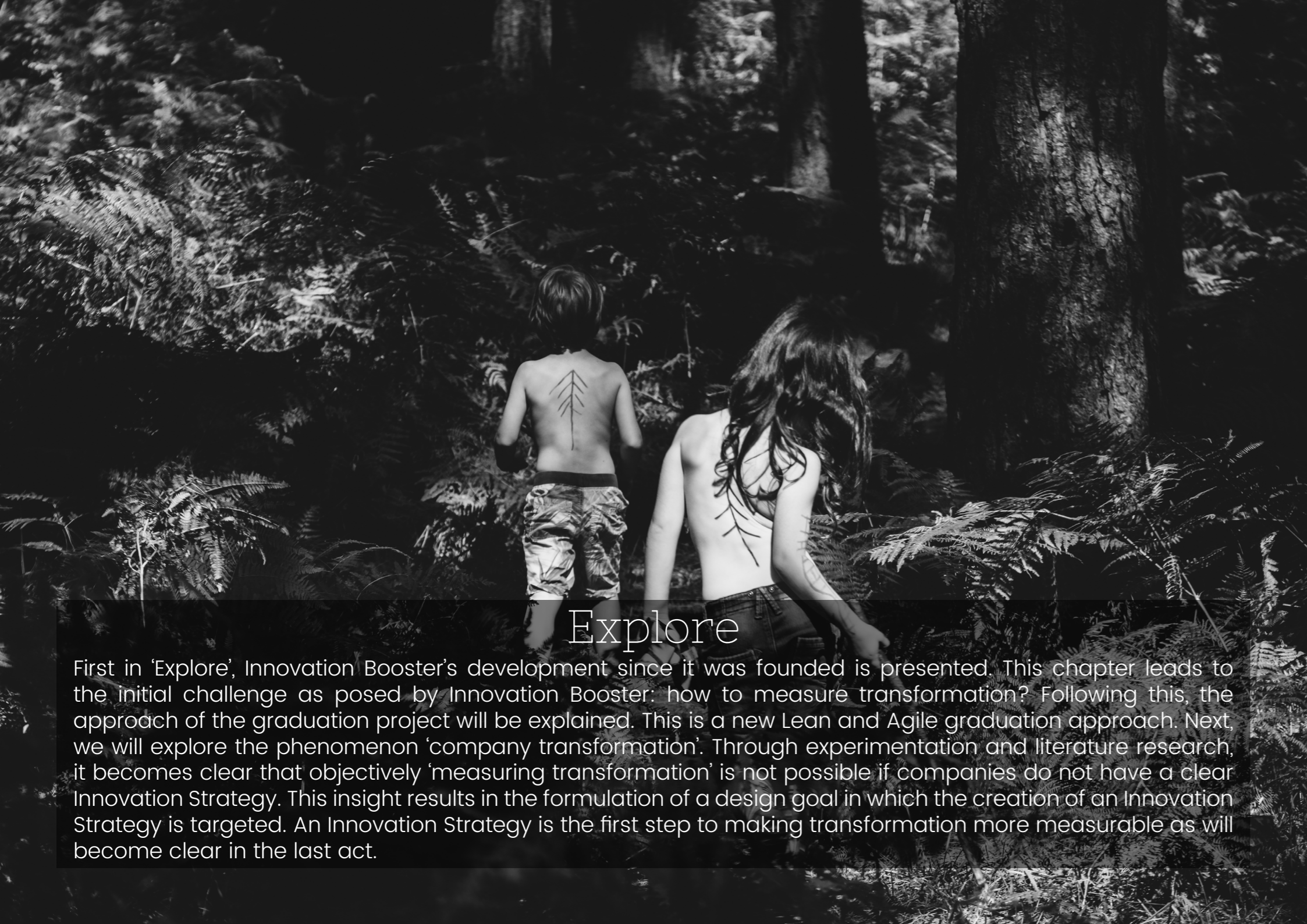


Figure 5: the meaning of an MVP (inspired by illustrations of Henrik Kniberg)



Explore

First in 'Explore', Innovation Booster's development since it was founded is presented. This chapter leads to the initial challenge as posed by Innovation Booster: how to measure transformation? Following this, the approach of the graduation project will be explained. This is a new Lean and Agile graduation approach. Next, we will explore the phenomenon 'company transformation'. Through experimentation and literature research, it becomes clear that objectively 'measuring transformation' is not possible if companies do not have a clear Innovation Strategy. This insight results in the formulation of a design goal in which the creation of an Innovation Strategy is targeted. An Innovation Strategy is the first step to making transformation more measurable as will become clear in the last act.

1. Innovation Booster's challenge

Getting to know the company that wants to transform large corporates

IB, was founded 4 years ago and has since performed almost a hundred (service) design projects for corporates under which Fortune 500 enterprises such as ING, Achmea, Ahold and E.on. In these projects, IB uses their methodology 'Entrepreneurial Innovation for Enterprises' (EI) as a solution for company challenges with the goal of increasing their clients top (revenue) and bottom-line (profit) performance (see figure 1.1).

IB initially performed mainly 'New Business' projects. However, over time IB realized that their unique approach resulted in a transformational effect on clients. This chapter explains how this insight resulted in a specific transformation proposition.

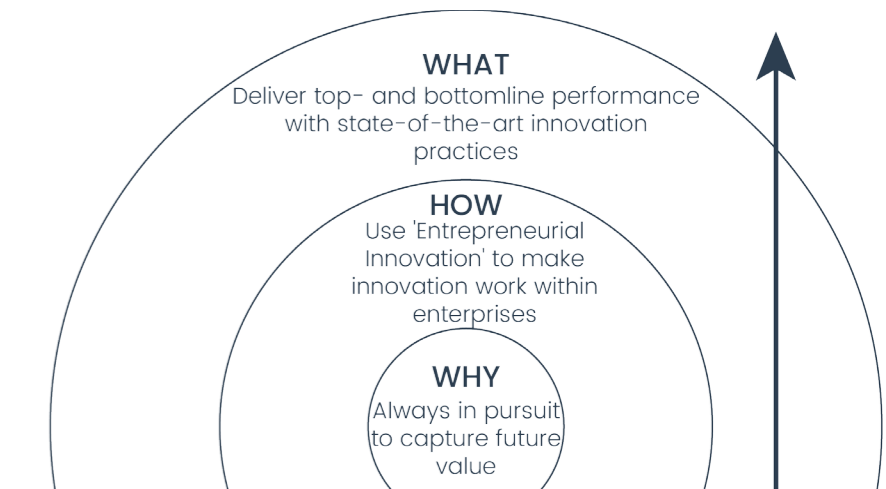


Figure 1.1: IB's strategy on Sinek's (2009) golden circle

New Business

Many of the challenges that IB tackles with their clients are challenges that focus on increasing top-line performance. They tackle 'new service development' (NSD) challenges such as the question one publisher asked: what new service can we offer to high-school students? Also, projects with the goal of creating 'market extension' are performed (see figure 1.2). An example of such a project is: how can we use our technology to provide a service for farmers? The deliverables of these 'New Business' projects are validated service proposals.

There are also larger projects with a 'New Business focus'. In these cases, IB focusses on setting-up and guiding many innovation teams in internal 'accelerators' or 'innovation labs'. However, in new business projects, IB is not involved in the design of the innovation program or the culture.

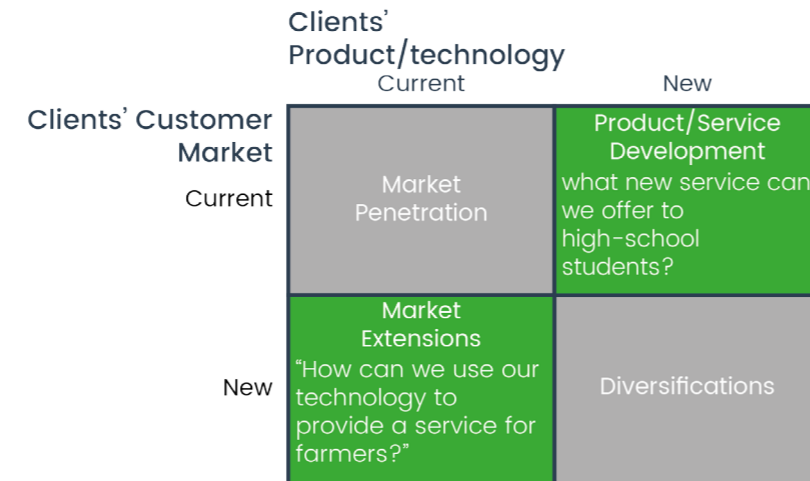


Figure 1.2: IB's bottom-line projects: market extensions or service developments according to Ansoff's (1957) definition

Transforming Companies

Two unique characteristics of IB led to the creation of a specific transformation proposition. First, in IB's projects, employees of the client perform the projects themselves (instead of employees of IB). Second, besides 'top-line' improvement projects, IB also performs 'bottom-line' improvement projects which focus on transforming the Way of Working (WoW) and Way of Thinking (WoT) of departments.

Transformation effect in new business

IB has adopted a unique approach to solving new business challenges which involves asking their clients to actively participate in the innovation process. IB merely facilitates an innovation process (performed by regular employees) rather than to give advice to top-level management. In an IB project, challenges are solved by the company's own employees, in their own office, during their normal work-hours.

IB's employees (the 'Boosters') guide the teams that perform the projects. Boosters facilitate the process, offer tools (such as the value proposition canvas, business model canvas, empathy map) and offer (digital) skills (e.g. how do I build a landing page, how do I set-up an experiment). This process is visualized in figure 1.3.

The result of this approach is that besides solving the challenge, IB also delivers employees that have learned and experienced how to perform an innovation project. More specifically, these employees have learned a new Way of Working and -Thinking. They have been taught to work and think like an 'entrepreneur'. This secondary effect of performing an IB project is called 'the transformation effect'.

Bottom-line projects, transforming departments

In 'Bottom-line improvement' projects, transforming departments is the aim of a project. These projects focus on helping departments to function in a more entrepreneurial way (using the EI-methodology). Examples of these challenges are: 'how can the HR-department provide better support for innovation?' And, 'how can this organization connect with partners to leverage its' knowledge?'

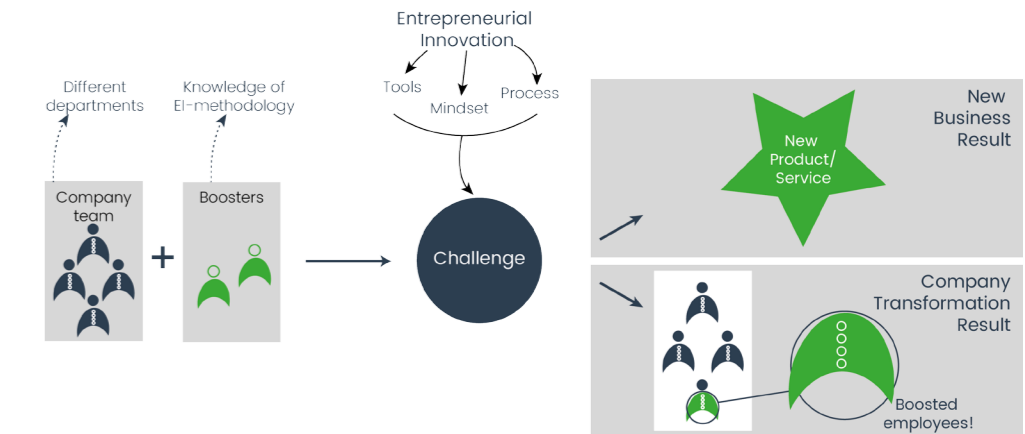


Figure 1.3: The Innovation Booster process and the (transformation) result

Transformation Proposition

As IB noticed the value of their transformational effect, gathered more experience in bottom-line innovation projects and as clients experienced an increasing urgency to transform, (see appendix 2), a specific company wide transformation proposition was created (see figure 1.4).

In the projects that focus on 'transformation', IB acts more as a partner to develop internal 'accelerators' or 'innovation labs'. In these projects IB also invests time and effort in scaling the program, educating employees on the EI-methodology and creating a governance structure that supports innovation.

A more detailed explanation of Innovation Booster's methodology and how projects are organized can be found in appendix 3.

In projects with a heavier 'transformation focus', attention is paid to creating all the circumstances to ensure that: "the right people do the right things, right".

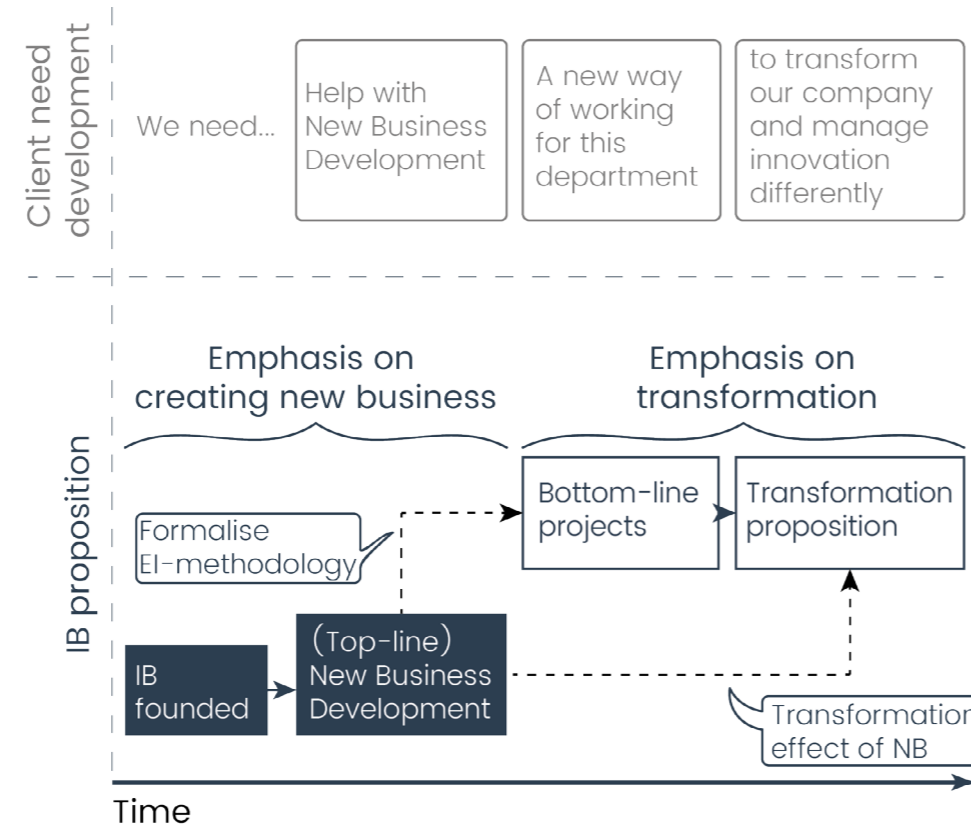


Figure 1.4: development of IB's proposition

The initial Assignment

Since Innovation Booster started offering a specific transformation proposition, they've encountered a challenge. They don't know how to measure their transformational results. There are two reasons why it would be useful to measure this result, which is summarized in figure 1.5 (on the next page). The validation of the assumptions underlying this problem-solution fit can be found in appendix 4.

Reason 1: measurement helps to sell transformation

First, if IB cannot measure their effect, it is more difficult to sell the transformation proposition. To understand this, consider the following: imagine you want to hire a personal trainer. During the intake-interview, you and your trainer set a goal: 'to become more fit'. Additionally, because you need something to work towards and to see whether you're improving you want to set a more concrete goal such as 'be able to run the marathon within half a year'. Now imagine that your personal trainer tells you that he can't commit to a goal because he doesn't know what his effect on your condition will be. In other words, the output of the training remains unclear. Would you hire him?

At IB, employees and Founders have a strong feeling that they make companies 'more innovative'. However, they are unsure what exactly they are improving or how this makes companies more profitable in the long-term. Do clients become better at creating creative solutions? Or do they think more customer-centric? More importantly, even if they know that they make companies more innovative, being able to explain this to clients is paramount if they want to sell it. Being able

to track the clients' actual progress would thereby benefit the sales-process.

Reason 2: measurement helps to improve the methodology

If IB cannot measure its effect, it cannot improve its methodology. Returning to the personal trainer example, imagine the personal trainer wants to know whether his training program is having an effect. Should he measure how happy his clients are? Should he gauge their lung-capacity? Should he measure what distance their clients can run in 10 seconds? Once he has decided on a measurement, he can actively track whether his clients improve during his training. If they don't, he probably needs to adjust his program.

As long as IB is unsure about what their effect is on organizations or how to measure this, they don't know how to gauge the effectiveness of their approach or how to maximize the impact on their clients.

In conclusion, the main research question as initially posed by IB was:

Initial Research Question:

How can IB measure their transformational effect on clients?

Transformation is becoming a more important part of IB's activities

IB Strategy



- Positioning: The innovation **transformation** company
- Deliverable: a.o. A new way of working
- 2017 goal: Learn together with clients how to completely **transform an organization**.

Figure 1.5: Why IB wants to measure their transformational effect

IB Needs to measure transformation in order to:



1

Increase Sales

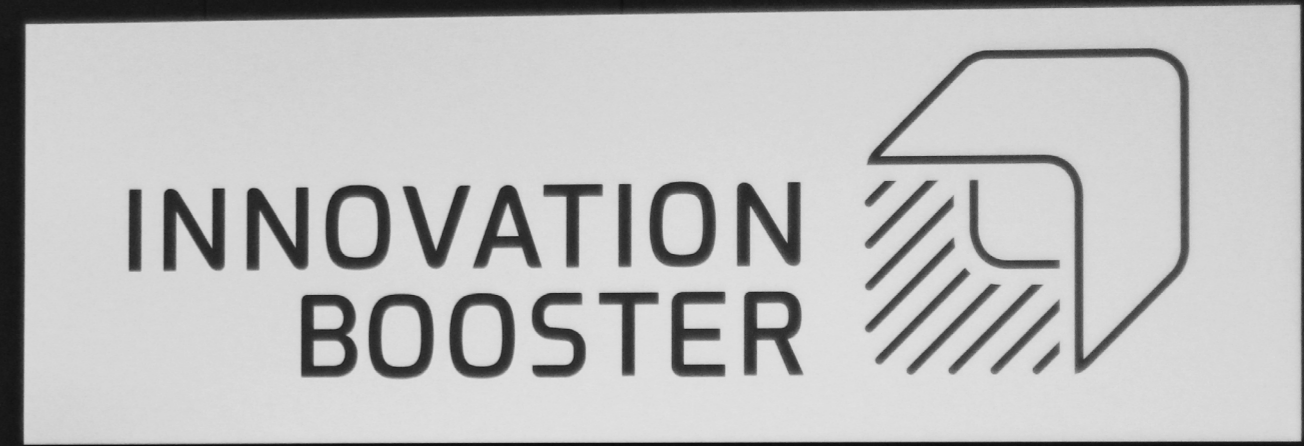
- Provide proof of concept
- Use for target-setting



2

Improve Methodology

- What are we achieving?
- What are blind spots?



2. Graduation Approach

How to tackle a graduation research when the question and the solution are both uncertain

The research question of this project was above-all undefined. Most noticeable, this project started without:

- Having a target group in mind (current clients? Future clients? Managers? Team members?)
- Knowing which need will be addressed (even without knowing which pains were present)
- A clue about what features the end-product should have (be it a software solution, an app, a game, etc.)

In short, the project was started under extreme uncertainty. Therefore, it seemed unwise to make decisions (regarding the product) at the start of the project when the least knowledge was present. As a result, an approach based on progressive insight was chosen.

Figure 2.1 illustrates the approach of this graduation. What is of main importance to note is that it is based not only on Design Thinking (Brown, 2009) and Design Science (van Aken, Berends and Van der Bij, 2012). The approach also lends elements of the Lean Startup (Ries, 2011; Blank, 2013) and Agile management (Alliance, 2001) approach. The Lean Startup and Agile management approach are designed to develop products/services under uncertain circumstances and as such fit this project.

The approach borrows a continuous build-measure-learn loop and knowledge gathering through many experiments with stakeholders (using MVP's) from the Lean startup theory. Also, it embraces the idea that the design direction may change as insight progresses from the Agile methodology.

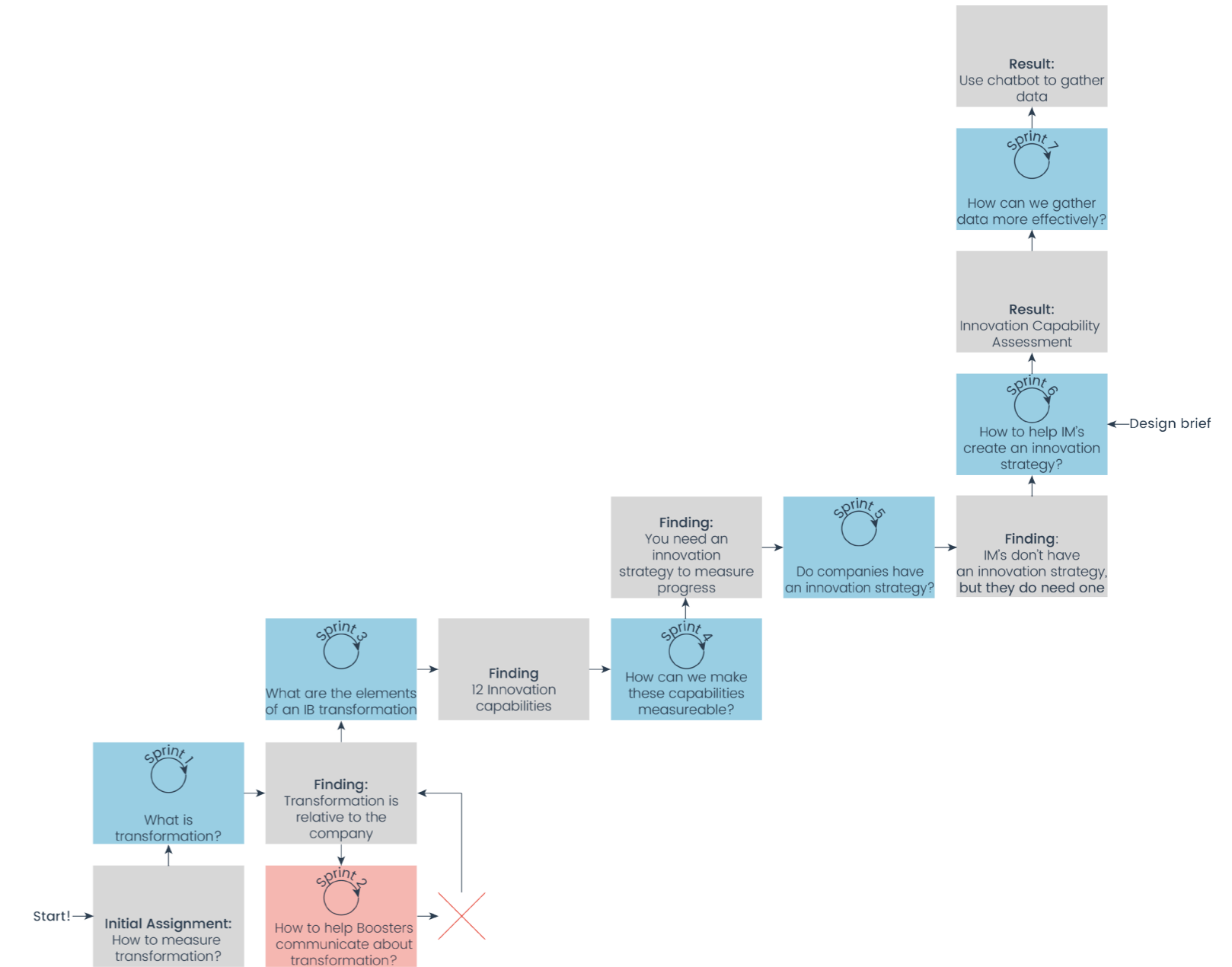


Figure 2.1: Graduation approach overview

Elements of Lean Startup

- The idea of a **continuing loop between build, measure and learn is embraced**. The aim of the development process is not to build a perfect product the first time, but to learn as fast as possible about the customer and its preferences in order to build a better product eventually.
 - **Constant feedback from users**, purchasers and partners is used to feed this loop (Blank, 2013).
 - **Time and effort is invested in evaluating the process** and thinking not only about doing things right, but also about doing the right things. This eliminates waste and increases the speed at which the product or service can be developed (Ries, 2011).
 - **Hypotheses-driven entrepreneurship is the aim**, which underlines the act of continuously stating testable hypotheses regarding the product (Eisenmann, Ries and Dillard, 2012).
- These elements are summarized in figure 2.2.

The result of this approach can be seen in figure 2.3. This figure shows how a framework was developed into a final product.

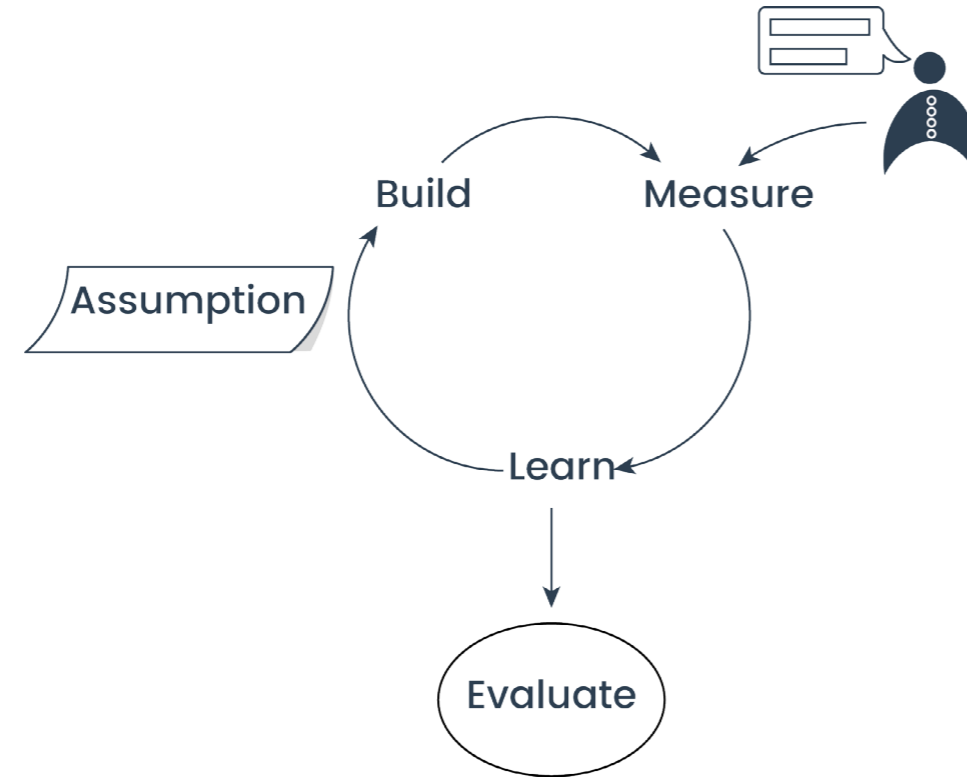


Figure 2.2: The Lean Startup elements that are used in this project

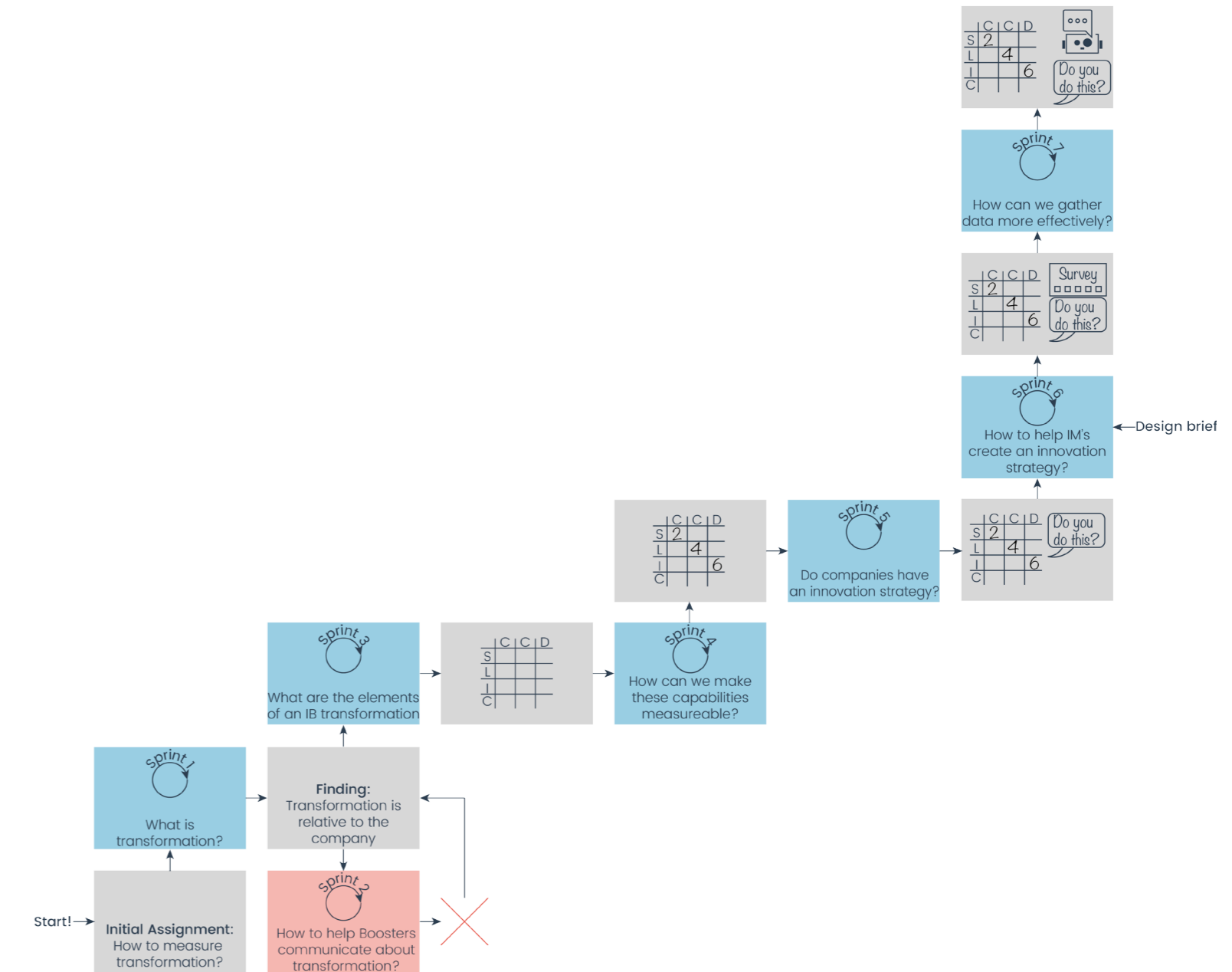


Figure 2.3: Lean development of the service

Elements of Agile Development

The Agile manifesto (Alliance, 2001), presented in figure 2.4, was developed for software developers who needed an approach to handle rapidly changing business environments (Highsmith and Cockburn, 2001).

The main elements from this manifesto that will be used in this graduation are:

- **It is important to deliver value as quickly as possible**, to be able to test assumptions and to empower stakeholders to contribute to the process.
- **Change is the norm, the plan should not restrict the process.** Thus progressive insight might lead to a pivot in design direction.

Figure 2.5 presents an overview which highlights how Agile influenced this project. Two elements in this process worth mentioning are (1) that many experiments with former, current and non-clients have been performed during the process and (2) that numerous 'pivots' haven't taken place. Every 'turn' that the line of blocks makes represents a pivot. The most noticeable pivot can be seen at sprint 2, when an experiment indicated that the problem that was being targeted, wasn't a problem after all and the design direction was reversed towards the clients of IB instead of the Boosters.

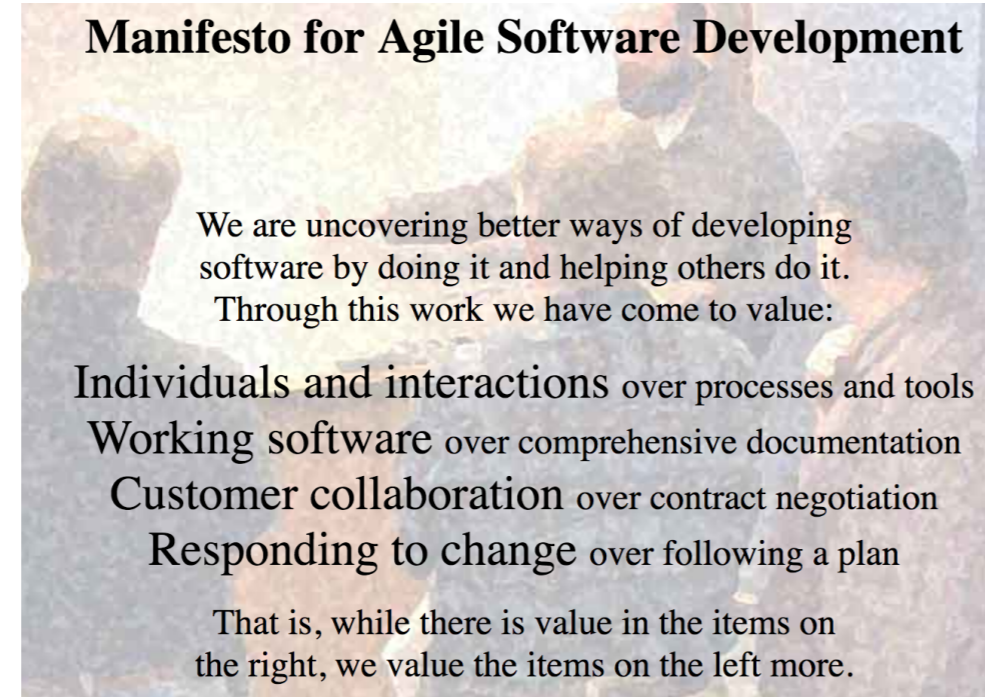


Figure 2.4: The agile manifesto (agilemanifesto.org)

Quality Assurance

At the heart of this new approach lies that it consists of numerous small experiments, using many different testing mechanisms and Minimum Viable Products (MVP's). This is different from most graduation projects which can be seen as the execution of one large experiment. The result is that quality assurance of this project is extra challenging. To ensure trustworthiness irrespective the experimental approach of this graduation, certain measures were taken throughout all the experiments which can be found in appendix 5.

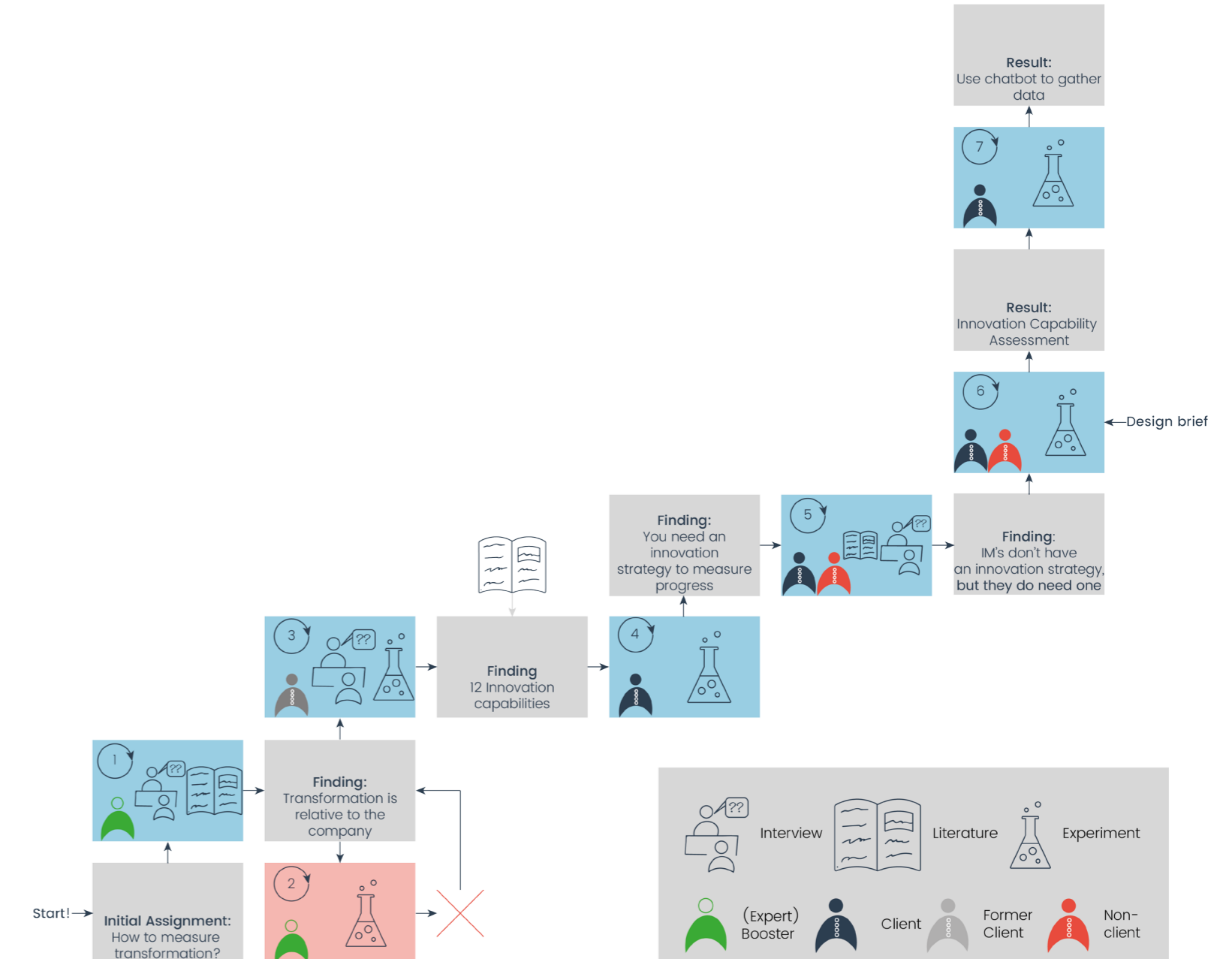
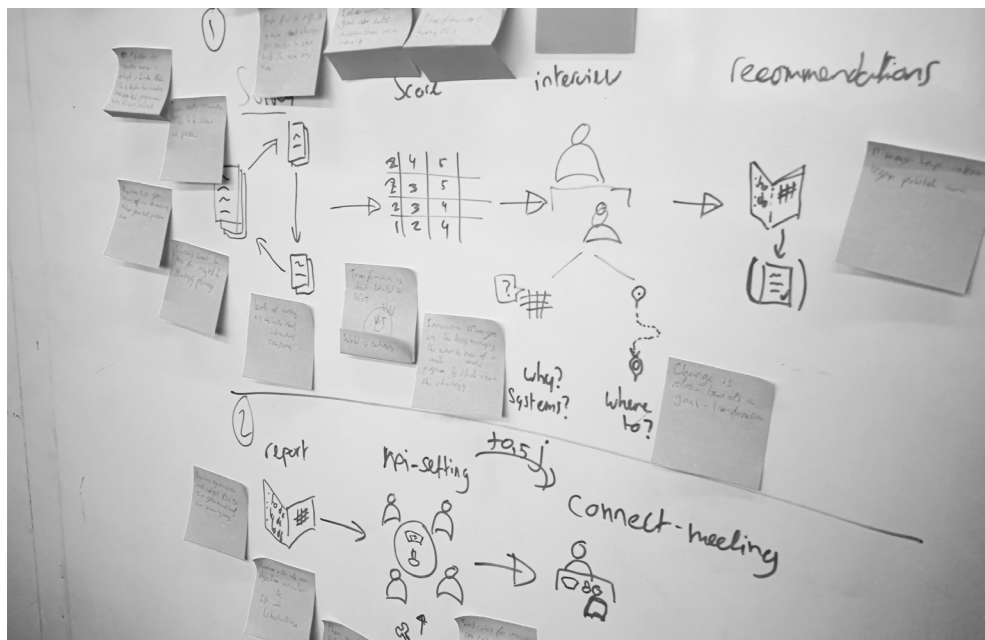
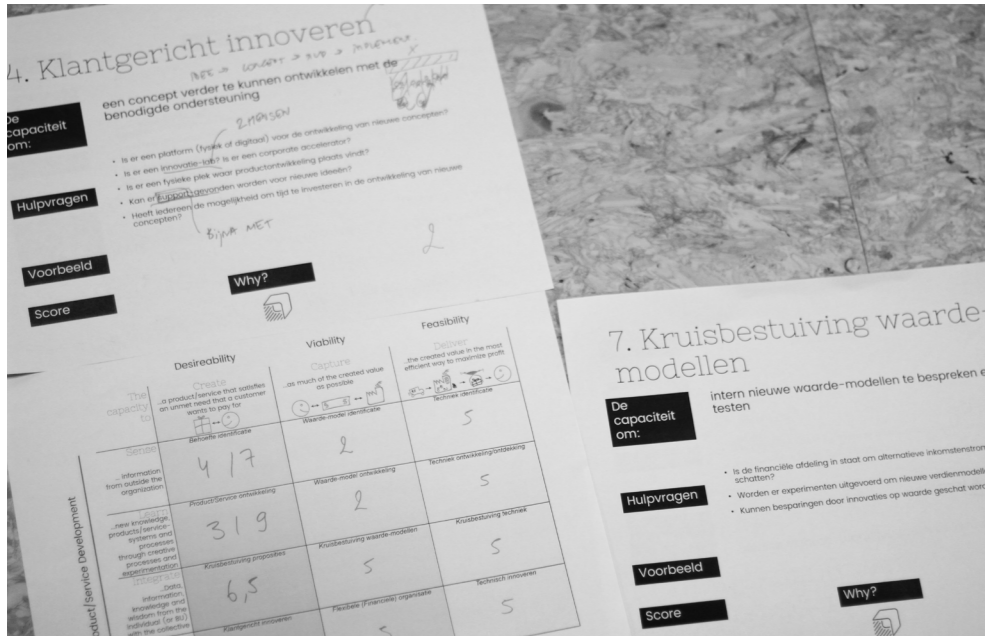


Figure 2.5: Using an agile approach, certain 'pivots' were made because of progressive insight.



Experiment Boards

Every experiment is described with the use of an experiment board as can be seen in figure 2.6. This board (derived from the 'retrospective' in the scrum methodology) describes roughly the following elements of an experiment:

- Who am I targeting in this experiment, what is the characteristic of this group?
- What is the purpose of the experiment, e.g. am I verifying or exploring?
- What method will be used? What does the experiment look like? What actions does it consist of?
- What will I be measuring and what do I expect to measure?

As mentioned, the experiment boards can be found in appendix 1.

The cases

As input for this research project, company cases were used from both companies that were IB's clients and companies that were not. For confidentiality reasons, the names of these companies were replaced. The following list indicates the replacement names of the companies and provides a short description of the company's activities.

WaterCo – Filters and purifies water and delivers it to both industrial and private customers in a specific region.

PostCo – Worldwide packaging company. Delivers packages for both business and private customers, internationally and nationally.

PensionCo – Company that manages large pension funds

BankCo – International bank with both a private and a corporate branch.

MediCo – Global pharmaceutical company that develops and sells medicines for many different kinds of diseases

GovernmentCo – relatively small governmental department that focusses on connecting companies with readily available data.

CareCo – An organization that offers different forms of care for the elderly and disabled. CareCo offers amongst others: stores with products for home-care, several homes for the elderly and care-taking services.

Experiment 3

Customer

Who am I targeting?

Customers, program owner

Relevant Characteristics

- Has responsibility for IB program
- Has experience with IB program

Purpose Experiment

What is the purpose of the experiment?

Determine whether customers understand the framework and can fill it in.

Most Uncertain & Crucial assumption

Presenting the building blocks of the matrix will lead to understanding by customer.

Sub-assumptions

- C'ers understand the terms
- C'ers see the value of the matrix
- If C'ers understand the matrix, they can fill it in

Methods experiment

Tool: Test tool prototype after explanation and ask questions

Main Questions: Do customers understand the matrix and does it increase their understanding of innovativeness

Steps:

• Welcome customer	Explain the building stones of the matrix using the slides	Introduce the prototype	• Ask questions regarding understand and usefulness debrief
• explain goal		Ask to use it (fill it in) and think out loud	
• ask for candid feedback			
• Ask to grade knowledge of own innovation environment			

(Target) Metric:

1. Time needed to create understanding of tool
2. Can the customer fill it in on a high level
3. Answers to questions regarding the tool

Hypotheses:

If I do the presentation, the customer will understand the tool and how to use it on a basic level. Also, the matrix and presentation will increase their understanding regarding their company's capacity to innovate.

Figure 2.6: Experiment boards describe the elements of a sprint

3. Defining Transformation

Before focussing on how to measure this phenomenon, a basic understanding of what ‘transformation’ constitutes is needed.

Research actions:

- Interviews with:
 - Boosters & Founder
 - Dr. Giulia Calabretta, TU Delft professor
- Sprint 1
- Literature on ‘corporate transformation’

To measure transformation, we first have to understand this phenomenon. To find out what transformation is, literature research and a number of interviews were performed. This resulted in a definition of transformation in the context of this project.

The term ‘transformation’ is used to indicate different sorts of corporate changes in the literature. A transformation often comes as a result of a turbulent marketplace and can focus on the products/services that a company offers (such as servitization (Baines et al., 2009) and digitalization (Berman, 2012)) or on how a company operates (such as an agile transformation (Laanti, Salo and Abrahamsson, 2010)). Examples of these transformations are described in the sidebar. Dr. Calabretta described the ambiguity of this phenomenon well: “[whatever the aim], transformation itself is only a means to an end.”

“The literature thus indicates that transformation is a broad concept, which touches the products/services that a company produces, but also other elements of the company”

IB’s view on company transformation

The results of sprint 1 indicated that IB doesn’t necessarily focus on a specific type of transformation. Even more so, this experiment indicated that what a transformation constitutes depends on the industry and the company. A flexible company structure for a bank, might not be flexible when you compare it to the structure of a software company. Comparably, for a company in the pharmaceutical business, being customer-centered has a different meaning than for a department of the government.

According to one of the founders, there is only one common element for all IB’s transformations: they are conscious changes to the company and they aim to prolong the fit with the market of the company.

Three pillars to realize a prolonged fit with the market

Arguably the goal of transformations isn’t the only common element. On a higher level, this research suggests that prolonging a fit with the market is realised by making the company more flexible, more customer-centred and by introducing a structured approach to innovation.

First, ‘creating a flexible organization’ is a requirement to being able to maintain a fit with the market. One of the

Conclusion

The phenomenon ‘transformation’ is full of ambiguity. However, within the transformation projects of IB, some boundaries for what does and what doesn’t constitute ‘transformation’ can be named (as indicated in figure 3.1). This leads to the following definition: “Transformation is the conscious change that a company makes to its products and processes, as a reaction to a turbulent environment to maintain a fit with the market. It includes making a company more flexible, more customer-centric and introducing a structural investment to innovation”

Servitization, digitalisation and Agile transformation

Although transformations are continuous and come in different forms. Specific types of transformations can be distilled. To illustrate some of these transformations, here are three transformations that are currently more prominent:

- **Servitization:** In servitization, manufacturing companies add services to their product offerings or replace their traditional offering entirely (Baines et al., 2009). This forces companies to develop new capabilities to be deliver services. An example of this is Philips, who used to sell lightning bulbs and now also offers a service where they promise to deliver light. This means that they now also have the responsibility of replacing light-bulbs, installing and monitoring the system.
- **Digitalization:** In this transformation, digital services to support or replace the traditional offering are developed in order to grow or differentiate (Berman, 2012). An example of this is BankCo, which used to have many branches of the bank spread throughout the country. Nowadays, the bank host applications and a website which are used to do most of the private banking activities such as transferring money.
- **Agile:** The 'agile transformation' (Laanti, Salo and Abrahamsson, 2010) focusses on a different goal than the previous. This transformation, that originated in the software industry, refers to an internal change (to how a company is organized) rather than on what the company produces. An example of such a company is PostCo, that introduced cross-departmental development teams to focus on specific customer journey elements.

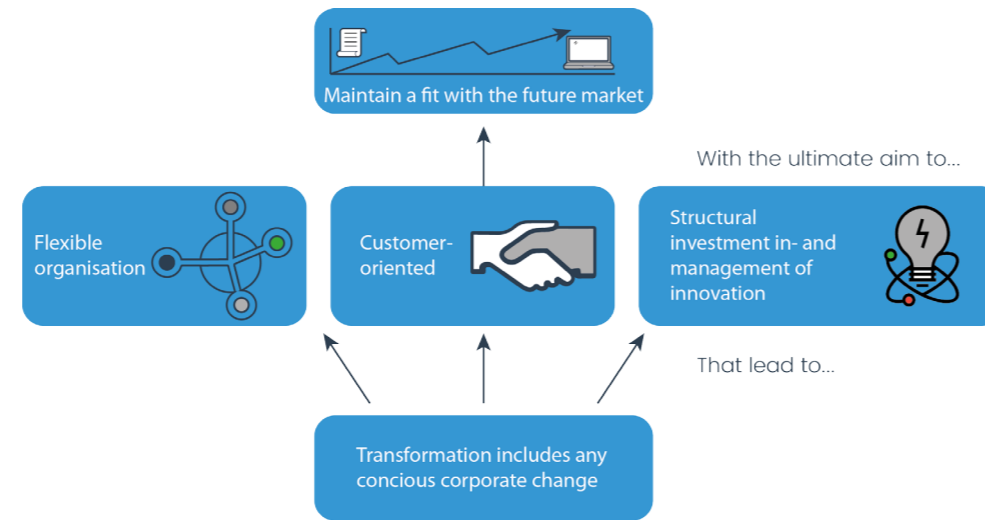


Figure 3.1: The three pillars of transformation to maintain a fit with the future market

Implication and onwards

The results above present a challenge regarding measuring transformation. In short, it will be impossible to create an 'absolute' indicator for transformation. In other words, we cannot say whether a company is at stage 5/10 of a transformation. However, a relative measurement of transformation, i.e. measuring the improvement of a company, might be possible.

The reason that an absolute measurement is impossible, is that if transformation is company dependent, then an 8/10 on customer-centeredness might be different for banks than for governments.

To make this more comprehensible, compare this to the one of the biggest quests of psychologists: measuring happiness. It is impossible to measure whether someone is happy on an absolute scale (Gilbert, 2009). This is amongst others because everyone measures happiness on a different scale. If I say I'm 9/10 happy, how would we know whether that is the same happiness that you experience when you're at 9/10. Fortunately, as you probably agree, it is much more realizable to measure whether someone has become happier. This becomes especially attainable when we have a certain goal in mind i.e. worry less about life.

Whether a company is making progress thus depends on where they want to go (point B) and where they come from (point A). Measuring transformation should therefore include measuring a baseline (determining A) and making a strategy (determining B) and then tracking whether a company is changing towards B.

Your 8/10 on happiness is not the same as mine...

But I know when I've gone from a 6 to a 7



Similarly, one company's transformation cannot be compared to another...

But we can determine whether a company has transformed over time

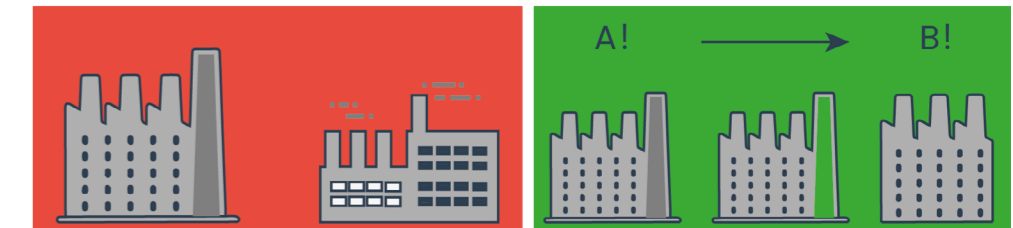


Figure 3.2: Measuring innovation objectively is difficult, but relative measurements to indicate progress are possible

4. Rephrasing the challenge: Innovation Strategy

To maintain a fit with the market, you need to be innovative. Companies need to have an Innovation Strategy to innovate effectively. Interestingly, it seems that IB's clients haven't been able to make this strategy.

Research actions:

- Sprint 5 & 6
- Literature on 'Innovation Management'

To determine the baseline (point A from the previous chapter) and the aspiration (point B), we can look at a company's Innovation Strategy. This strategy describes how a company organizes its innovation efforts to align with the business strategy (Pisano, 2015).

Surprisingly, the results of Sprint 5 indicated that the Innovation Managers (IM's) at IB's clients don't have an Innovation Strategy. As the IM is the person responsible for the Innovation Strategy, one would expect that if an Innovation Strategy is present, the IM would know about it. However, in Sprint 5 of this research (which was essentially a short user research), several semi-structured interviews were held with IM's to determine their needs, wishes and problems. During this sprint, questions were also asked about the Innovation Strategy. The results indicated that IB's clients don't know whether they are innovative and they certainly don't know how to become more innovative.

Interestingly, the IM's did indicate that they would like to have an Innovation Strategy. Sprint 5 & 6 also showed why IM's didn't manage to determine a strategy. The empathy map and persona's that were created to summarize these sprints can be found in figure 4.1 and 4.2.

IM's don't have an Innovation Strategy

When asked about an Innovation Strategy, all but one of the IM's indicated that they didn't have an innovation strategy. For example, the IM of PostCo responded: "Well, I do have an innovation agenda which describes which challenges I want to tackle, who I want to include and what I want to introduce in the program. But I don't have a strategy really". The IM at MediCo responded: "we don't even have a vision for innovation yet, let alone a strategy on how to do it". At PensionCo an elaborate

PensionCo: Evaluating the program and determining how to change it was done by "asking each other what went wrong and looking each other deep in the eyes"

vision was available that described which challenges were tackled in the program and how this benefited the overall strategy of the company. However, evaluating the program and determining how to change it was done by "asking each other what went wrong and looking each other deep in the eyes". One of the companies did have an Innovation

Strategy: BankCo. Here the respondent indicated: "we have a strategy regarding the question 'how do we become more innovative?' It's one of the four pillars of our overall strategy... However, what should be the strategy is an ongoing discussion. For example, we don't know what metrics to use to measure progression yet."

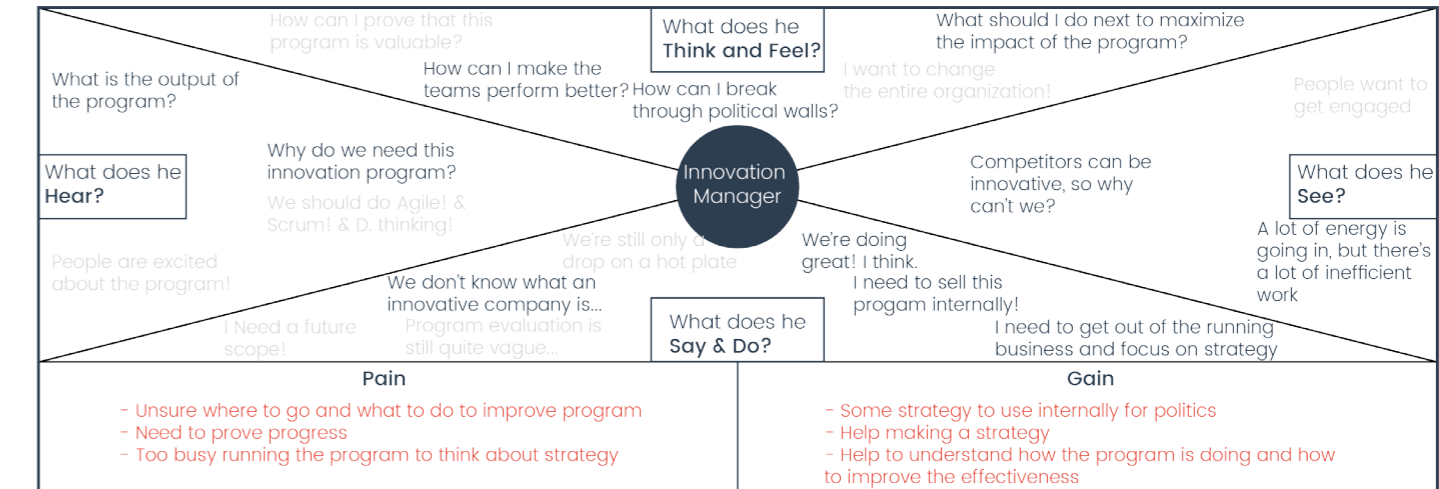


Figure 4.1: Empathy map of the IM



Figure 4.2: Persona's of IB stakeholders at client

Why IM's don't have an Innovation Strategy

When asked why there was no Innovation Strategy in place, the same reason returned. The manager at PostCo mentioned this in a catchy way: "eventually, you get so busy running the program, you don't have the time to take a step back and look at what you're doing." Similarly, the IM at PensionCo responded to a question inferring to his biggest challenge in realizing the goals of his innovation program: "the madness of the day, it takes time and effort to get everyone on board". Eventually, it could be concluded that IM's lack the time, knowledge and tools to make an Innovation Strategy.

MediCo: "What I really need? A strategy that I can use to link my initiatives to and a document to communicate this with people."

Why IM's need an Innovation Strategy

What was also interesting, was that IM's indicated that they did feel like they needed an Innovation Strategy and were interested in help with developing an Innovation Strategy. For example, the manager at PostCo mentioned "Yes we do spend money on consultants to help us define strategy's...I would like to get help to go from running to business to getting an overview". Similarly, the manager at PensionCo mentioned: "Innovation now is a hot topic. Everyone is doing it. That will lead to chaos. So, our question now is: how do we keep the innovation initiatives under control?". The answer to that last question is now clear: make an Innovation Strategy to evaluate your program and make more sensible decisions.

Strategy as a political tool

A last interesting remark that was made by a couple of the respondents was that they all dealt with the challenge of internal politics. For example, the IM at MediCo mentioned: "What I really need? A strategy that I can use to link my initiatives to and a document to communicate this with people." Similarly, the manager at PostCo indicated: "I could use this document to get people on my side in this building". Finally, the manager at PensionCo mentioned: "We can be sure of something at our innovation lab, but if other departments do or say otherwise, you're getting nowhere... We need to know what others think so that we can become an integral part of the company." Again, the only manager that didn't mention politics was the respondent from BankCo, who felt strengthened by the fact that the Innovation Strategy was an integral part of the overall strategy of the company.

Conclusion

Companies need an Innovation Strategy to improve their innovative capabilities. However, clients of IB rarely have an Innovation Strategy. The reasons for this is that IM's don't have the time and knowledge to make an Innovation Strategy. IM's could use a strategy to help them communicate internally, evaluate innovation programmes and make decisions. In figure 4.3 the value proposition that became apparent during this research is presented.

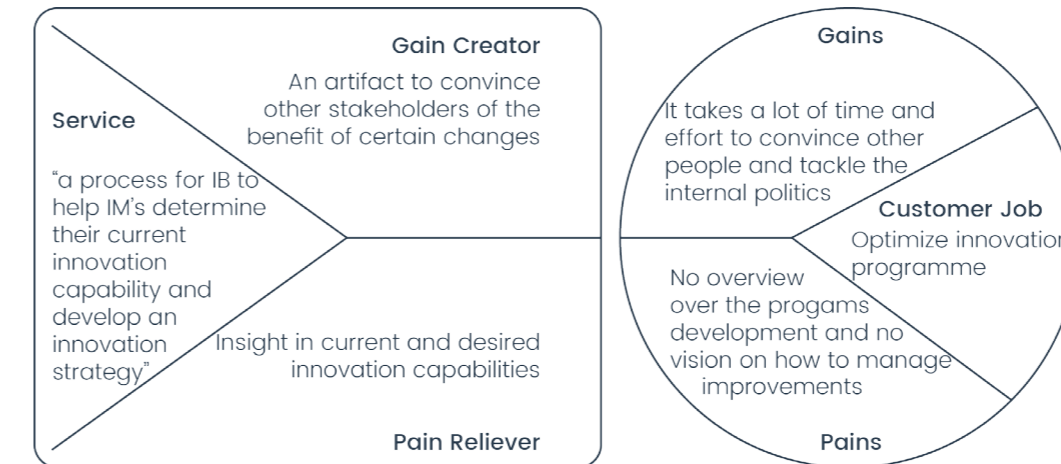


Figure 4.3: Value proposition for this design project

Implication and onwards

To do any sort of measurement, a base-line (point A) and a future goal (point B) regarding Innovation Strategy must be clear. This strategy needs to be determined before we can focus on measuring improvement along this strategy. Therefore, a new design goal was stated halfway through this project. This design goal reads as follows:

Design Goal

"Design a process for IB to help IM's determine their current state of Innovation Capabilities and develop an Innovation Strategy."



Experiment

The following chapters describe the service that was designed: the Innovation Capability Assessment (ICA). Chapter 5 will provide an overview of the ICA. The following chapters describe the underlying theories and choices that were made to get to this concept. In chapter 6 and 7 we describe the theoretical framework that is used in the ICA. The 12 innovation capabilities framework builds on the theories of Innovation Strategy (chapter 6) and dynamic capabilities (chapter 7). After this, chapter 8 will describe why a chatbot is used to gather data. Chapter 9 will finish with a description of the qualitative element of the assessment and elaborate on why this element was added to the service.

5. Innovation Capability Assessment (ICA)

The ICA is a service that helps companies gain insight in their Innovation Capabilities. Here's how it works.

Overview

The ICA is a service that IB can sell to its current clients. It provides clients with insight in their current Innovation Capabilities. Additionally, it exposes which capabilities a client lacks, which it wants to improve and advice is given on how to improve those capabilities.

The proposition consists of 4 phases (as is visualised in figure 5.1). First, quantitative data is gathered from employees through use of a chatbot. This data is then converted and visualized in a grid which describe the '12 Innovation Capabilities'.

Third, because every company is different, a qualitative element has been added to the assessment. In this session hurdles that need to be overcome to improve capabilities are explored and an Innovation Strategy is defined. Finally, IB creates an advice how a company can realise this strategy. Figure 5.1 indicates which insights are most relevant to each phase. In the following chapters, those insights will be described.

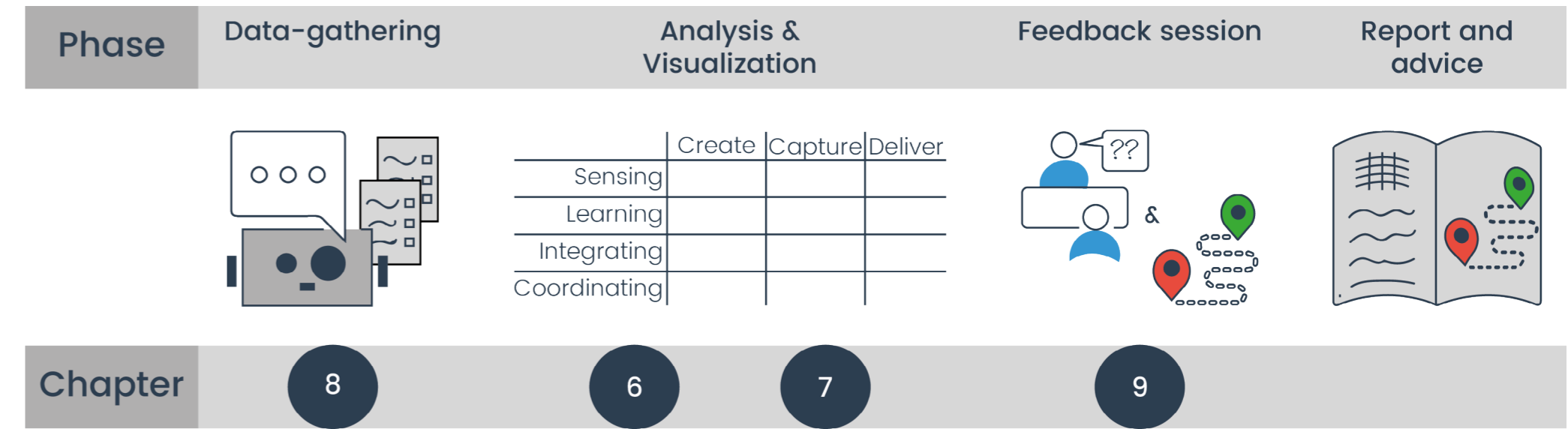


Figure 5.1: Overview of the Innovation Capability Assessment

Business Proposal

Clients will need to purchase the assessment, which will be performed by a Booster over the period of a month. Yet the value for IB is not in the income that is created by doing the assessment. It is more likely to be the heightened chance of a follow-up transformation project, as the assessment ends in a proposal on how capabilities might be improved (with the help of IB).

The four phases

Quantitative data is gathered through use of a chatbot. In this phase, employees from different levels give their perspective on the innovative capabilities of their company. The resulting data is used to create a 360° snapshot of the current situation of the Innovation Capabilities as reported by the employees.

This data is converted to the '12 Innovation Capabilities'. These capabilities have been defined during this research with the use of a literature study and were further developed during the experiments.

Because transformations are different per company (see chapter 3), a qualitative session is needed to analyse the specific characteristics of a client. This session is performed with an Expert Booster (EB), a Booster and the IM. In this session the systems, routines, processes and mindset that inhibit innovation are explored. The uncovered challenges (that need to be tackled if the client wants to maintain a fit with the market) are mapped.

There is also a secondary goal to this session: strategy making. After the IM is informed of the view of the employees and the inhibitions for innovation have been identified, the IM is asked to think about which capabilities he/she wants to improve. The result of this session is a strategy and a roadmap that together give the IM guidance on how to improve the clients innovation program.

Finally, IB creates a report that presents the data that was gathered and the feedback that was given during the feedback session. Additionally, the aspirations of the IM (in the form of a roadmap) and actions that can be taken to build Innovation Capabilities are provided.

Why current clients?

One might wonder why this assessment is aimed at current clients and not on new clients (as a sales tool for example). There are two reasons for that. First, a company needs a certain maturity level of their innovation program. Second, the qualitative session is more effective when a Booster has already been active in the company.

During the experiments, it became clear that the companies that are already working with IB have reached a certain level of maturity in their innovation program (be it in the form of an innovation lab, an internal accelerator, or anything else). Also, in these companies an Innovation Manager is generally appointed. He/she will eventually be evaluated on the results of the program as indicated by IM's at PensionCo, PostCo and WaterCo. Consequently, these IM's will experience the pain and gain that the ICA is designed for. If an innovation program isn't mature enough yet, the need for a strategy hasn't arisen yet and no IM will feel the pain that motivates them to buy the ICA.

Secondly, for the qualitative feedback session to be as valuable as possible, 'inside knowledge' is needed. At current clients, Boosters have experienced the innovation system as outside experts. In the qualitative assessment, knowledge of these Boosters is used as input (as is further explained in chapter 9). This knowledge helps to define why a firm is having trouble with their innovation. Without the knowledge of an internal Booster, it might be much more difficult to correctly determine how a company can improve their innovation program.



6. Creating, capturing and delivering value

Innovation Capabilities part 1, what are the three elements of business innovation for corporates?

Research actions:

- Sprint 2 & 3
- Literature on 'Innovation Strategy'

If you want to know whether a horse is a good runner, you need to know what capabilities determine the quality of a horse (running speed, agility, mental toughness, etc.). Chapter 3 concluded with the remark that in order to measure transformation, a baseline and a desired future state must be determined. However, we haven't yet agreed upon which capabilities to look for to determine these states. This chapter describes the first half of the theoretical background that led to the '12 Innovation Capabilities' grid, which is what this research uses to determine the innovative capability of a company.

Innovation strategy theory

First, let's look at the elements of an Innovation Strategy according to scholarly literature. According to Pisano (2015):

"An Innovation Strategy answers three important questions:

- How will innovations **create value** for the customer?
- How will the company **capture** a share of the **value** its innovations generate?
- What types of innovations will allow the company to create and capture value?" Or in other words: how will the company **deliver value**?

The answers to these three questions (summarized in figure 6.1) describe how a company organizes its innovation efforts. They also describe all the operational capabilities of a company to run the daily business. Within our wide definition of innovation, it can be performed on each of these capabilities.

Create-, capture and deliver value

Innovations can be performed to alter how a company creates value. These innovations challenge the need of a specific customer segment that is targeted and the proposition that is used to do so. Or as Amit and Zott (2001, p. 513) note, "the strategically important ties are those which would contribute in some way to satisfy the customer's needs".

Innovation Strategy: how a company organizes its innovation efforts to align with the business strategy

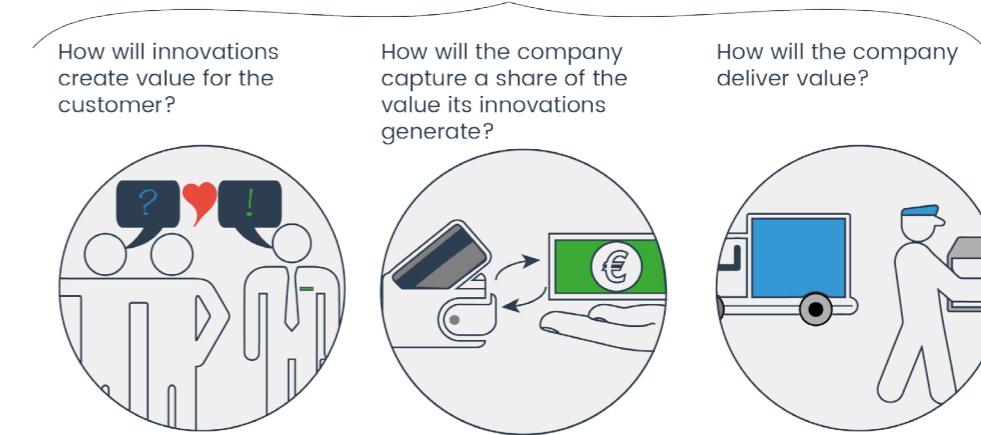


Figure 6.1: The three questions of an Innovation Strategy

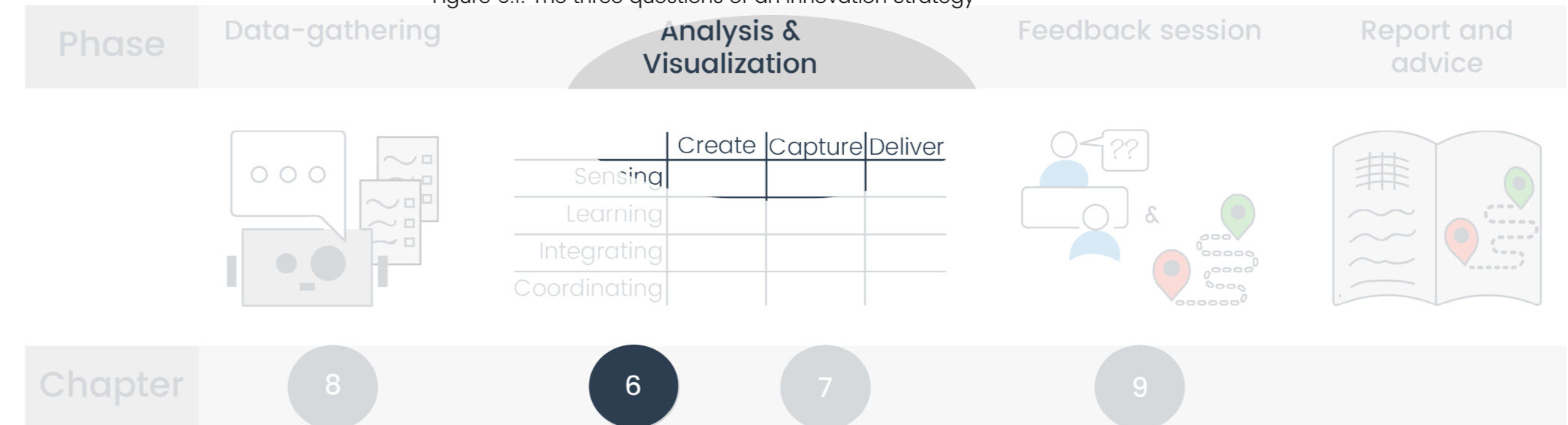


Figure 6.2: This chapter focusses on the Analysis & visualisation part of the ICA

The way in which a company captures value describes the revenue streams, cost structures and potentially the partners that will be included in the model. These elements together make up the revenue model. As Amit and Zott (2001) explain: “The business model and the revenue model are complementary yet distinct concepts. A business model refers primarily to value creation whereas a revenue model is primarily concerned with value appropriation.”

The last question, how a company delivers value, covers elements such as customer relationships, key activities, channels and resources.

Consider more than the business model

You can recognize the elements of the Business Model Canvas in the previous descriptions. However, there is a fundamental difference between a business model and an Innovation Strategy.

First, the “emphasis upon value capture and sustainability is much stronger in the realm of strategy” (Chesbrough and Rosenbloom, 2002). This is important in the context of this research as sustainability of the business is the core concern of transformation.

Second, a business model focusses more on the creation of value for the business rather than the creation of value for the shareholder (Amit and Zott, 2001). This difference is also of importance in the current context as this research focusses on changes in the entire company, including the financial and organizational domain of a company. For example, creating a separate corporate research entity might help with product development as different regulations may apply. However, actions such as these do not appear on the

radar of models such as the business model canvas. This also emphasizes the fact that transformation is about more than product/service innovation, it includes changes in processes or systems.

Consider all three strategic questions

It is important for a company to consider all of the three questions above for their Innovation Strategy (see also the sidebar). What became apparent in experiment 2 and 3, is that certain companies seem to have trouble with specific elements of the Innovation Strategy. For example, GovernmentCo indicated that they had no problem developing the way in which they delivered value. However, they were having trouble finding new ways to create value. On the other hand, CareCo, indicated that they had more trouble finding new ways to deliver value.

Conclusion

For a company to maintain a fit with the market, they will need to innovate on how they create, capture and deliver value. This means that companies need to develop not only the products/services that they deliver, but also the systems and processes that companies use to deliver these services and their business model as a whole.

A capability for each Innovation Strategy questions

The distinction between the different Innovation Strategy elements makes sense as different routines underlie those different elements. To sense new ways of creating value, a company needs to get in contact with its customers or develop ‘market-linking capabilities’ (Chen et al., 2016). Routines that underlie this for example in CareCo’s case meant that caregivers were given specific questions to have their patients answer when they did their visit. These questions were focused on the needs of those patients. On the other hand, in order to develop a new way to capture value, CareCo needed to get in contact with government agencies to see how they could capture value there. What resulted was a proposition in which CareCo sold information regarding their patients to the government so that the government could improve their services.

Implication and onwards

As indicated before, transformation is about being able to maintain a fit the market. The word ‘maintain’ indicates that a firm needs to be able to do this over time. Transformation is thus not about changing the way a company creates, captures and delivers value once. A transformed company is a company that has the capability to make changes within the three elements of the Innovation Strategy time and time again.

In the definition of the Innovation Capabilities, it is useful to separate capabilities that speak to the development of the three different elements of Innovation Strategy because they refer to different characteristics of a company. Now that we know **what** we can change to maintain a fit, the question remains: **how** to develop the three Innovation Strategy elements?

When Companies don't consider all three Innovation Strategy questions

Examples of innovations that don't create value are multifold. They are in the many stories that are told about products that were developed by large enterprises but that no one was waiting for. Value is created when attention is paid to the need of the user, because value is based on customer perception (Bowman and Ambrosini, 2000). However, there are many other products and services that don't create value, even though they do serve a need. This is because value is only created when the price to be paid is lower than the use value of the product. For example, PostCo invested heavily in a box which could be used to ship cooled pharmaceutical products. The box would connect to the trucks of PostCo to collect power to for the cooling system. However, once the product launched, the costs to remodel the trucks to be able to power these boxes turned out to be too high. This resulted in a service that was highly demanded by customers, but never became a reality.

Once a company has realized to create value, there is still quite a challenge left: capturing that value. There are two considerations that determine whether value can be captured after it has been realized: whether customers can easily find the same value cheaper somewhere else and whether suppliers can sell their input for a higher price somewhere else (Bowman and Ambrosini, 2000). CareCo has experienced this first-hand. The stores of CareCo offer products to help people live at home longer. The products are offered to the people that need them (formal and informal caregivers) in the place that they need it (physiotherapist, settlements, etc.). In other words, there is a working value proposition. However,

because the prices of the products are so high, caregivers are willing to go out of their way and invest considerably more time to buy the products somewhere else and save money and thus the stores of CareCo are turning out losses.

Last, innovating on how value is delivered has a high impact on whether a business model will work. A well-known example of when a company failed to innovate on how value is delivered, is the story of Kodak (from the introduction). Kodak was one of the first companies to develop digital photography, but was too late to accept the impact that this technology would have on the business models of companies that were making camera's. The result is that Kodak is now nearly bankrupt, whilst its competitors that operate in the same industry (e.g. Canon and Nikon) are gigantic and thriving economic forces.



7. Dynamic Capabilities

Innovation Capabilities part 2: now that we know which elements of the business clients need to develop, how can firms innovate on these elements?

Research actions:

- Sprint 3 and 4
- Literature on 'Dynamic Capabilities'
- Interviews with Boosters and Founder

From chapter 6 we know that we need to look at how a firm creates, captures and delivers value. However, we don't want to know how a company can do this once, but what a company needs to do systematically to change these three elements as the market changes. In short, to do this firms need to build dynamic capabilities and foster the right micro-foundations.

A firm needs dynamic capabilities to change its operational capabilities. Dynamic capabilities are a collection of routines that are defined by (personal) traits, processes and interactions (Teece, 2007). Through these capabilities, a firm senses market changes, learns how to deal with those, integrates the knowledge that it gathers and coordinates a change in the way it performs its daily business.

Before we get into the details of these capabilities, let's set a definition for operational capabilities. In this report, we will take a resource based view. In this view, a company exists out of a 'bundle of resources' (Eisenhardt and Martin, 2000). These

resources can be tangible or intangible and can be either owned, controlled or a company can have (semi)-permanent access to it (Helfat and Peteraf, 2002).

These resources consist of assets and capabilities which can be seen as (collections of) routines (Winter, 2003). An example of an asset would be WaterCo's access to the water network of the nearby area and a capability of PensionCo is their ability to invest and spread risk across a diverse investment portfolio. Within IB, capabilities are often referred to as the way of working (WoW) and the way of thinking (WoT). According to the Boosters, this way of working is a symptom of the way of thinking (See figure 7.2).

Some capabilities might be distinctive (and thereby provide a sustainable advantage) and some are not. For example, PostCo has invested for years in expanding their network and optimizing delivery routes. This network is now their key competitive advantage over startups that aim to enter the package-delivery industry.

Routines (and thus capabilities) and assets are non-dynamic and as Teece (2012) notes: "Fast-moving competitive environments require continuously modifying, and, if necessary, completely revamping what the enterprise is doing so as to maintain a good fit with (and sometimes to transform) the ecosystem that the enterprise occupies." In other words, firms need to continuously seek to alter their operational capabilities to maintain a fit with the market (which we stated is the goal of transformation)

A company must develop what is called 'first-order' dynamic capabilities (Winter, 2003) to change their operational

capabilities (or 'zero-order' capabilities, needed to run the daily business). In IB terms, having dynamic capabilities means being able to change the way of working and way of thinking of an organization.

With this being said, we can conclude that a transformed company is a company that has developed dynamic capabilities. If this is the case, then we can say that IB holds a belief that is consistent with Teece's view of dynamic capabilities (Peteraf, Di Stefano and Verona, 2013). In this view, dynamic capabilities can be a source of sustainable and competitive advantage. This belief was also emphasized by one of the Founders of

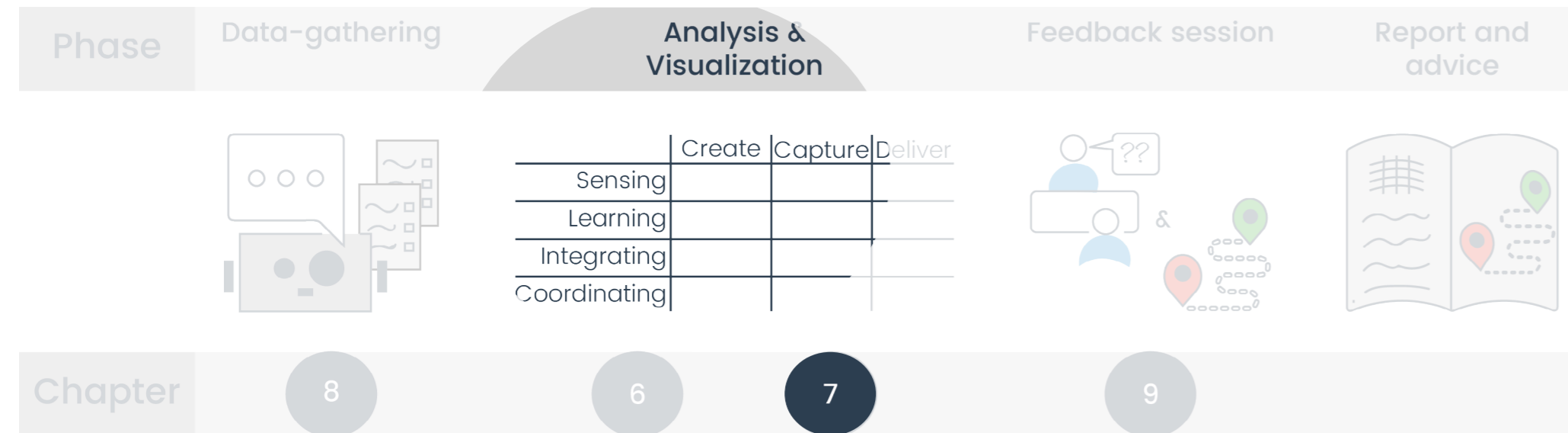


Figure 7.1: This chapter focusses on the Analysis & visualisation part of the ICA

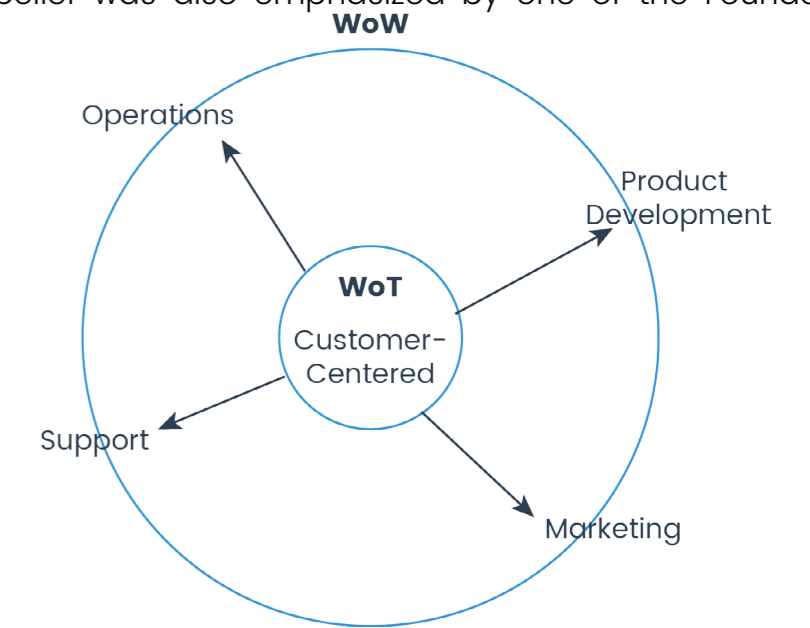


Figure 7.2: a Way of Thinking leads to a Way of Working

IB who mentioned that “transforming was more important in markets that are now rapidly changing such as banking and insurance”. That dynamic capabilities are more important in dynamic markets is also one of the key consideration in Teece’s view as opposed to Eisenhardt and Martin’s (Peteraf, Di Stefano and Verona, 2013)

Micro-foundations

In this research, we will also adopt the micro-foundations view. This view “proffers that an explanation of these collective phenomena requires consideration of lower-level entities, such as individuals or processes in organizations, and their interactions.” (Felin et al., 2012, p2). In other words, dynamic capabilities are constructed of recognizable individual traits, processes and (system) interactions (see figure 7.3). These micro-foundations have been described by many authors (Teece, 2007; Kindström, Kowalkowski and Sandberg, 2013; Janssen, Castaldi and Alexiev, 2015).

The micro-foundations that will be used in this research are those as stated by Pavlou and Sawly (2011) who “reconciled the various labels and meanings from the literature, and grouped them under a parsimonious set to reflect Teece et al.’s (1997) and Teece’s (2007) conceptualization, our own interpretation of the literature, and relevance to NPD business units”. This interpretation seemed fitting in the innovation context and the fact that we are accepting Teece’s approach to dynamic capabilities.

The micro-foundations in the framework of Pavlou and Sawly (2011) are grouped in four capabilities:

- Sensing, or “the ability to spot, interpret, and pursue opportunities in the environment”
- Learning, or “engage in learning to find new solutions, create new knowledge, and reconfigure existing operational NPD capabilities to develop new products.”
- Integrating, or “to combine individual knowledge into the unit’s new operational capabilities”
- Coordinating, or “to orchestrate and deploy tasks, resources, and activities in the new operational capabilities.”

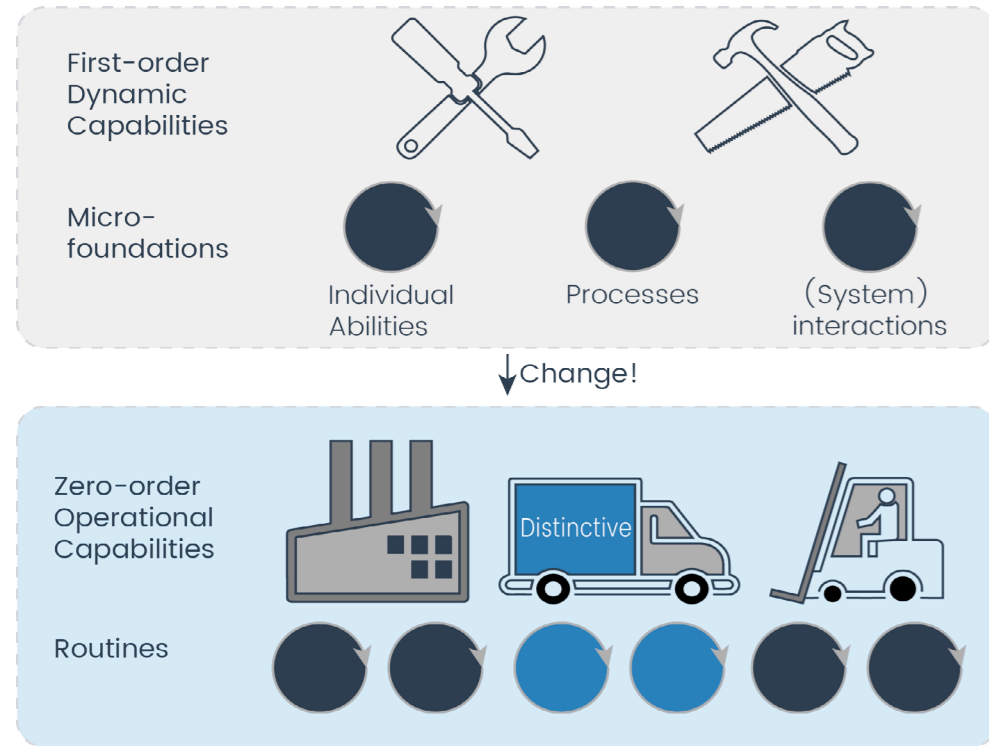


Figure 7.3: Capabilities and their underlying elements

The reconfiguration of operational capabilities (which is the final step in many DC frameworks) is the ultimate goal of dynamic capabilities and thereby not a separate step (see figure 7.4). What is interesting to note here, is that there is a separate category for the coordinating capability. This underlines the attention for practical implementation that is needed for change to happen. This is also closely aligned with IB’s vision that they want to truly ‘implement change’, not just think about doing it. This is also in line with their bottom-up approach as opposed to creating a high-level strategic goal and pushing that down the company.

Why not just measure dynamic capabilities?

One could argue that to measure transformation, we can simply measure the dynamic capabilities of clients. However, the dynamic capabilities literature has one returning and in this case critical challenge: it is hardly ever operationalized. In some specific cases and industries this has been done (e.g. Kindström, Kowalkowski and Sandberg, 2013). Some other scholars are currently busy trying to operationalize the concept (Pavlou and Sawly, 2011; Janssen, Castaldi and Alexiev, 2015). But a definitive operationalisation, let alone in the context of enterprise innovation, has not yet been created.

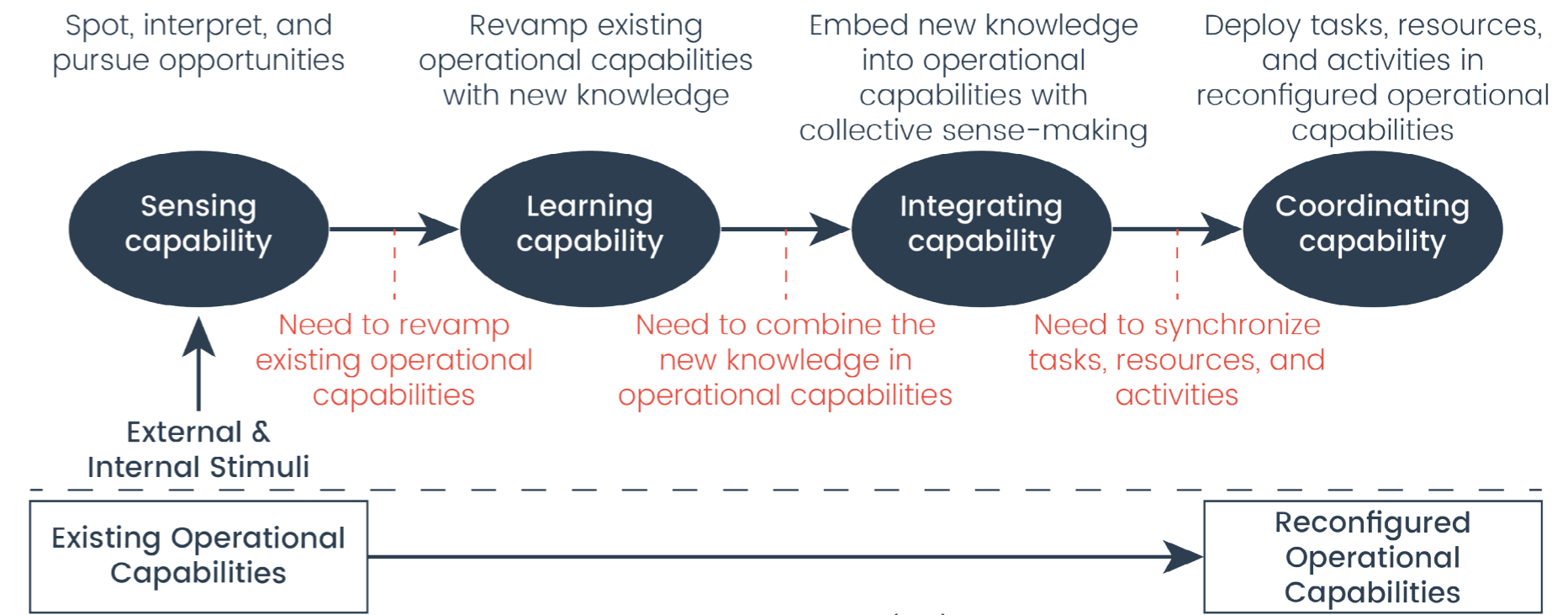


Figure 7.4: Dynamic Capabilities framework as proposed by Pavlou and Sawly (2011)

Conclusion

Dynamic capabilities are the routines that change operational capabilities. Having dynamic capabilities means being able to change the way of working and way of thinking of an organization to maintain a fit with the environment. To measure a company's transformation thus means: measure its dynamic capabilities.

There are four dynamic capabilities that can be identified: sensing, learning, integrating and coordinating. These dynamic capabilities exist of micro-foundations. These micro-foundations include individual traits, processes and (system) interactions. In the literature, micro-foundations are rarely operationalized. In this research therefore, it is needed to operationalize the micro-foundations for Innovation Strategy.

Implication

As described in the previous insight, there are three questions that an Innovation Strategy is concerned with: how a company creates value, how it captures value and how it delivers this value. These three elements consider operational capabilities. Chapter 7 explicated the four capabilities that a company needs to change its operational capabilities.

If transformation is about building dynamic capabilities, then that means that a transformed company should have all four capabilities with regards to the three questions of an Innovation Strategy. This means that a total of 12 'Innovation Capabilities' become apparent. These are all the capabilities that a company can develop to ensure a lasting fit with the marketplace. This is also a way to operationalize dynamic capabilities. The capabilities can be visualized in the framework in figure 7.5 (next page). For example, a company should develop the capability to sense new ways of creating value, but at the same time, it should also sense how to capture this value.

What is interesting to note is that the underlying routines that make up the Innovation Capabilities might be different depending on the segment. For example, in PostCo's case, integration on the element of value creation meant building an IT platform to communicate about the different 'routes' that a package could take and to connect different IT-systems to communicate with each other. On the other hand, for CareCo being able to integrate information for value creation meant organizing monthly lunch sessions where caregivers could talk to each other to discuss the needs and wishes that they perceived.

The innovation capability framework will be used in this research as a 'canvas' to visualize in which way a company already has transformed and where challenges are localized.

Onwards

Now that we know what to look for, the following chapter will focus on how to form an opinion on the 12 capabilities. In experiment 3, 4 and 5, 'measurement' of the Innovation Capabilities was done by asking IM's to estimate their Innovation Capabilities (with the help of sub-questions). The feedback from these

experiments resulted in a proposition where this subjective input of one IM is replaced with the gathering of data from different employees in the company. The following chapter will explain why this data-gathering element was added and in what form.

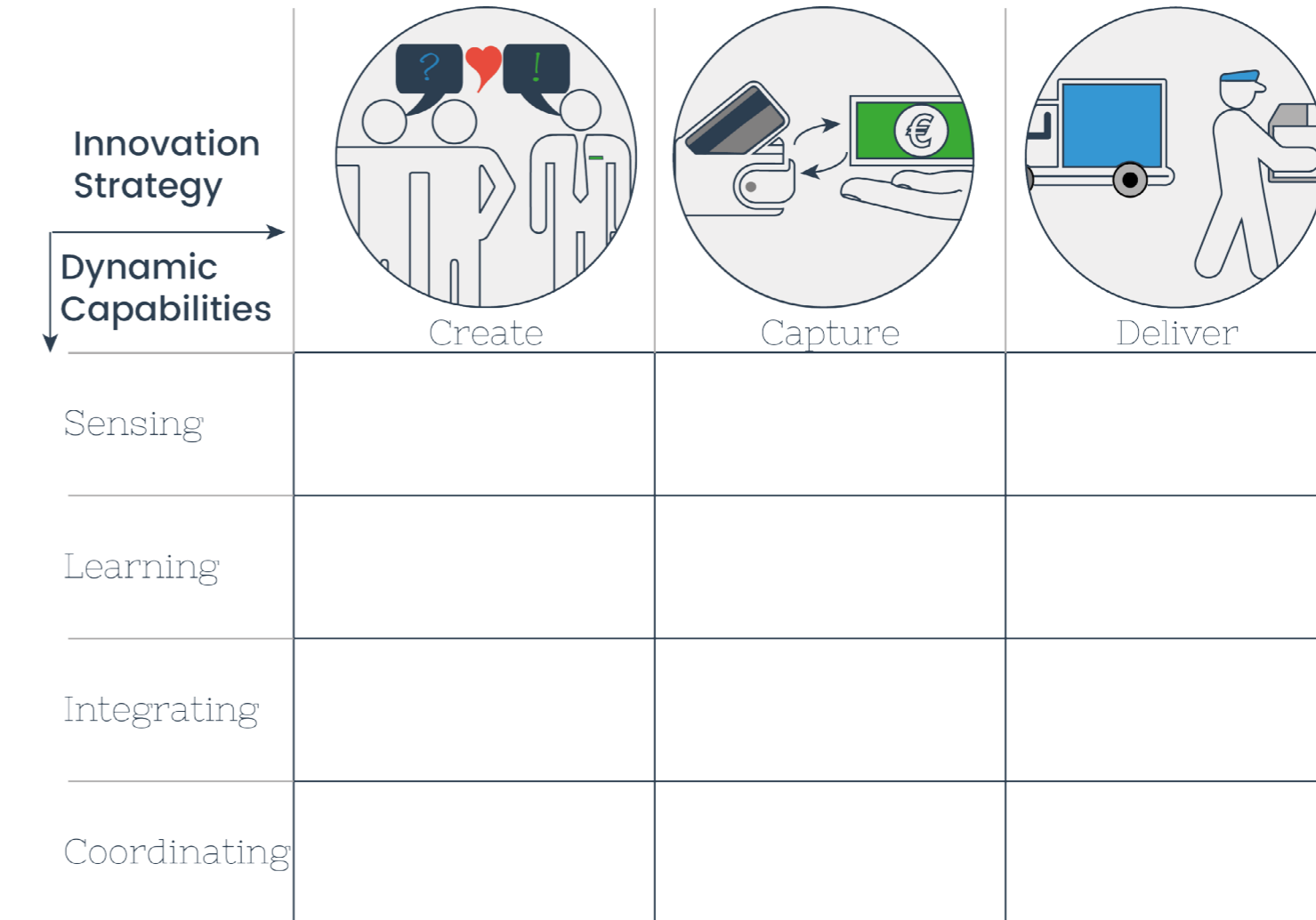


Figure 7.5: The 12 Innovation Capabilities grid

8. Chatbot data gathering

Asking Innovation Managers about Innovation Capabilities is insufficient. Therefore, a chatbot was developed to gather the opinions of various employees on Innovation Capabilities.

Research actions:

- Sprint 4 & 5 to indicate need for multiple views
- Sprint 6 & 7 to experiment with survey & chatbot

Why gather data

As indicated in earlier insights, for IM's it is valuable to gather the views of others on the innovation program rather than filling in the 12 Innovation Capabilities grid themselves. This is valuable for two reasons: IM's have a subjective view of innovative capabilities and the information of others can be used for

internal political purposes (see sidebar).

During experiment 3, 4 and 5, where IM's were asked to use the framework to indicate their company's capabilities, an interesting insight surfaced. IM's (i.a. at WaterCo and PostCo) mentioned that they see more of the program than others and therefore have an overly positive image. Collecting views of others inside the company may create a more 'objective' view of the capabilities of a company, by balancing out the overly positive view of the IM's with the views of employees that have (not or only slightly) been involved with the program. This information would be valuable input for the qualitative session that is discussed in the next chapter.

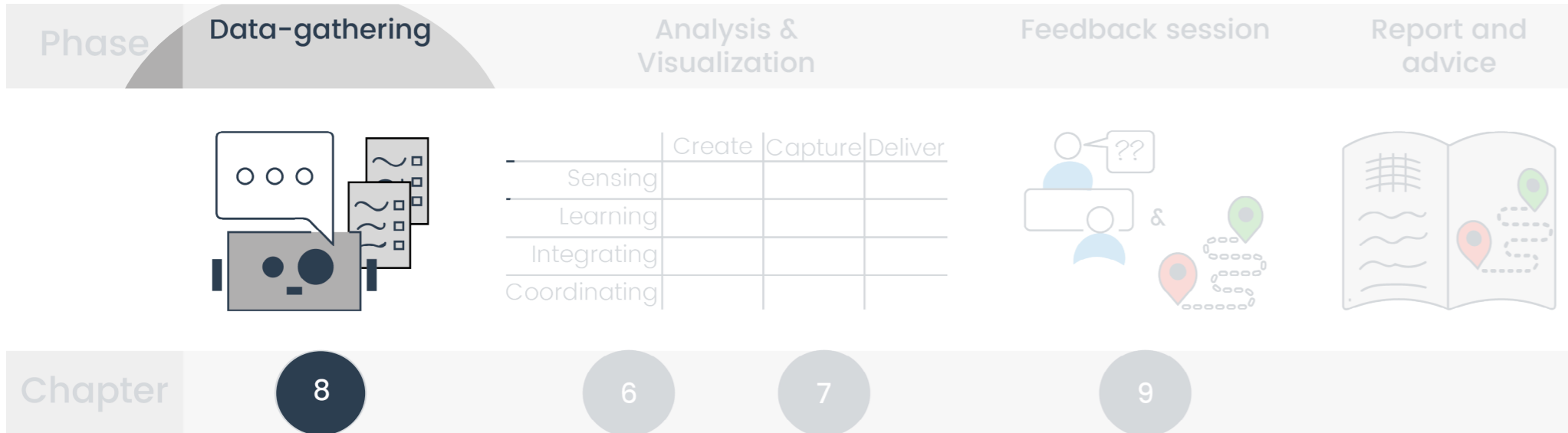


Figure 8.1: This chapter focusses on the data-gathering part of the ICA

Why a survey is inappropriate

To answer to these inquires, a quantitative data-gathering element was added to the proposition. Initially, a survey was proposed to clients in experiment 6. However, using a survey turned out to be challenging for several reasons.

First, using a questionnaire leaves little room for explanation while the questions that needed to be asked were sometimes quite complicated (without an explanation). This became apparent when in experiment 6 a MVP of the survey was tested. The IM responded with remarks such as: "I was already confused after the first couple of questions."

Second, to get a complete overview of the company, different levels (i.e. operation, tactical and strategic) of the company needed to be inquired. Ideally, the questions that these respondents would get, would match their level. For example, operational employees would be asked questions that refer to the innovations that they participated in, whilst strategic managers would be asked about higher-level concepts such as culture, company structure and vision.

A last challenge in using a survey is that with multiple questions regarding 12 capabilities, quite a few questions in total needed to be asked. Using a standard survey, this would result in a lengthy, boring and unrewarding experience as the IM of PostCo quite bluntly mentioned: "I though there were a hundred questions, there seemed to be no end to this thing!".

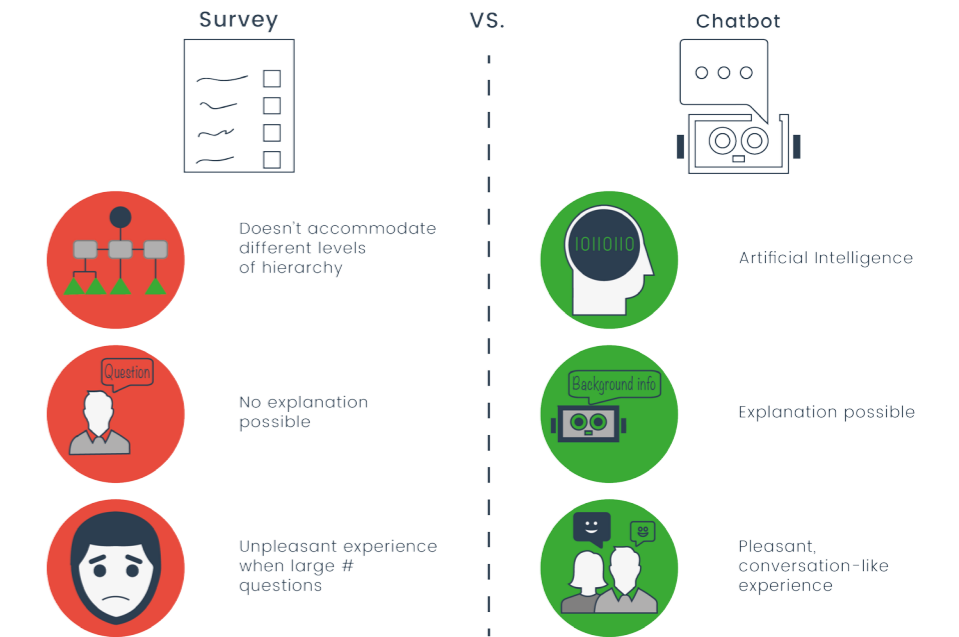


Figure 8.2: Why a chatbot is more appropriate

Gathering data to use in internal politics

It is valuable to collect information throughout the company to support the IM with internal politics. As mentioned before, internal politics are one of the major struggles of IM's in their quest to make their company more innovative. Several of the IM's indicated that they would like to know what others think of the company's innovative capabilities. This information can be used to spot differences in opinion and elements that others are explicitly negative about. This could guide the IM in knowing who to talk to and which challenges to tackle first.

The Assessment chatbot

The result of sprint 7 was: build a chatbot that talks to respondents about innovation and asks them questions in the process. The challenge that this aims to solve is: how to motivate employees to participate in the survey and retrieve the correct data.

A chatbot is basically a computer personality, that can communicate via a messenger service (e.g. Facebook Messenger). Chatbots have been around since MSN messenger but have recently made a comeback as advancements in Artificial Intelligence and Big Data have opened new opportunities for these computer programs. Interacting with a chatbot is like interacting with a person. In this case, a person that gives you information about innovation (to clarify the questions) and asks you questions about capabilities.

On the 'Back-end', the chatbot is a combination of more than 200 messages and questions ranging from short messages such as: "thank you for your answer" to questions such as "Do you disagree or agree with the following statement: we use qualitative insights from customers (such as needs and wishes) to develop concepts". For a complete overview of the script, see appendix 6.

The messages are presented by an algorithm, made up of simple rules such as: if this answer is such, then ask this question. To structure the responses, the chatbot often offers possible answers (e.g. likert-scale answers), as can be seen in figure 8.3. The questions will in part be based on the actual historic actions of the operational employees and partly on the different views that management has on the company.

The chatbot was designed with the following principles (as are explained in more detailed in the sidebars on the following page). The chatbot needs to:

Provide a good experience for the respondent By:

1. Using 'Artificial Intelligence' and offering background information on the questions (see figure 8.4)
2. Make the experience more 'like a conversation' (figure 8.5)
3. Informing the respondent on progression (figure 8.6)

Motivate employees to participate in the survey by:

4. Rewarding them
5. Informing them of the purpose of the survey (figure 8.7)

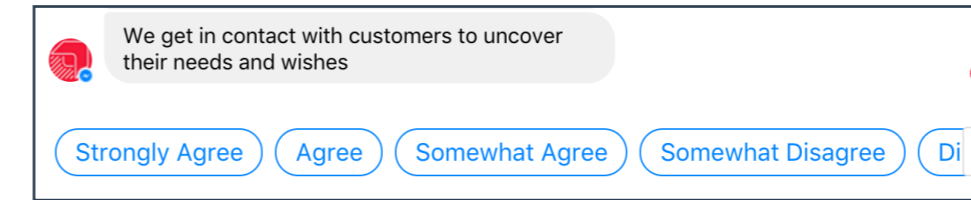


Figure 8.3: Screenshot of the chatbot giving answer possibilities

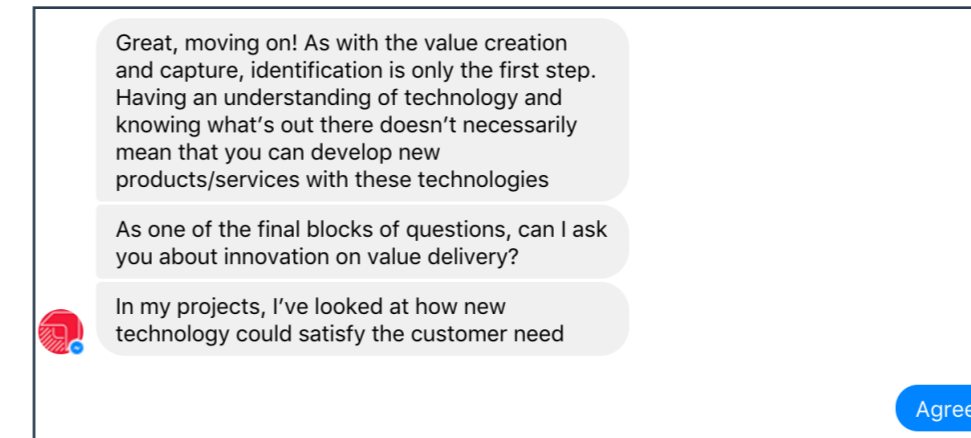


Figure 8.4: Screenshot of chatbot giving background information

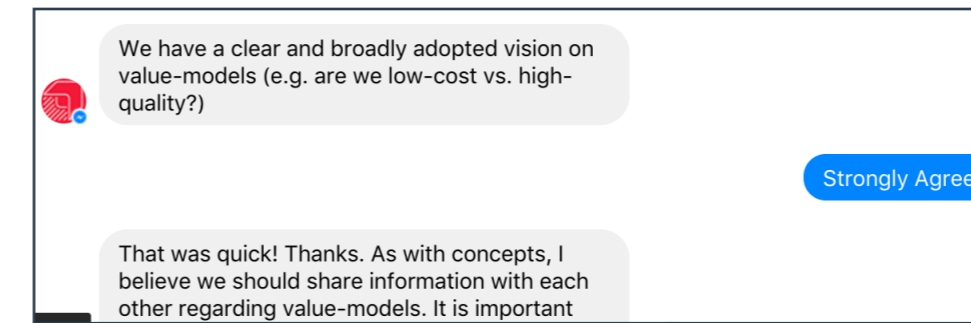


Figure 8.5: Screenshot of chatbot giving conversation-like answers

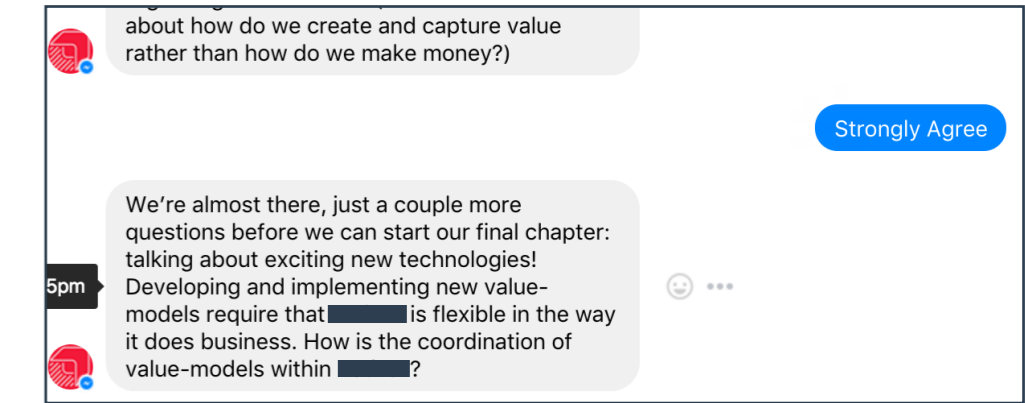


Figure 8.6: Screenshot of chatbot informing on progress

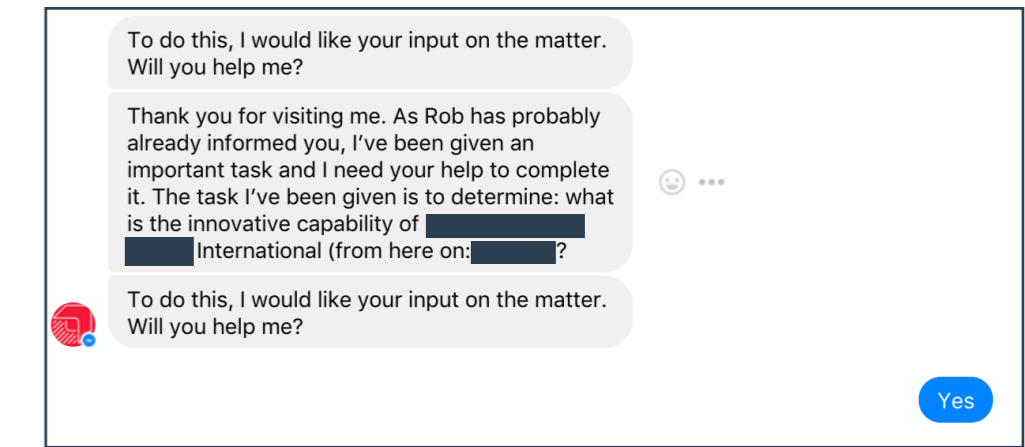


Figure 8.7: Screenshot of chatbot informing on purpose of survey

The chatbot results

A datafile is created after every chatbot session consisting of the role of an employee and all the responses to the questions (in the form of likert-scale answers). The results of the chatbot will need to be analysed by a Booster and converted to the 12 capabilities framework that was presented in the chapters before. This will make the results useful as input for the qualitative session. By way of example, the converted results of experiment 7 can be seen in figure 8.8.

Besides presenting the grand average of scores that the employees have given, it is also interesting to split the results between the different corporate layers (as in figure 8.9). On top of adding 'depth' to the results, the difference in opinions between layers could also be interesting for political purposes.

Combined	Create	Capture	Deliver	Tactical	Create	Capture	Deliver
Sense	4,8	3,1	4,9	Sense	5	2	5
Learn	3,7	3,3	4,0	Learn	3	3	5
Integrate	4,0	4,3	3,8	Integrate	4	3	4
Coordinate	4,0	3,8	3,9	Coordinate	5	4	4

Strategic	Create	Capture	Deliver	Operational	Create	Capture	Deliver
Sense	4	3	4	Sense	6	5	5
Learn	4	4	4	Learn	5	3	4
Integrate	3	5	4	Integrate	5	5	4
Coordinate	4	4	4	Coordinate	4	3	4

Figure 8.8: The results of experiment 7 presented on the capabilities grid

	Create	Capture	Deliver		
Sense	1,5	2,5	1,1	Operational + Strategic -	Operational + Tactical -
Learn	2,0	0,9	0,9	Operational + Tactical -	
Integrate	1,4	1,7	0,5	Operational + Strategic -	Operational + Tactical -
Coordinate	1,0	1,3	0,8		

Figure 8.9: A presentation of the 'spread' of answers within PostCo

How to motivate employees to participate in the survey

Respondents are motivated to respond by rewarding them and informing them of the purpose of the survey.

During the conversation respondents are provided with information about innovation as a type of reward. This information is supported by links to video's and websites to that provide interesting information (although this was not part of the MVP). The links that are provided are both amusing and informative and thereby target a large audience. A second reward that is provided is that respondents are given the opportunity to receive a personalized report of their view on the company. In this report, respondents can see how they responded relative to the majority. This might provide them with an interesting insight on how they see their company and how they can improve this. This reward is especially beneficial to employees that are interested in innovation.

As mentioned, a last principle that is used to motivate employees to fill in the survey is that the goal of the survey is introduced clearly. The name of the IM is used to engage employees and the survey is positioned as a request from the IM (see figure 8.7).

How to provide a pleasant experience for the respondent

First, a basic sort of 'Artificial Intelligence' was built into the script of the bot. At the beginning of the chat-session, the bot asks respondents what their role in the organization is. Depending on the answer, the bot selects a category of questions (operation, tactical or strategic) to ask to the respondent.

Second, the entire chat session with the bot is set up as a conversation about innovation. This creates the possibility to add messages that explain the background of certain questions (as can be seen in figure 8.4).

Also, to make the experience more 'like a conversation', the chatbot would occasionally react to what the respondent enters e.g. by thanking for answers (see figure 8.5).

Finally, to make the survey more accessible and feel less lengthy, the chatbot regularly informs the respondent on the progression of the conversation (as can be seen in figure 8.6).

Conclusion

To help the IM with internal politics and to gain a more 'objective' input for the qualitative session, views of other employees are gathered. This information is not gathered using a survey, because the questions are too difficult, specific questions need to be asked to specific employees and the experience of consecutively answering more than 30 likert-scale questions is rather unpleasant.

Instead, a chatbot was designed which is programmed to have a conversation with employees about innovation and thereby also asks questions about capabilities. This chatbot was designed to provide a pleasant experience and motivate employees to answer all the questions that the bot poses.

Implication and onwards

The first phase of the ICA is the introduction of a chatbot to multiple employees of different levels inside the company. The chatbot will need to be personalized to (the hierarchy of) the company and the specific unit to be assessed (by unit, the department of a client to be researched is meant). Throughout many of the sprints it became apparent that the answers that are given depend highly on what department is being assessed. This is understandable if we think about for example the cultural differences between the operations and product development team. The modification of the assessment and the analysis of the results will take time from a Booster. However, the report of this scan is expected to add to the perceived value of the scan. This also adds justification for IB to 'sell a Booster' for a month.

Once the data is gathered and has been analysed and visualized using the 12 Innovation Capabilities grid, it can be used as input for the qualitative feedback session, which is the subject of the next chapter.



9. Qualitative feedback session

Once the data has been gathered and the Innovation Capability grid has been produced, a session is held to discuss the results with the IM. This session is what makes the ICA unique to IB: it leverage's IB's experience.

Research actions:

- Sprint 5, 6 & 7
- Competitor analysis

The third and last phase of the ICA is a qualitative feedback session with the IM, the internal Booster and an EB. In this session, the results of the data-analysis will be discussed and a roadmap will be made. First, this chapter will explain why it is necessary to add this element to the assessment. Following this, an explanation and argumentation will be given for what this session entails.

You might wonder: Why is analysing the chatbot data insufficient to formulate an advice on what to do? Why can't IB just do a sense-making trick, produce a report and wrap it up? Well, first and foremost because every company is different and as previously mentioned: every transformation is different. To explain this in more detail: as has been mentioned in chapter 7, capabilities are made up of different micro-foundations. These micro-foundations exist of individual level abilities and practices at the interaction level (Karpen, Gemser and Calabretta, 2017). These two combined lead to corporate capabilities. There is a complicated interplay between those abilities and the

interaction component. The result is that a simple scan is not enough to figure out which micro-foundations specifically lead to which capabilities. In a qualitative session, Boosters can find out which micro-foundations might need to be strengthened.

The second reason why this qualitative feedback is needed is that the assessment thereby leverage's the unique knowledge and experience of IB. In order to understand why this adds to the perceived value of the ICA, a look at IB's strengths is useful. IB has three unique strengths:

1. They have Boosters that have a bold attitude and an entrepreneurial mindset
2. They have a corporate innovation methodology and knowledge of many tools and frameworks that can be used whilst innovating in a corporate setting
3. They have, by now, performed more than a 100 corporate innovation projects in different industries in different phases of development. They have worked both with companies that needed to build an innovation system from the ground up (e.g. PensionCo) and with companies that were already quite far in their development (e.g. BankCo)

The first strength is difficult to maintain as a competitive advantage, especially as people tend to job-hop fast nowadays and competition for talent is becoming more fierce (Bartlett, Ghoshal and Review, 2002).

During strategy sessions of IB, it has also become apparent that the second strength of IB is decreasingly unique. More innovation- and design consultants are appearing, large consultants are buying design companies and IB is seeing

more competitors move into the field of corporate innovation. All of these parties develop methodologies for innovation and most of them borrow elements of design thinking, Agile and even sometimes Lean Startup.

The third strength: experience and the knowledge that comes from this experience, however is difficult to copy (Halawi, Aronson and Mccarthy, 2005). By introducing an EB in this element, the explicit, implicit and tacit knowledge of IB can thus be leveraged and the perceived value of the ICA can be increased. EB's can compare the results with other projects that they've done and possibly recognize challenges that they've seen before. In fact, both BankCo and PensionCo mentioned that they would like to hear how other companies from other industries solve challenges. For example, at this moment multiple different clients of IB are struggling with how to select team-members for innovation teams. Imagine what value it could bring to clients if one of the clients finds a way to select 'intrapreneurs' and IB can share this knowledge with other clients.

Concluding, the feedback session allows IB to leverage their unique strength experience and knowledge of corporate innovation. The following paragraph will describe how this feedback session is performed.

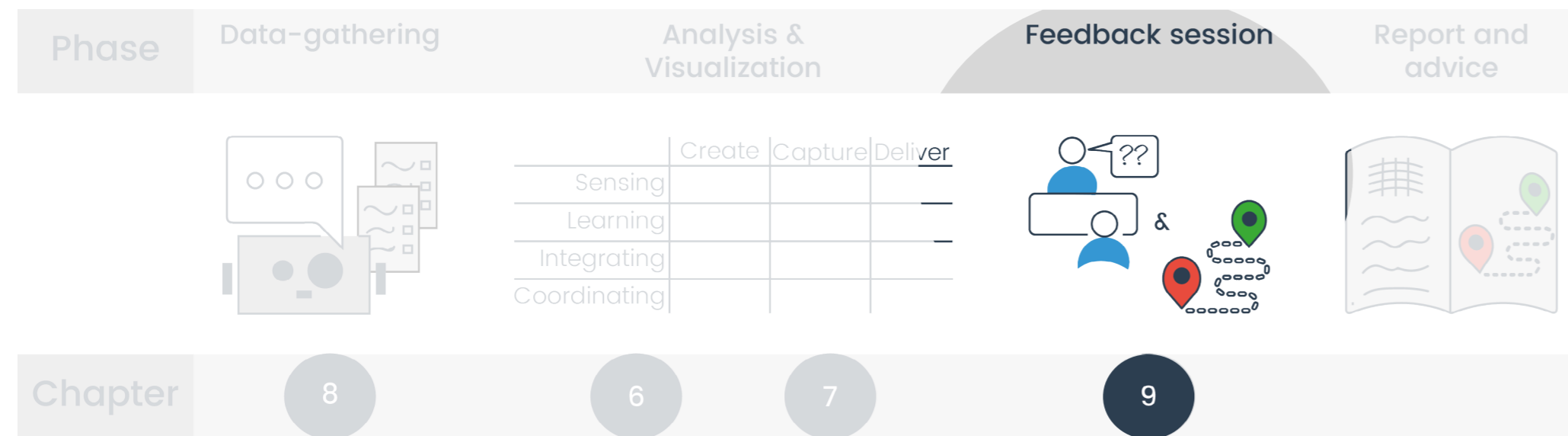


Figure 9.1: This chapter is about the feedback session in the ICA

The session

The qualitative session has three 'scene's'. The entire process has been illustrated in figure 9.2. The next page shows a more elaborate explanation of each phase in the sidebar.

Scene 1

Target

Find out which capabilities are perceived as high and low by the employees.

Steps

1. Analyse the data from the chatbot.
2. Present the results to client.
3. Discuss why certain capabilities score exceptionally low and which capabilities are looked at differently by the various corporate levels .

Scene 2

Target

Determine a roadmap regarding which capabilities to improve.

Steps

1. Determine time-frame for roadmap.
2. Allow a limited number of capacities to be improved within that time-frame.

Scene 3

Target

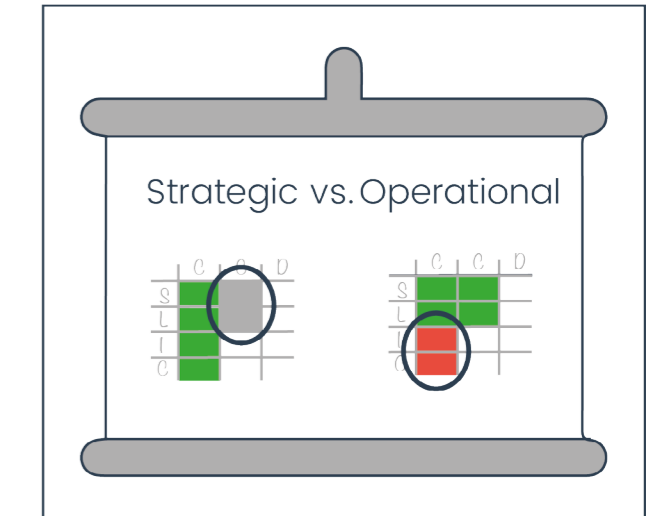
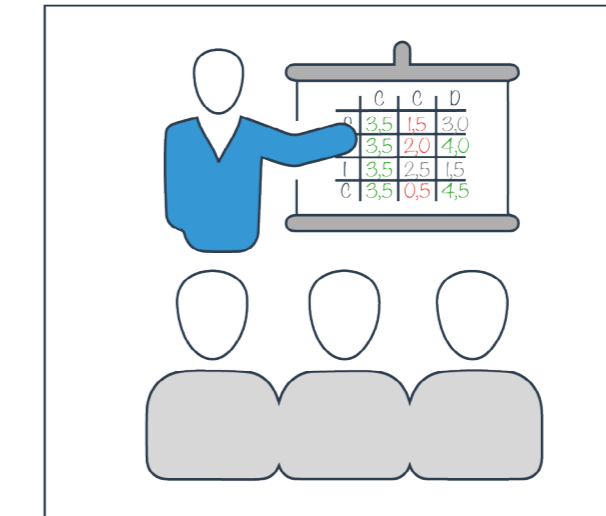
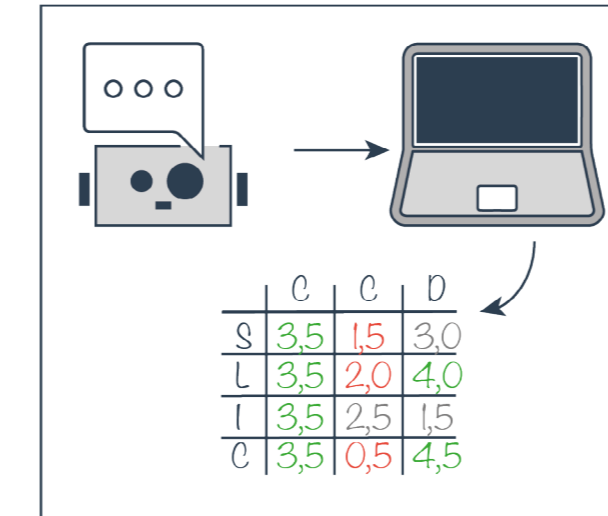
Determine hypotheses regarding current hurdles to improve Innovation Capabilities.

Steps

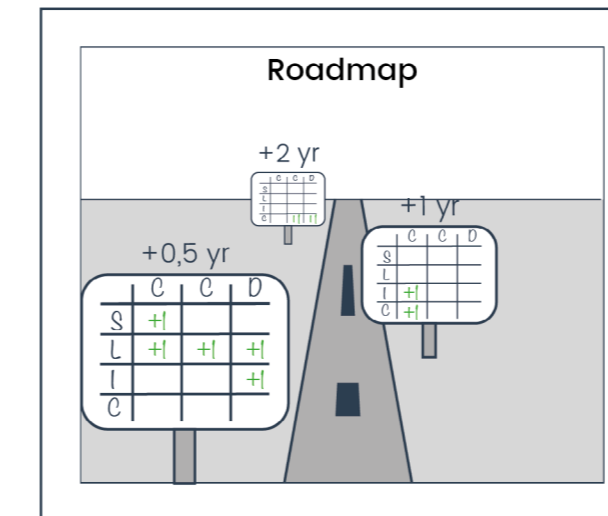
1. Ask questions regarding capabilities that the client wants to improve, especially aimed at exploring the current situation.
2. Probe for problems on both personal and interaction micro-foundations.

At the end of the third scene, the client will have a clear vision on the different stakeholder's views on the innovation program, will have set a strategy regarding which capabilities they want to improve and have identified possible bottlenecks that might be key to overcoming these challenges. These challenges (formulated as hypotheses) can then be solved using an iterative method. This method is elaborated upon in the report that is provided at the end of the ICA. This report includes the before-mentioned elements and an advice on how to overcome these challenges (perhaps with the help of IB).

Scene 1



Scene 2



Scene 3

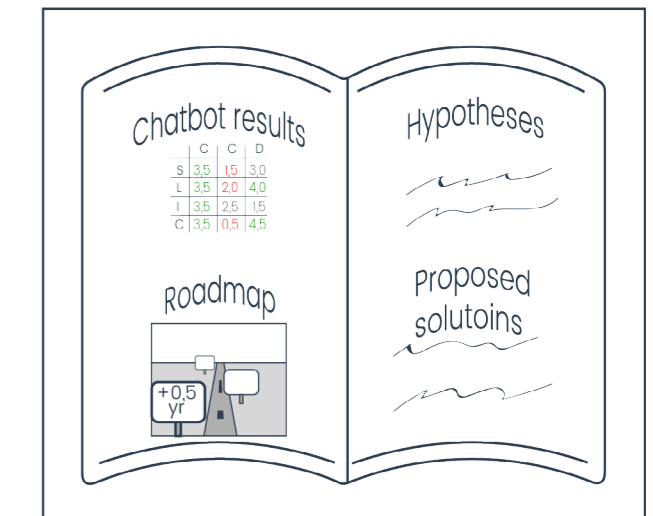
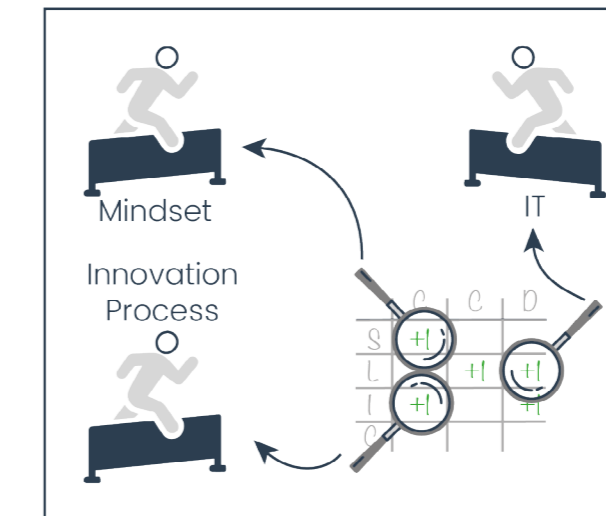


Figure 9.2: The script of the qualitative feedback session

Scene 1

The target of this first scene is to find out which capabilities are perceived as high and low by the employees. The input for this scene is the analysed data from the chatbot. This data will be indicated as an average score per capability. Special attention will be paid to capabilities that score low and differences in opinion between hierarchy levels.

Consequently, any points of attention will be discussed and any clarification that is needed can be given (e.g. specific questions can be analysed). During this interview, the assumption is that Dynamic Capabilities are like a chain, if one link is broken, it doesn't function. The result is that if there is a complete horizontal line that scores low, special attention needs to be paid. In other words, any company will need to sense to some sufficient level, if the entire capability of 'sensing' is absent, this will need special attention. However, horizontally, the current assumption is that it's more a game of specialization. As some of the respondents indicated, it might depend on the industry whether they need to focus for example on value capture or value delivery.

Scene 2

In this scene, a roadmap will be determined regarding what capabilities a company wants to improve. Which capabilities a company aims to improve might differ greatly per company. For example, MediCo indicated that they especially needed to improve their coordination capabilities, preferably regarding value creation and capture. On the other hand, CareCo indicated that they were having trouble with 'value capture'.

During this second scene, the client will be asked to indicate which capabilities they want to improve. The experiments showed that during this 'roadmapping', two elements are important. First, a set time-frame must be offered to clients. For example: Where do you want to be in one year? Or two years? Second, the clients' needs to be forced to make choices. This can be done by limiting the number of 'points' that a client may aim to improve during a certain period. For example, when the capabilities are indicated on a scale from 1 to 5, the client was only to 'add' a maximum of 5 points and divide these over the 12 capabilities.

Scene 3

In the last scene, hypotheses will be made regarding the causes of lower than desired capabilities. This is the scene where the knowledge of EB's is most useful. During this scene, questions will be asked regarding the capabilities that the client wants to improve to explore the current situation. As mentioned before, because there are many different micro-foundations, questions can be asked on both the personal and interaction level. This means that not only the innovation process needs to be explored, but also the design of the organization and the culture, mindset or vision of the organization. For example, imagine that a company has trouble with the create-sense capability. This can be due to many different elements, for example:

- The mindset of the employees isn't customer centric.
- There is no system to feedback information from customers.
- The company's vision and corporate design is that innovation can only come from the R&D department.

Conclusion

There are two reasons for adding a qualitative feedback session to the ICA. First, companies and transformations are too complicated and multi-faceted to accurately pinpoint problems using a survey. Especially because the problem can be at a personal or at a higher interaction level. Also, the qualitative session is a great way to add (perceived) value to the ICA because during this session the knowledge and experience IB (more specifically EB's) can be leveraged.

The qualitative feedback session focusses on realizing three goals, which result in three 'scenes' within the session. Determining what capabilities are currently lacking, determining which capabilities to boost and what problems need to be solved to improve those capabilities. In the first scene, the results of the data-analysis are presented. In the second scene, IM's are asked to indicate which capabilities they would like to focus on improving in a certain time-frame. In the third and closing scene, hypotheses are drawn regarding what micro-foundations could be boosted to increase the innovative capabilities of the client.

The ICA as stand-alone sales tool

As has been noted by many Boosters, the ICA might also work as a stand-alone offer to be sold to new clients. In fact, IB has already performed an 'innovation scan' twice. These assessments are a final push for companies to realize the urgency of contracting an expert to boost their innovation program.

However, in this project, the ICA is developed in such a way that it focusses on current IM's. One of the reasons to do this is that by designing for current clients, a partner could be found easily to co-create the ICA. At the end of this project, PostCo adopted the role of co-creation partner. This included that they tried out many MVP's for the assessment, accepted a buggy first product, invested time and energy in giving elaborate feedback and actively looked for improvements.

If the ICA were to be used as stand-alone sales tool, research would be needed to determine if some elements would need to be altered. For example, the qualitative feedback session would need to be different as no Boosters will have experienced the company yet.

Implications

In order for the session to be successful, both the EB and the Booster that has been present inside the company need to be present at the qualitative session. The reason for this is that certain steps (for example indicating challenges) lean heavily on the experience of these Boosters.

Also, the data needs to be analysed thoroughly before-hand. This way, elements such as a spread in opinion divided over different levels of the company can be indicated. As mentioned in chapter 6, the information on spread in opinion regarding the innovation program can be interesting for the IM for political purposes.

Last, for this session to be as efficient as possible it might be valuable to stimulate the IM during the third scene to think holistically about their innovation program. This could improve the quality of the hypotheses that are made. This could be done by asking for example for the different building blocks of an innovation program (system, process, mindset, culture, vision).



Execute

This final part will have two future-oriented chapters. In the first chapter, a concept will be presented for a follow-up proposition to the ICA. As mentioned in the first chapter, companies need an Innovation Strategy before progress can be measured. Now that we've developed a tool to make this strategy, the Expert Connect Update is a first concept for a service in which transformation is measured. In the second chapter, a future vision for IB will be presented. Although this was not part of the initial assignment, observations and conversations with Boosters have led to a vision on how IB can develop. It is proposed that to sustain a competitive advantage, IB will need to become a leader in knowledge-driven Innovation Strategy.

10. Expert Connect Update

Now that we have a proposition to create an Innovation Strategy with the client, we can develop a follow-up proposition which focusses on the initial challenge as posed by IB.

Research actions:

- Sprint 5,6 & 7
- Prototype test with EB's
- Literature on 'Performance Indicators'

Following up on making a strategy

The initial research challenge was: how to measure transformation. While trying to solve this challenge, a more urgent challenge was identified. Clients needed help defining an Innovation Strategy first. The ICA was developed to solve this challenge. The result is that now, IB can focus on tracking progress towards the goals that are set in that strategy.

Unfortunately, progress cannot be measured simply by repeating the chatbot and tracking changes in the scores. There are two reasons why the chatbot isn't suitable as a method of measuring progress towards the goals set in the strategy.

First, the chatbot only produces an insight on how employees of a company view the innovation program. It is a subjective measure. Therefore, many factors could influence the result of the chatbot (performing the ICA might already have an influence on the following outcome). Indeed, many of the clients (BankCo, WaterCo, PensionCo) during the experiments therefore requested that objective indicators were used to check progress.

Second, this research has not reached the point where it has been confirmed that the questions that the bot

asks actually refer to the Innovation Capabilities. Consequently, if the questions do not actually represent the capabilities, then progression on these capabilities might not show in a new survey.

To sum this up, repeating the chatbot might be useful to find out whether the employees' view on Innovation Capabilities have improved. However, to measure real progress on these capabilities, another proposition was designed.

Expert Connect Update

With this in mind, a follow-up proposition to the ICA is proposed. This proposition is named the Expert Connect Update (EC-update). Figure 10.1 illustrates the core elements of the EC-update.

The EC-update is a service that can only be offered to clients that have already performed the ICA. The EC-update can be seen as a form of account management where IB helps clients to find out whether they are making progress with their innovation program. It is the 'maintenance' service that comes with the product (ICA & IB-projects).

The EC-update is a semi-annually check-in to see how a company is doing and to help with the innovation program. During this check-in, certain indicators that are relevant to the (innovation) strategy of the client will be considered. For example, if a company has decided to work on their integration capabilities, it makes no sense to measure indicators such as the R&D budget or the number of experiments performed.

Indicator setting workshop

A special 'indicator setting' workshop precedes the semi-annually check-up. In this workshop, IB helps the IM to choose the indicators that he feels are relevant. This entails that IB will need a 'toolbox' of different indicators that can be offered depending on what the Innovation Strategy of the client is. This toolbox may include (in order of difficulty to measure) input, output and outcome indicators. Figure 10.2 represents an overview of the main differences between these categories and more information on indicators can be found in the sidebar on the next page.

A distinction between these categories can be useful to pinpoint which challenges an Innovation Manager is trying to overcome to improve specific Innovation Capabilities. For example, if a company invests more money in an innovation program (input), but the number of experiments doesn't go up (output) or the amount of revenue generated from new projects isn't increasing (outcome), then a systematic inquiry can be started to find out where the bottle-neck is situated.

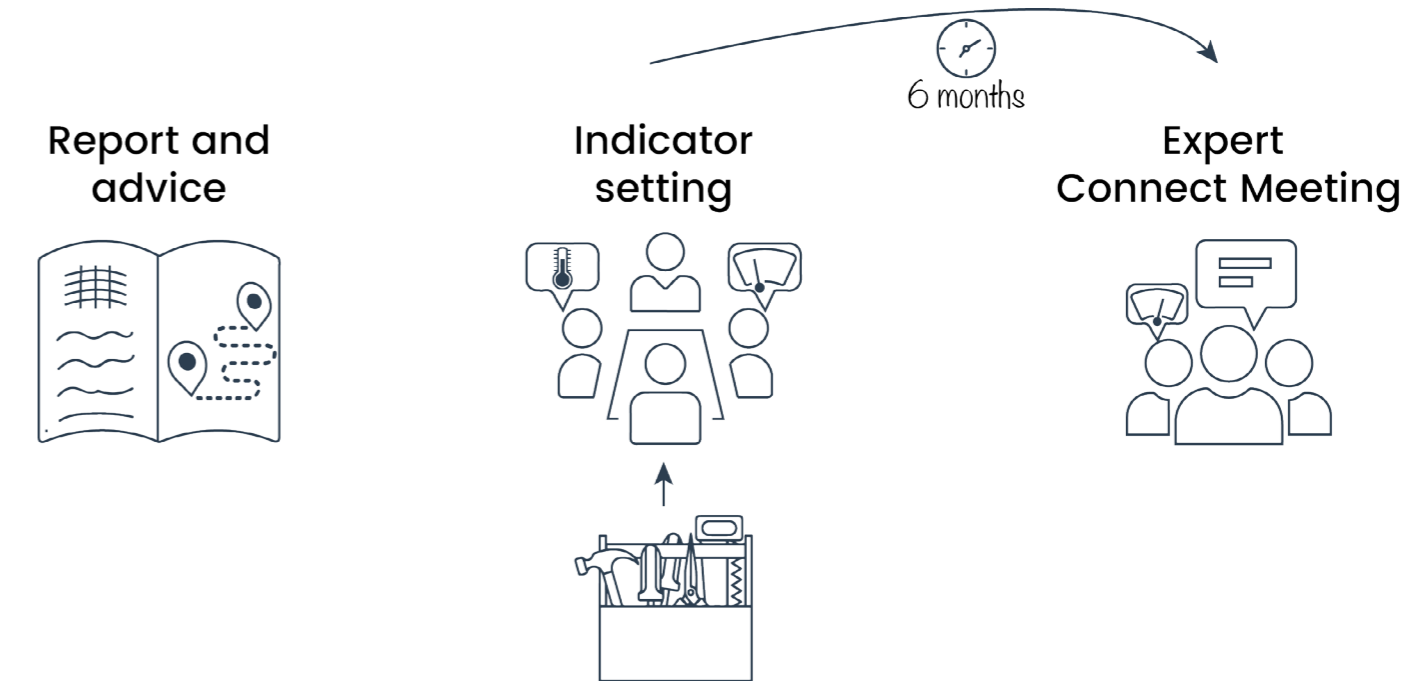


Figure 10.1: Prototype of the Expert Update Connect Service

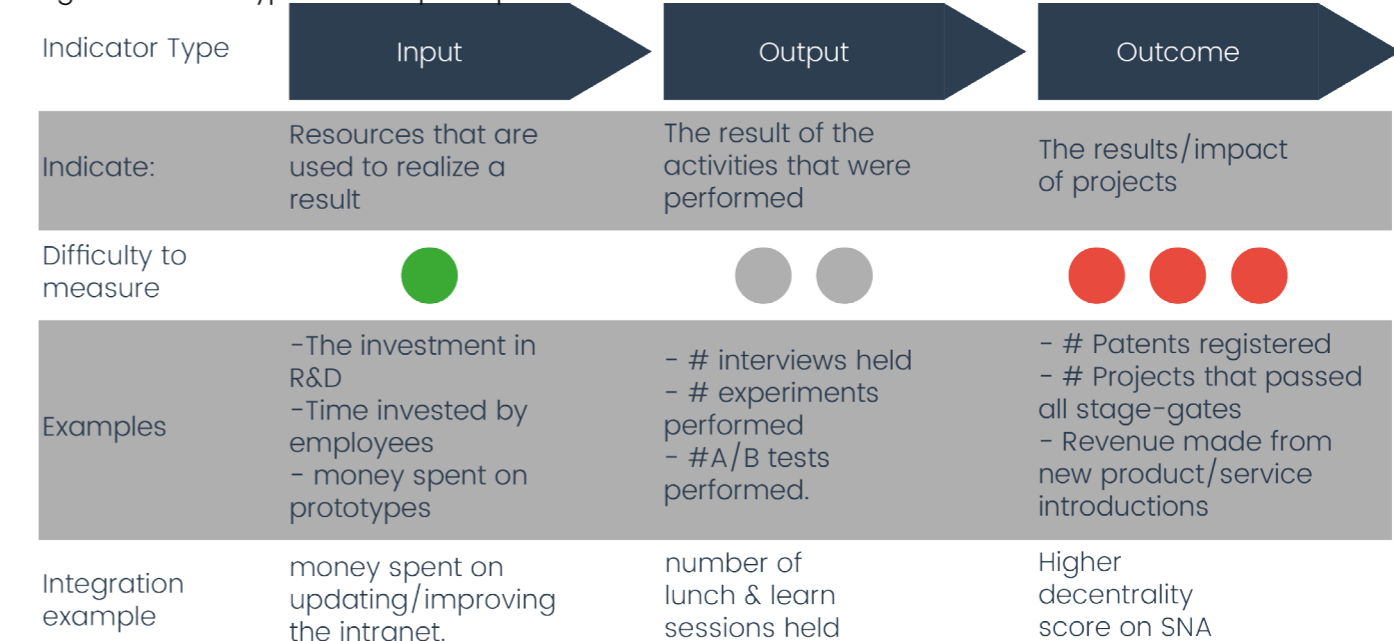


Figure 10.2: Difference in performance indicators

Different Performance Indicators

Input indicators describe the (tangible and intangible) resources that are used to realize a result. Examples of input indicators would be the investment that is done in R&D, time invested by employees, money spent on prototypes, etc. Specifically, for integration input indicators would be for example: money spent on updating/improving the Intranet.

Output indicators focus on measuring the result of the activities that were performed. This would include indicators such as number of interviews held (if doing interviews is the activity), number of experiments performed or the number of A/B tests performed. For integration an activity indicator could be the number of lunch & learn sessions held (sessions where business units inform other business units of their activities or findings).

Last, outcome indicators refer to the results/impact of projects. Indicators that would describe this are for instance: number of patents registered, number of projects killed versus number of projects passed, amount of revenue made from new product/service introductions.

Check-up

As mentioned, once the indicators have been determined and a baseline has been measured, an EB can return every half year to check the indicators and offer advice on how to improve the program. Again, the experience and knowledge of IB is used as a unique strength. For example, EB's can offer knowledge on how indicators developed at other companies.

Business Proposal

From the perspective of IB, this proposition is valuable business wise. The EC-update offers IB a possibility to return to their clients every half year. This meeting will offer an opportunity for sales. Especially if clients are not currently running a project with IB. Imagine a client has set-up a program with IB, but consequently decided to run and further improve the program themselves (as PensionCo has done). After six months, the EB returns and finds a disappointing increase in indicators. This would be an ideal situation for the EB to explore what challenges the client is facing and offer IB's help in overcoming them.

What needs to be noted, is that this proposition has only been offered in the form of a prototype to clients. Although the primary reactions were positive, more research is needed to determine the exact form of this proposition. For example, we don't know what type of indicators companies are looking for.

Conclusion

After helping clients with their Innovation Strategy, a follow-up service can be offered. In this service, objective case-dependent measures can be determined to measure progress on the capabilities that the client wants to improve. These measures can come in the form of input, output or outcome indicators. In a half yearly meeting, these indicators can be discussed with an EB who can then help pinpoint problems and offer solutions to improve the program (e.g. start a new project with IB to increase a certain capability). This way, the EB can leverage his/her knowledge and experience in corporate innovation programs even more to help clients.



Figure 10.3: The Doblin Card game, a more interesting way to interact with the customer and engage them in a process

Implication and onwards

Creating an Innovation Strategy is only the first step if IB wants to increase their sales on transformation and improve their methodology. Although indicators will need to be case-specific, the EC-update will generate insight into what effect IB has on a client.

If IB wants to offer the EC-update, then they will need to focus on developing different indicators throughout the following years. These can be co-created with clients, developed internally or in cooperation with universities or start-ups. In any case, having a large toolbox of these 'indicators' will increase the perceived value of IB as it adds to IB's unique knowledge and experience in many corporate innovations projects. Also, building this toolbox will contribute to the vision as presented in chapter 11.

Last, this concept needs to be developed further. For example, the exact form of the indicator-setting workshop still needs to be determined. This workshop could be performed in a simple way, where the Boosters lay out the possible indicators and let the client choose. However, it could also be done in the form of a card-game for example (see figure 10.3). This might motivate clients more to develop new indicators, which could be added to the toolbox of IB.

11. Proposed Strategy

After half a year of interviews with IB's Founders, Boosters and clients, a future vision formed: IB needs to focus on harnessing their strength and become a knowledge-driven expert

One could graduate on deriving a new corporate strategy for IB. That is absolutely not the aim of this report or chapter. However, during my internship at IB, I've gathered insights from clients, spoken to Boosters (i.a. about competition) and joined numerous tactical and strategic meetings of IB (these are held with the entire company). This has resulted in a personal vision on IB. I will describe and explain this vision in this chapter, because I believe these insights and this vision might be valuable to IB. In order to avoid a lengthy narrative and an overkill of detail (which I assume you have by now gotten used to from this report), the information will be presented as short and possible and is summarized in figure 11.1.

Insights

Four major insights triggered this new vision:

1. Competition is increasing (as mentioned in chapter 9)
2. IB has three strengths, of which knowledge through experience is the most sustainable (also from chapter 9)
3. Transformation is becoming increasingly important for clients (see appendix 2) and for IB. As more clients gradually complete their first projects and start larger (more transformational focused) projects, IB needs to have the knowledge to facilitate these projects.
4. IB has extensive knowledge of corporate venturing, corporate politics, innovation methodology, corporate strategy and (design) tools, etc. However, this knowledge is for a large part tacit or implicit and is stored at an individual level rather than a corporate level. In other words, the integration capability of IB is relatively low. Also, knowledge of (cutting-edge) technology is not abundantly present at IB. In other words the sensing capability of IB leaves room for improvement.

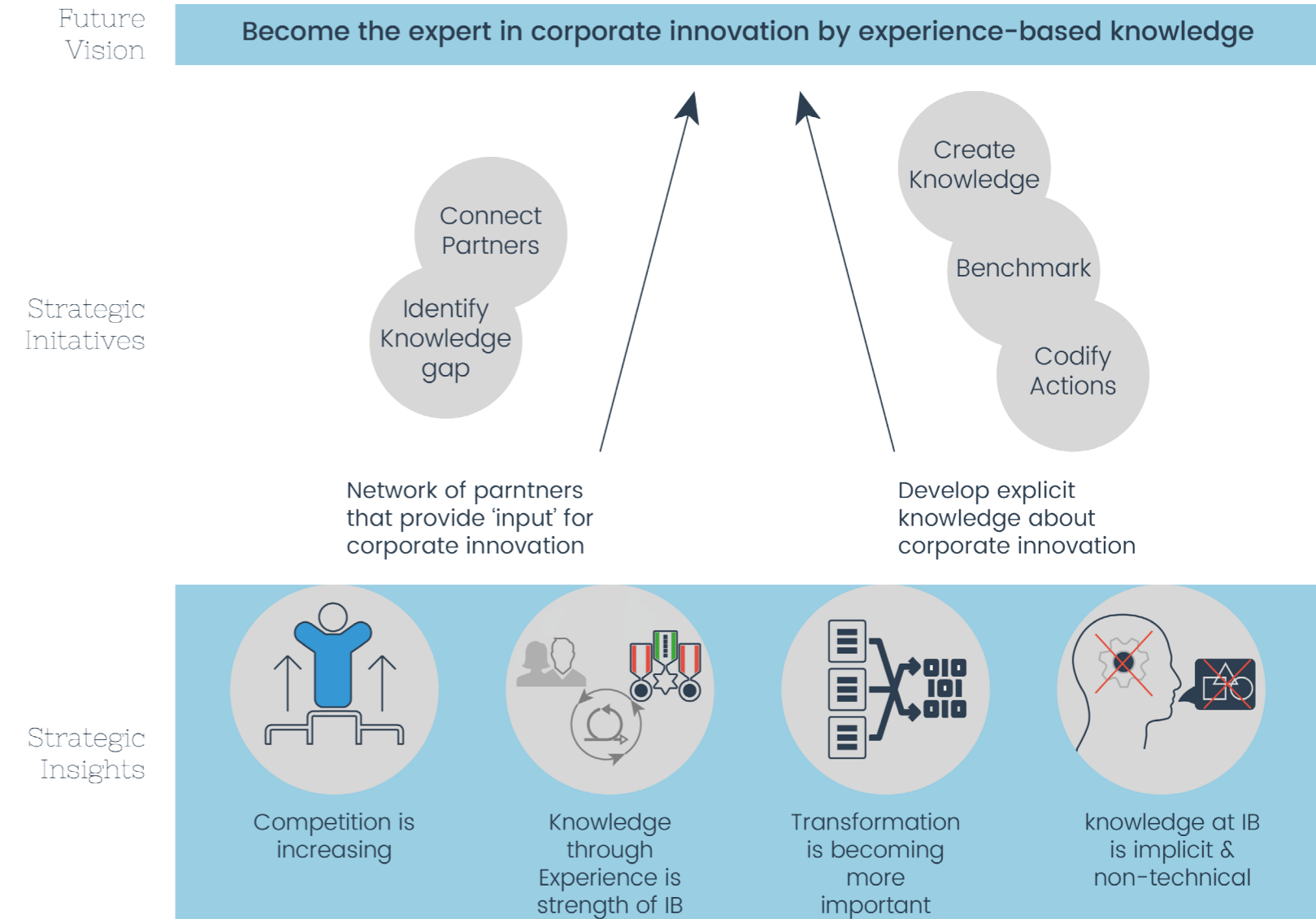


Figure 11.1: A future strategy for IB

Proposed Strategy

As a reaction to these insights IB should focus on becoming:

“The expert in corporate innovation by experience-based knowledge”

IB is well positioned to take this strategy as they already have knowledge present. By taking this strategy IB positions itself in the middle of a web of companies that aim to help corporates become more innovative. They will be the expert on corporate innovation methodology, structure, etc. Whenever a manager considers giving their innovation a boost, they should contact IB first. Proposed strategic initiatives

In order to make this vision a reality, IB can kickstart two strategic initiatives.

The first initiative is aimed at developing explicit knowledge about corporate innovation and improving the integration capability. In order to do this, IB could consider:

- Codifying knowledge, actions and results with the aim of creating knowledge by analysing this codified data regarding corporate innovation, corporate venturing, teamwork, design sprints, etc.
- Setting-up research sprints to articulate and test assumptions regarding the methodology
- Do benchmarks between projects in different companies/ industries to start understanding the differences and similarities in these projects.

The second initiative focusses on improving the sensing capability of IB, especially with regard to new technologies. It is valuable for IB to at least know about new technologies so that they can use this knowledge in their client's projects. This

might increase IB's impact on projects and thereby increases the perceived value of IB in projects. In order to increase this capability IB can build a network of partners that provide 'input'. These partners could be start-ups that are working on new technology, universities or the research labs of their current clients.

Starting Tomorrow

The initiatives described above are interesting for the medium-term. However, what can IB do tomorrow? Well, first they have already taken their first towards codifying knowledge and actions by developing the ICA and the EC-update. The results of the ICA can be benchmarked, the indicators that will be developed can be valuable knowledge and the behaviour of the objective indicators that are determined in the EC-update will also be of value.

Regarding the development of a network of technological partners, IB can start right away with contacting partners to fill their Friday lunch & learn sessions for example.



12. Conclusion

What have we learned from the past chapters and have we answered the initial challenge?

This chapter sums up the main conclusions from each chapter. Besides recounting the major insights, a short argumentation for these statements will be provided. Finally, we will reflect shortly upon whether this research has contributed to the problem as defined in the introduction.

1. Innovation Booster needs to measure their transformational effect

IB has grown from a firm that helps companies develop new business, to a partner that helps companies transform to be more innovative. This new proposition is more challenging to sell and provides less concrete results. The absence of these results make it difficult to improve the transformation methodology/approach. This insight led to the challenge of this graduation report: How to measure the transformational effect of IB on clients?

2. Transformations aim to ensure a fit with the future market and are unique to a company

Transformation is the conscious change that a company makes to its products and processes, as a reaction to a turbulent environment to maintain a fit with the market. A fit can be realized by realizing three pillars: (1) creating a flexible organization that is (2) customer-oriented. Also (3) a structural investment in different types of innovation is needed. A more important finding is that these pillars have a different meaning depending on the company and the

industry.

3. Measuring transformation can only be done relative to their own strategy

Because transformation is not a universal and comparable phenomenon, it is impossible to create an 'absolute' indicator for transformation. Nevertheless, measuring the relative improvement on transformation of a company is possible. To do this, a baseline (point A) needs to be determined. Then, a strategy (i.e. a desired point B) regarding transformation needs to be made. Conclusions regarding transformation can then be drawn by tracking whether a company is changing towards B.

Act 1: Explore

4. IB's clients do not have an Innovation Strategy to measure progress towards

This research indicated that clients of IB rarely have an Innovation Strategy (or, a point B). The reason for this is that innovation managers (IM's) don't have the time and knowledge needed to make an Innovation Strategy. That's a shame because it would help them communicate internally, and evaluate their innovation programme. In other words, it would aid IM's with developing their innovation programme. Also, if IM's don't have a strategy, measurement is impossible. The design goal of this research therefore became: "Design a process for IB to help IM's determine their current state of Innovation Capabilities and develop an Innovation Strategy."

5. The Innovation Capability Assessment (ICA) can be offered to help current clients make an Innovation Strategy

The ICA provides clients with insight in their current Innovation Capabilities. Additionally, it exposes which capabilities a client lacks and which it wants to improve. It consists of 4 phases. First, quantitative data is gathered from employees through use of a chatbot. This data is then converted and visualized in the '12 Innovation Capabilities' grid. Then, a qualitative feedback session takes place. Finally, IB creates an advice how a company can realise this strategy.

6. An Innovation Strategy describes how a company innovates on creating-, capturing- and delivering value

Firms need to innovate not only on the products/services that they deliver and the needs that they satisfy, but also on the systems and processes that companies use to deliver these services and the business model as a whole.

7. To be able to innovate on these three elements, dynamic capabilities have to be built

The three strategic elements above consider operational capabilities. However, in order to maintain (and not simply regain) a fit with the market, firms needs to continuously develop on these aspects. Dynamic capabilities are the routines that change those operational capabilities. Having

dynamic capabilities means being able to change the way of working and way of thinking of an organization. To measure a company's transformation thus means: measure its dynamic capabilities. Dynamic capabilities can be categorized in 4 activities: sensing, learning, integrating and coordinating.

8. A chatbot is an effective way to gather input from employees on Innovation Capabilities

To help the IM with internal politics and to gain a more 'objective' input for the qualitative session, views of employees are gathered. This information is not gathered using a survey, because the questions are too difficult. Also, specific questions need to be asked to specific employees and the experience of consecutively answering more than 30 likert-scale questions is rather unpleasant. Instead, a chatbot was designed to provide a pleasant experience and motivate employees to provide input.

Act 2: Experiment

9. A qualitative feedback session adds depth to the data and offers an opportunity for strategy making

Due to the variety in transformations IB should organize a session with the IM to discuss the specific case of the client. This session focusses on realizing three goals. Determining what capabilities are currently lacking (through analysing the chatbot results), determining which capabilities to boost and what problems need to be solved to improve those capabilities.

10. Once clients have set an Innovation Strategy, a service can be offered to track progress, i.e. measure transformation

After helping clients with their Innovation Strategy, a follow-up service can be offered. This service is the 'Expert Connect Update' or EC-update. The goal of this service is to determine objective case-dependent measures to measure the development of the capabilities that the client wants to improve. In a semi-annual meeting, these indicators can be discussed with an Expert Booster who can then help pinpoint problems and offer solutions to improve the program. This way, IB can leverage its knowledge and

**Act 3:
Execute**

experience in corporate innovation programs to help clients.
11. The proposed propositions are first steps towards becoming an expert on corporate innovation based on knowledge

During this project, the author of this report has come to the realization that IB has (at least) one unique selling point: their knowledge and experience of corporate innovation programmes. However, currently there is no strategy in place to leverage this. Thus, a new strategy is proposed: "Make IB the expert in corporate innovation by experience-based knowledge"

In order to make this vision a reality, IB should (1) develop explicit knowledge about corporate innovation (i.a. through the ICA and the EC-update) and (2) improve their sensing capability with regard to new technologies by building a network of partners.

Overall Conclusion

This report opened with a vote of confidence in favour of large enterprises, stating that its worth it to keep these companies alive. In order to do this, these companies need to transform and become more innovative. Innovation Booster is on a mission to help these megaliths transform to more consumer-oriented, flexible and innovative entities.

With the ICA, a small step has been made that might contribute to this mission. By performing this assessment, Innovation Managers can set innovation strategies and with the EC-update, IM's are able to track the development of their innovation program. These two services combined can help firms to manage their program much more effectively and speed up (and defend) their transformation efforts.

The result is that firms will be able to create-, capture and deliver value in such a way that they maintain a fit with an ever changing economic landscapes. For example, by actively sensing new technologies, companies might avoid getting disrupted by start-ups. By learning about the changing needs of their customers, they can develop propositions that match consumer trends. And by sharing information and knowledge throughout the company, departments can work together to escape the death-spiral that a silo-culture initiates.

Obviously, there are many more factors at play here. Management teams need vision, the right culture needs to be present and people need to step-up and initiate change without being afraid of the political minefield that is present in the average corporate.

Nonetheless, I believe that by providing enterprises with the right tools and information, Innovation Booster can offer large, traditional enterprises a fighting chance to survive.



13. Discussion & future research

Both the tools and the Innovation Capabilities framework that have been developed during this research are initial steps. Here are suggestions on how to improve both.

Further development of the ICA

Chapters 10 and 11 provide an insight into possible future actions for IB in general. Based on the result of this research and its experiments, there are two interesting paths of development for the ICA:

1. Improve the quality of the assessment bot
2. Determine what the most valuable use-case of the tool is - for IB and the client.

Improving the chatbot

The initial results regarding the chatbot experience were positive. However, the usability of the chatbot can be improved significantly. Additionally, extra feedback sessions and checking the validity of the chatbot might be interesting.

When respondents were asked to reflect on their chatbot session, they indicated that it was fun. Also, it triggered interest and curiosity regarding the outcome and it offers a pleasant experience (see also the sidebar).

However, numerous improvements to the bot were suggested by the participants of experiment 7. The chatbot questions were sometimes too complicated or theoretical and the tone of voice of the text can be improved. Solutions to these faults ranged from changing wordings of sentences to using illustrations and adding functionality. A list of these practical improvements will be provided to IB in a separate document.

Interestingly, when respondents were asked to comment on why they provided certain answers the argumentation that they provided led to valuable insights. To recreate this in the ICA, IB could perform a number of 'sense-making' sessions with stakeholders before the qualitative feedback session. In these sessions, key stakeholders can provide reasoning for their scores. This could be added to the quantitative input of the qualitative session.

Lastly, as IB uses the chatbot, it would be wise to test the validity. For example, to test whether the answers accurately reflect the capabilities of a company, one could compare the results of the chatbot with results of other surveys that aim to (or have been proven to) measure Dynamic Capabilities. It would also be interesting to repeat the chatbot process after a number of projects at a company. If the results of the tool improve after having focussed on developing Innovation Capabilities during projects, this might be an indication of the validity of the tool.

Use-cases for the ICA

Throughout this project, a number of possible use-cases of the ICA have been mentioned. These were mentioned by both clients and Boosters. For example, it could also be used as a sales-tool for IB for new clients or as a tool to explore the political landscape regarding innovation of a company. For each case,

the ICA may need to be tweaked (I.E. for political purposes the spread of opinions might be more interesting than the average of the grades). Figuring out which of the cases is the most useful and how the ICA needs to be altered for these cases could also be a valuable path of improvement.

Improvements to the qualitative feedback session

During the beginning of this research, the 'qualitative feedback session' was tested multiple times. However, these sessions did not include the input of the chatbot data (the '12 capabilities grid' was filled in by the IM) and were therefore not representative.

During experiment 7, chatbot data was generated for the first time. Unfortunately, because this test was set-up as an 'Alpha test' to improve the chatbot script and test the methodology in general, not enough data was generated to reflect on the produced grids with the IM. PostCo did indicate that they want to do a follow-up test with a higher number of respondents. IB will need to be vigilant during the feedback session in this test to improve this session as well.

Initial Reactions to the chatbot

In experiment 7, six employees of PostCo used the chatbot and were asked to comment on it. Four of those people were managers on the strategic level and the two others operated on the tactical and operational level.

During this session, they were asked to motivate their answers to check whether the questions were producing the right kind of answers. Their answers indeed reflected the Innovation Capabilities that were being tested.

In general, the reactions to the bot were positive. Participants liked interacting with the chatbot and mentioned: "It's fun and cool to provide input like this...way better than on paper". Also, the theoretical information provided during the session was perceived as useful and made people interested in the results of the study (which was also proven by the fact that all of the respondents indicated that they'd like to receive the results of the study).

However, people also thought the text was sometimes complicated and theoretical ("I still don't quite get this value-model concept"). Additionally, some respondents mentioned that the tone of voice could be more conversational. For example, one of the respondents mentioned: "It sounds too much like a survey sometimes. Especially with the long sentences that don't read very well on a chatbot screen".

Further research

The framework and the chatbot that were developed during this research provide interesting possibilities for more theoretical research. First, it is currently unknown what the effect is of using a chatbot to gather data. Second, it would be interesting to analyse the data that is produced from the assessment to determine micro-foundations and innovation capability typologies.

Research on the effect of chatbot data-gathering

Using a chatbot to gather data is new. Nevertheless, alternatives to surveys are growing in popularity (especially in the realm of design research). A chatbot might prove to be a valuable new method to gather scientific data. Research into the effect of using a chatbot on results and on the way that it can be used as (scientific) data gathering tool would be interesting.

Research on the 12 Innovation Capabilities

Follow-up research on the framework that was created during this research might turn out to be even more interesting. This framework is a way of operationalising Dynamic Capabilities, which has been pointed out to be one of the challenging elements of this theory. Therefore, two interesting follow-up researches are possible.

First, it will be interesting to see which 'hurdles' IM's mention during the qualitative feedback session. One could imagine that these hurdles describe absent micro-foundations. Gathering and analysing the hurdles that are mentioned frequently and comparing them with the capabilities that they are linked to might create a holistic framework of micro-foundations that underlie innovation- and/or dynamic capabilities.

A second interesting research would be to determine whether typologies can be recognized in the results of the chatbot. For example, after analysing the answers of many different respondents across different companies, certain 'profiles' may become apparent. Perhaps companies typically have problems with only one of the Innovation Strategy elements (the columns) or with one of the Dynamic capability elements (the rows). The definition of these typologies might help IB and IM's to determine best practices of solving innovation problems within certain typologies.



14. Reflection

Looking back, what went well and what didn't? Special attention is paid to the Lean approach that was taken and how this was experienced.

My process

In this chapter I will reflect my process on three different aspects, namely: the **process** that I've followed, the **product** that I delivered at the end of this project and the way that I interacted with **people**.

Process

Overall the graduation process went surprisingly a smooth. Yet at some moments I could have invested more in structure.

There are two reasons why the process was experienced as positive:

1. I had never worked in a sprint structure before, but during the process I evaluated and learned to pick-up speed. This was exciting and motivating.
2. Also, the sprint structure helped me work effectively. This resulted from having a clear goal for each sprint (thanks to hypotheses driven research and the experiment boards). Because of this effective approach, I was able to do many tests, learn quickly and finish the project neatly within time without stress (which is unusual in my case)
3. Last, because value was delivered quickly, I was able to choose when to stop. I chose when to stop sprinting and already had a decent product at this point. This prevented me from trying to do too much in too little time.

On the other hand, the unpredictable nature of this approach led me to lose oversight at moments. At times I would've benefited from a more detailed planning. This was especially apparent after the literature study and the interviews with Boosters. At this point, I needed a nudge from the team to start working on the framework and start talking with clients.

Secondly, I didn't invest enough time during the process to evaluate what I was doing and write this down. This resulted in a considerable investment at the end of the process to reconstruct the process (although this was made easier with the dashboards).

Last, the process was disturbed at some moment due to being dependent on others. Making appointments with external stakeholders is troublesome. This sometimes resulted in forming my experiments around meetings instead of the other way around. This led to doing too little experiments in one sprint and doing too many in another.

Product

The ICA and EC-update are valuable to IB and add knowledge to the literature. A minor point of comment is that this research didn't produce many explicit user insights.

The ICA is valuable because it answers already partly to a need of IB and definitely to the need of customers (as multiple clients have already shown interest in buying the ICA). In the near future, the EC-update will hopefully be part of the answer to IB's initial question. Furthermore, combining existing theories to create the new 'Innovation Capabilities' theory provides a new insight from an academic point of view.

A point of critique for this project is that not many explicit user insights were gathered through specific user research. This was foreseen, as I learned about my users during the experiments. However, these learnings weren't gathered and presented in such a structured way as in most graduation reports. This also makes the results harder to reproduce. In the future, for reporting purposes, it might be sensible to log the user insights as they are gathered.

Also, at some point during the project I was so busy doing sprints that I forgot about the user and what they needed. I realised that I'd basically skipped a big part of design: understanding the user and what he wants, thinks, feels, needs, etc. I filled this in by doing a short research at that moment, but it would've been better to do this at the beginning (as is also underlined in the comments on lean graduation and figure 14.1).

People

This is the most positively evaluated element, especially because of the weekly dashboard (meetings) and the flexibility of both IB members and the graduation team. On the other hand, having weekly meetings is a demanding goal.

By means of the weekly dashboard (meetings) the team was always up-to-date on my progress. On top of these meetings, monthly updates were performed. These were filled with a short presentation followed by enough time to reflect and gather input. These meetings were useful and pleasant. Last, I can count myself lucky that I had IB as a graduation company. Especially internally it was never difficult to make an appointment with employees, which made internal communication easy. Also, I held 3 presentations to present what I was doing, which resulted in a lot of feedback.

The major drawback of having weekly meetings is that they were difficult to plan sometimes and the entire team needed to be flexible to accommodate these meetings. Communication about- and the amount of meetings was intense at times. Perhaps a bi-weekly meeting at a set time would be better. On the other hand, by meeting weekly, the team had the opportunity to miss a meeting every once in a while.

The Lean approach

This project introduced a new approach to doing an IDE graduation project. I would say this experiment was moderately successful, but that the approach can be approved and won't fit every company.

Why it is a success

- Being able to pivot after finding the true question that needed to be answered led to the delivery of a valuable result for IB and avoided an investment in an unsuitable result.
- Input from the experiments led to a product that has already proven to answer to the needs of clients (seeing as its being sold right now)
- Value was delivered quickly. The earlier experiments with clients with the framework already led to insights for both IB (insights into needs and evaluation of clients) and clients (mirrored their own implicit opinions)

What needs to be improved

- In the beginning, the explore phase needs to be more exploratory with a greater emphasis on finding a problem from the point-of-view of the user. More design-like activities should be performed in this part. This might be hard to combine with the lean approach because it entails taking the time to talk to consumers and reflect on the results (whereas the lean approach tends to promote action over lengthy reasoning). Using sprints is efficient to test assumptions that have been made, but design-skills are better to form assumptions that might not be obvious. This has been summarized in the comparison in figure 14.1.

- Many elements of the lean startup approach build on working teamwork. A graduation project however is a solitary exercise. The result is that actions such as brainstorming are difficult to do alone (and the unpredictable nature of a lean project makes it difficult to predict brainstorming beforehand).

Why this only works in some organisations

- Within IB, there was flexibility and I was allowed to connect extensively with clients. Also, IB allowed me to find my own problem and solution. This also meant that I could test with the people I needed to test with and use the tools that I thought I needed to. I think that within large corporates (where there are more politics and standardized processes/structures), I wouldn't have been able to realize the speed that I realized during this project.

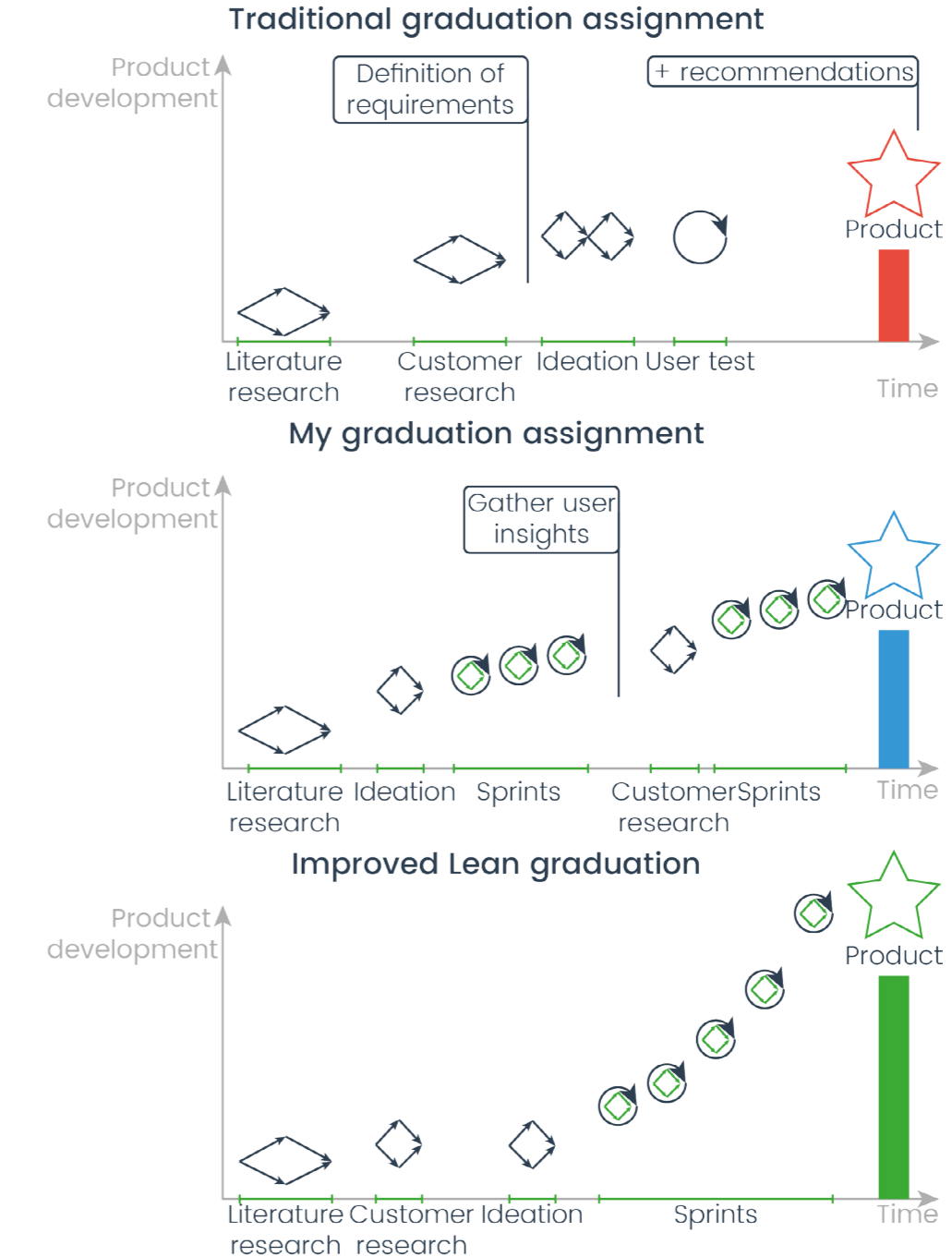


Figure 14.1: Standard graduation, vs. my process vs. lean graduation done right

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