

# **Facilitating a design-led business innovation process to validate new business opportunities in multidisciplinary teams**

*A case study of a business accelerator programme in an  
industrial machinery manufacturing company*

Master's thesis

Otso Leppänen  
Aalto University School of Arts, Design and Architecture  
International Design Business Management  
Helsinki, 2019



## Preface

Thank you for my amazing thesis advisor Anne and all the lovely colleagues from Idean for inspiration and making me to continuously challenge myself.

Thank you for my family and friends for the enormous amount of love, support and patience during this long process and for always encouraging me along the way.

And thank you for my lovely fiancée who has endured with me throughout the whole journey. You are the best.

Otso Leppänen  
October 26, 2019

**Author** Otso Leppänen

**Title of thesis** Facilitating a design-led business innovation process to validate new business opportunities in multidisciplinary teams - A case study of a business accelerator programme in an industrial machinery manufacturing company

**Department** Department of Design

**Degree Programme** International Design Business Management

**Year** 2019

**Number of pages** 112

**Language** English

---

## **Abstract**

The objective of this thesis is to analyse the key competencies required when facilitating a design-led new business development process for a team of non-designers. A business accelerator programme in a global industrial machinery company, facilitated by designers from design agency Idean serves as a case study for the research. Furthermore, the research aims to elaborate the qualities, skills, and knowledge essential for facilitators to operate in such a context while detailing the role and value that design and designers are contributing to the organisation.

Research was conducted through a semi-structured interview method to collect data about the experiences of individual stakeholders who participated in one or more of the three programme rounds. The stakeholders consisted of five team coaches and two programme management personnel from Idean and a team of six programme participants from the case company. Insights from the perspectives of the facilitators and participants were combined with literature review findings concerning the theoretical framework of the strategic value of design, relevant innovation process frameworks and adoption of design capabilities in organisations.

The findings identify four distinct layers in the facilitator's competence as transformational, organisational, collaborative and methodological. Facilitators should be able to apply their knowledge and skills to each layer while assuming a certain attitude in order to plan, coach and manage a design-led business accelerator programme. Moreover, this thesis further expands upon the preliminary phases of the programme, and finds an indication of participants learning to overcome biases and improve their critical thinking in innovation through design methodology. Designed as an output, a process phase-specific guide describes each competence layer through individual activities and requirements.

**Keywords** facilitation, design thinking, design-led innovation, co-creation, design capability in organisations, lean startup, lean business development

**Tekijä** Otso Leppänen

**Työn nimi** Muotoiluvetoisen liiketoimintainnovaatioprosessin fasilitointi uusien liiketoimintamahdollisuuksien validoimiseksi monialaisissa tiimeissä - Tapaustutkimus kiihdyttämö-ohjelmasta metalliteollisuuden yrityksessä

**Laitos** Muotoilun laitos

**Koulutusohjelma** International Design Business Management

**Vuosi** 2019

**Sivumäärä** 112

**Kieli** Englanti

---

## Tiivistelmä

Työn tavoite on analysoida kompetenssia, jota tarvitaan fasilitoitaessa muotoiluvetoista uuden liiketoiminnan kehitysprosessia ryhmälle osallistujia, jotka eivät ole muotoilun ammattilaisia. Tapaustutkimuksen kohteena on liiketoiminnan kiihdyttämö -ohjelma kansainvälisessä metalliteollisuuden yrityksessä, minkä fasilitoivat suunnittelutoimisto Ideanin suunnittelijat. Lisäksi tutkimus pyrkii edistämään tietoutta fasilitaattorin tarvitsemista olennaisista ominaisuuksista, taidoista ja asiantuntemuksesta kyseisessä asiayhteydessä, kuvaillen samalla muotoilun ja muotoilijoiden tuomaa roolia ja arvoa organisaatiolle.

Tutkimuksessa käytettiin teemahaastattelu-menetelmää, jonka avulla kerättiin tietoa kokemuksista yksittäisten eri sidosryhmien jäseniltä, jotka osallistuivat yhteen tai useampaan kiihdyttämö-ohjelmaan. Sidoryhmiä edustivat viisi projektiryhmien valmentajaa (coach) ja kaksi ohjelman järjestelyistä vastannutta henkilöä Ideanilta sekä kuusi osallistujaa samasta asiakasyrityksen projektiryhmästä. Tutkimuksessa yhdisteltiin havaintoja fasilitaattorien ja osallistujien näkökulmista kirjallisuuskatsauksen löydöksiin koskien muotoilun strategista arvoa, olennaisia innovaatioprosessimalleja sekä organisaatioiden muotoilukyvykkyyden omaksumista teoreettisessa viitekehyksessä.

Tutkimuksen löydöksenä havaittiin neljä eri tasoa fasilitaattorin kompetenssissa: muutoksellinen, organisatorinen, yhteistyöhön perustuva ja metodologinen taso. Fasilitaattorin tulisi osata soveltaa tietojaan, taitojaan ja suhtautumistaan jokaisella tasolla voidakseen suunnitella, valmentaa ja hallinnoida muotoiluvetoista liiketoiminnan kiihdyttämö -ohjelmaa. Lisäksi työ laajentaa määritelmää ohjelman alkuvaiheista ja antaa viitteitä, että muotoilun metodologia voi auttaa osallistujia oppia pääsemään yli omista ennakoasenteistaan ja parantamaan kriittistä ajattelukykyä innovaatiotyössä. Työn lopputuloksena suunniteltiin prosessivaihekohtainen opas, joka kuvaa jokaista kompetenssitasoa yksittäisten aktiviteettien ja tarpeiden kautta.

**Avainsanat** fasilitointi, design thinking, muotoiluvetoinen innovaatio, yhteiskehittäminen, muotoilukyvykkyys organisaatioissa, lean startup, ketterä liiketoiminnan kehittäminen

# Table of contents

<b>Introduction</b>	<b>10</b>
Audience	11
Background	12
Expanding application of design	12
The New Designer	14
Scope and objectives	16
Research questions	18
<b>Literature review</b>	<b>20</b>
Challenges of modern organisations and design	21
Speed, complexity and shifting focus in R&D	21
Transformative impact of digitalisation	23
Strategic role of design	24
Contemporary frameworks in the field of design, technology and business innovation	27
Design thinking as the emissary of design ethos	27
Lean Startup and The Startup Way	34
Differences of design thinking and lean startup	39
Agile as a workflow for rapid innovation	40
Facilitating design in corporate environment	42
Challenges and barriers for change	42
Design for non-designers	44
Applications of facilitator roles	46
<b>Case study: The ProCorp business accelerator programme</b>	<b>50</b>
Background	51
Programme setup and structure	53
Research design and methods	56
Stakeholder interviews	58
Data Analysis	60

<b>Findings</b>	<b>62</b>
Creating conditions for success	63
Enable, exemplify, inspire, involve and challenge	67
Access to the right knowledge	70
Purposeful programme environment	72
<b>Discussion</b>	<b>76</b>
Role of design in building more efficient innovation processes and creative culture	77
Running a design process with a business focus	80
Designer-facilitator identity	82
<b>A practical guide for facilitator competence</b>	<b>84</b>
<b>Conclusions</b>	<b>94</b>
Key findings	95
Limitations	96
Suggestions for further research	97
<b>References</b>	<b>98</b>
<b>Appendix</b>	<b>103</b>
IBM Enterprise Design Thinking competence badges and criteria	103
Interview guide questions	105
Data analysis summary	107

## List of figures

Table 1. Core elements of design thinking (Carlgren, Elmquist and Rauth, 2016)	28
Table 2. Types of challenges linked to the use of design thinking (Carlgren, Elmquist and Rauth, 2016)	43
Table 3. How design thinking helps innovators to improve their innovation processes (Liedtka, 2018)	45
Table 4. Interviewees by role and which programmes they participated	59
Table 5. Summary of interview findings: <i>'Conditions for success'</i>	66
Table 6. Summary of interview findings: <i>'Enable, exemplify, inspire, involve and challenge'</i>	69
Table 7. Summary of interview findings: <i>'Access to the right knowledge'</i>	71
Table 8. Summary of interview findings: <i>'Purposeful programme environment'</i>	74

## List of tables

Figure 1. The Design Council Double Diamond (Conway, Masters and Thorold, 2017)	30
Figure 2. Examples of different design thinking process models (Seidel and Fixson, 2015)	30
Figure 3. IBM design thinking framework: The Loop (IBM, 2018)	32
Figure 4. Build-Measure-Learn loop (Ries, 2017)	35
Figure 5. The Startup Way: Entrepreneurial management and general management (Ries, 2017)	37
Figure 6. The metered funding model (Ries, 2017)	38
Figure 7. The Idean Design Framework (Idean, 2019)	41
Figure 8. Design thinking, lean startup and agile in enterprise architecture (Gartner, 2017)	41
Figure 9. IBM Design thinking framework: Skill badges (IBM, 2018)	47
Figure 10. ProCorp business accelerator programme structure	54
Figure 11. Research data sources	57
Figure 12. Facilitator competence levels and process structure	85





# Introduction

# Audience

This thesis is written for any person interested of using design and strategic designers as driving functional force in a systematic process for accelerating and validating new business opportunities in their organisation. For a designer who is interested in taking their professional skill set towards a more strategic direction or a person thinking of hiring one, this thesis outlines some of the practical skills and qualities that a professional designer needs for introducing and facilitating design practices in different levels of an organisation. Albeit having its limitations in presenting new learnings only based on experiences from one specific context, the findings of this research can be used as a reference to scope the requirements of similar projects.

# Background

This thesis is a single case study research about experiences from a designer-driven business accelerator programme in a global industrial machinery manufacturing company seeking competitive advantage by utilising design methods and other relevant key innovation frameworks. The research studies the dynamics and challenges that an external designer faces when working as a facilitator for an in-house team of non-designers during a new business development process. Moreover, the goal is to understand what kind of competence and skills are needed to plan and facilitate such a process and what is the role and value that design and designers are contributing through it.

The main context for the research is an intensive business accelerator programme which Idean, a global design consultancy firm, collaboratively planned and facilitated with their client. The case study is based on three separate iterations of this programme which were arranged between early 2017 and late 2018. During each programme, a number of Idean's designers worked as facilitators and coaches for client's in-house teams consisting of technical and business professionals representing the company's different business areas. The main source of data for the thesis derives from the experiences of the Idean personnel and team members who participated in the programme.

## Expanding application of design

For the current decade, design as an industry and discipline has been living under constant development and change redefining its value and purpose to achieve a position as an essential functional element in the DNA of private and public organisations. Challenges faced by many industries and institutions have played major role in the rapid progress of this evolution. Increased competition and digitalisation are among global trends behind the surge of interest towards design and its methods during recent years. This can be seen for example in the widespread top level attention design thinking has been receiving during last decade (Liedtka, 2018), in avid acquisitions of design agencies and mass recruitment of designer talent by large corporations (Maeda, 2018) and encouraging reports about the positive impact of design for businesses (Rousseau, 2015; Forrester, 2018; McKinsey, 2018). The diffusion of design as a way of thinking and adoption of its methodologies in different industries and organisations has led to a situation where the definition and the concept of design itself, has been ever expanding. Nowadays the aesthetic and functional origins of design in product and graphic design are merely the tip of the iceberg as design has been applied into such immaterial and abstract contexts as services, customer experience, innovation processes and organisation strategy and culture, adapted both by private and public domains.

The two main application areas for design in a strategic level are differentiation of products and services and building of more innovative corporate culture (Aftab, Young and MacLarty, 2013). These areas of business performance have increased their importance due to the rise of global competition and digitalisation which have made the operational environment for many industries more prone for change, and stressed the necessity to become more innovative and proactive in probing their customers' needs and following market shifts (IIT, 2017). More and more companies are under pressure to think how to stand out from competitors with quality rather than price, how to shift their perspective from developing individual products to providing broader service offerings and in general, how to build in creativity and more efficient R&D capabilities in the organisation to discover more radical innovations (Design Council, 2014). As it happens, design and the way designers work and approach problems have been shown to possess many intrinsic qualities which can help in solving these challenges. For example, design has been shown to provide methods for discovering latent customer needs, tools for creating holistic user experiences, a mindset to deal with uncertainty and a cultural perspective that encourages to include more people to participate in innovation initiatives (Kolko, 2015). For organisations who want to transform themselves as more creative and agile entities in innovation, learning these skills obviously seems very relevant.

An idea to infuse design throughout the whole organisation has already been initiated by large corporations such as IBM, GE and AirBnb who have actively been encouraging their employees in all levels to adapt a design mindset and methods. As an example from strategic level attention by the business domain, a recent research by one of the most well-known management consulting firms McKinsey & Company which studied the business value of design, ended their report with a following statement: *"Design is more than a feeling, it is a CEO-level priority for growth and long-term performance."* (McKinsey, 2018, pp. 32). Suggestions in the report further pointed out the transformative importance of company-wide adoption of design: In order to capture the full value of design, companies should ensure it is utilised across business functions and make design as everyone's responsibility. Furthermore, one of the more specific action points recommended to embed the understanding of underlying user needs, an idea very central for design ethos, as an ability that should be embraced by everyone. This is in alignment with the objectives behind design thinking, a design-based approach for creative problem solving most notably advocated by a design consultancy company IDEO and Hasso Plattner Institute of Design (commonly known as Stanford d.school), to use design to systematically engage greater percentage of employees into innovation initiatives (Brown, 2009). Design thinking has further been espoused by the field of management, where it has been introduced for company executives as a process to efficiently explore breakthrough innovations and engage employees for innovation work. During the last decade the trend around design and design thinking has continued to rise and it has even become a commonly taught subject in MBA studies and executive training programmes in business schools (Martin, 2009).

## The new designer

As design has managed to articulate itself as a strategic entity given the right circumstances (Aftab, Young and MacLarty, 2013), there is now a wider audience interested to learn from its principles and methods. More and more organisations and people without formal design background are participating in design processes and at the same time, many new designer roles have emerged, which has made the whole industry significantly more multi-faceted (Holston, 2011). As the industry has been expanding from design craftsmanship towards the more abstract domain of *strategic design*, the lines between design and other disciplines have gotten increasingly blurred and the nature of the design work has considerably diversified. Designers who work in a more strategic level (such as often service designers) might as well have their background in business, technology or humanities as in design, they seamlessly utilise methods, tools and knowledge across multiple domains and are most likely to use larger amount of their time for research and facilitating participative design processes than actually crafting the final solution. For example, encouraging multidisciplinary working culture, adopting methods that resonate well with design such as *lean startup*, using tools from the domains of other disciplines such as *business model canvas* and facilitating collaborative design processes are some of the profound changes in a design professional's transformation from "*makers of things to design strategists*" (Holston, 2011).

The evolution of design discipline and the need for designers to incorporate more strategic dimensions in their profession have been described in many sources over the recent years. In his book *The Strategic Designer*, Holston argues that the change in the professional field is due to the commoditization of design services and democratisation of design as more and more people want to participate into creation of products, services and experiences. For designers to develop their profession to compete in this new environment, Holston lays out four principles for a '*new designer*' which add a diversity of new skills and requirements for designers and for the design process. The first principle is for designers to develop themselves as problem solvers and add more complexity to that capability such as considering the business environment as an inseparable part of the problem. Next, they should understand the importance of collaboration in terms of co-creation with other disciplines and audiences, how to engage with different stakeholders and work with organisational hierarchies and systems. This also includes the ability to explain the design processes so that other people can participate and realise their value. The third point raises the role of research in design process in getting to know the needs of the business and audience in order to provide meaningful solutions which have strategic impact. Lastly, the fourth principle encourages designers to take responsibility of measuring the effectiveness of their work and the value of design overall. In other words, designers need to make their work more accountable to earn their seat at the decision-making table. (Holston, 2011)

Now looking back from 2019, almost a decade after the aforementioned four principles were written, and thinking of the nature of projects that especially digital design agencies work with, it feels that at least the three first principles have been to a great extent realised and become the industry norms, especially in the wake of rising popularity of service design and design thinking. Nonetheless, accountability still seems to be something that is not yet deeply rooted in the design profession and what consulting companies currently try to leverage to gain competitive advantage. The 2018 *Design in*

*Tech Report* shows consulting companies now offering more services connecting design with analytics and data to compose insights that better inform their clients about performance efficiency and growth opportunities. The report mentions that there is a demand for '*designer hybrids*' who are designers working in highest strategic level and are able to present their solutions with quantifiable impact and identified business value. (Maeda, 2018)

Another change concerning the design practices and roles is the shift from doing user-centered design to facilitating collaborative design processes (co-design). As described in an article by Sanders and Stappers, in the traditional approach a designer used to work as a translator of user needs into solutions and was solely responsible of the creative effort in the process. Co-design in turn, recognises the collective creative potential of end-users and different stakeholders that participate into the design process and places the designer into the role of facilitator. The main responsibility of the design professional in the process is to acknowledge different levels of creativity within participants and facilitate a process which allows them to express creativity in whatever way most suitable for them to solve the problem at hand. As part of the actual design work is transferred to non-designers, the designer is supposed to concentrate on managing the larger scope and complexity of the context, equip the non-designers with new tools and methods and provide expert knowledge. (Sanders and Stappers, 2008)

Overall, the skill to involve and inspire end users, experts and other stakeholders into the design process within an organisation and across business functions to achieve common strategic goals, has become increasingly important for designers who want to work in strategic level. Furthermore, organisations are currently interested to utilise the value of design even in a more broader sense to improve internal processes and culture in general and having their employees learn to apply more efficient and creative methods in their work. Attempts to diffuse new ways of working can be implemented through i.a. intensive training courses or specific pilot programmes and projects where professional designers guide non-designers to understand the elements of design process and different methods and tools. Still even in such cases, as discussed earlier, designers are expected to take more responsibility about the business viability of the solutions they propose and present the impact and effectiveness of their methods. Regardless of the approach, a common challenge for designers who facilitate this kind of learning process is to be able to convey the essence of the design mindset and ways of working to non-designers in a manner that brings them value and helps them to become more successful in their own work. This requires understanding how organisations work, how to approach their complex strategic landscape and challenges, showing design's relevance in them, steer and manage the development of design capability and ability to inspire people to go out of their comfort zone and try new methods and practices.

# Scope and objectives

This thesis studies the competence and challenges of a designer using a design based process as a framework to facilitate a new business development programme for teams of industry professionals not formerly familiar with design or using design methods in the context of their work. Literature and references relevant to the industry (B2B, engineering-centered manufacturing) and context of the client case were used whenever possible. Even though the amount of empirical research and experiences implementing design in a strategic level in organisations is still fairly limited, the focus was kept on the most recent literature, discussions and case examples as much as was possible. As the thesis focuses on the experiences of a single case study in a particular industry, the results of the study should not be considered as general knowledge on the topic but rather to complement existing empirical research. However, having three rounds of programmes to examine helped to study the case more in depth.

The main objective in the research is to understand what qualities, skills and knowledge designer needs in the different phases of the process and how those phases work together as a framework to support the goals of the programme. Since in this setup the designer's role is to guide groups of people who do not have prior design experience of using design methodology, it is necessary to distinguish what qualities are important in *doing* design and what is needed to *convey* the key principles and ways of working for other people. To get basic understanding of the value of design and designers, the research takes into account several perspectives of how design is utilised in different environments. The aim is not to explicitly study existing designer roles nor to define a new archetypes but rather to study the challenges designers face in strategic level roles.

As the case study programme itself is a fairly experimental application of design and other methods and tools, it is a good opportunity to study how design works in such conditions. The research examines the current challenges in the industry and where and how design can or could provide critical value. Another focus of the study is to acknowledge the influence of other disciplines and methodologies that are all the time getting more widely diffused into the design process. The research takes an open mind towards modern frameworks and tools that are used in conjunction with the design methods to complement the deficiencies of design process. The most relevant non-design framework considering this case study is the lean startup methodology which has greatly influenced the design of the accelerator programme. Making a thorough study of the modern process frameworks is not in the scope of the thesis but understanding basic characteristics and concepts of the most relevant methodologies is needed in order to identify their similarities and differences.

The Nordic Design Resource recognises strategic design as one of the six distinct design disciplines in the Nordics: "*Strategic design is the application of design principles to development and organizing of processes, resources and business models*" (2018). Design Council describes that design is used as a strategic instrument when it is whether integrated in organisational processes and informs strategic decisions, used to differentiate from competition or when top management understands and promotes



the value of design (Design Council, 2014). In the design literature, strategic dimensions of design are to a large extent covered in the design thinking related research which is why it was used as the primary source of information for strategic application of design principles and processes. Overall, any kind of empiric material about industry experiences from using design thinking in new business development and innovation activities in large organisations was highly sought for during the research. In general though, this thesis does not go into too much depth in innovation management because of the vast amount of research in that topic, but rather aims to focus on occasions where design has been used as an instrumental part of the innovation activity. Service design was also considered as a potential source for strategic design research but was eventually left out of the scope due to having a lot of overlap with design thinking and to avoid confusion between the two terms. Design thinking was also seen to be more relevant concept in terms of existing literature when considering the learning of design skills and methods.

A term often used in this thesis is '*design-led business development*' what means using the design process, methods and tools as a main source of inspiration in the business development process. This shouldn't be confused with the term '*design-driven innovation*' used by Verganti related to radical innovation activity that introduces designers as interpreters who draw inspiration from current socio-cultural phenomena (2008).

In the context of this thesis, '*facilitator*' refers to designers whose role is to prepare, manage and guide a business development process by utilising design principles and methods, but who isn't primarily responsible of designing the final solution. In general, the research studies the interaction between facilitators and team members and how designers feel about being in the role of guiding other people to innovate and design new solutions instead of doing it directly themselves. Challenges of deploying design in large organisations are also an important focus area since the secondary objective of the programme, after accelerating the development of new business opportunities, was to create an experience for the participants to learn new effective ways of working and thinking. This is why the research focuses on more practical examples of using design in product development and how to manage collaboration and learning of new methods and tools through practice rather than from the field of design education. Although the emphasis in this thesis is to study the facilitator's competence, the research draws a lot of insights from the participating team members, who can be basically considered as the end users in this context. In this case study, the designer facilitators who specifically worked with the teams during the programme are referred as '*coaches*'.

# Research questions

The research aims to clarify what kind of factors in a designer's competence and personal qualities are vital in facilitating a new business development process and why should the designers be the ones doing it. The idea is to examine design in this context and help to further define a designer's role and as a part of strategic business development. As a result, the research aims to deliver a proposal that maps out different elements of professional competence, actions and personality that a facilitating designer would benefit from in different phases of the business development process. The intent of this research is to bring more empirical knowledge about using design as a backbone to organise and facilitate a similar business development program and help to better define the skills that a modern designer needs in order to operate in such an environment. In addition, this research will hopefully help design agencies and in-house design functions to define what kind of talent to have if they are interested about having professionals for strategic facilitation purposes.

Following research questions were formed to steer the research:

1. **What kind of competence is needed to facilitate a design-led new business development programme in a B2B organisation?**
2. **What are the key elements in a contemporary design-led business development process?**
3. **What are, from the perspective of participating non-designers, the key opportunities and challenges in a design-led business development programme?**



# Literature review

# Challenges of modern organisations and design

***The first section introduces some of the main trends and challenges that are driving organisations to transform the ways they think and operate and how those are important for their future performance. Furthermore, it will discuss how design is relevant in tackling those challenges and what connects design with business. The main focus is to understand the foundations behind design's strategic role in the context of the current business environment and what core elements in designer's competence and skill set constitute the value what organisations are interested of.***

## Speed, complexity and shifting focus in R&D

Intensifying competition and digitalisation are among global trends which have made the business environments of many industries more prone for change and significantly increased the speed and complexity needed to build new products and services. This concerns especially more radical innovations. The time that it now takes to research, develop and deploy a potentially disruptive innovation to the market has quickened considerably (Blank, 2019). As a result, a company's ability to speed up the process of commercialising their products and technologies and taking them to market has become an essential competitive advantage (Still, 2017). This has challenged especially larger organisations for whom it is usually harder to react swiftly to market changes and take advantage or respond to an incoming disruption (Blank, 2019). Competition in increasingly saturated markets has created more pressure for R&D and innovation functions through shortened product development cycles and by urging companies to identify and develop more precisely targeted solutions for smaller market segments (IIT, 2017; Schuh, Lenders and Hieber, 2008). Therefore, companies actively seek ways to become more agile in innovation and proactive in probing latent individual customer needs. In practice, this means developing shorter and more efficient R&D processes and ability to reduce the time-to-market for new innovations (Hoppmann et al., 2011). According to a study from 2017, 68 % of companies identify agility as one of their three most important initiatives. Further, following agility in top business drivers for enterprises, time-to-market was picked to top three by 47 % of companies (CIO Insight).

Being more proactive in searching for radical innovations means that the problems to be solved are sometimes very hard or impossible to define accurately beforehand. These are so called '*wicked problems*' where the processes of traditional scientific approach in product development cannot be used, since there are no objective ways to understand when the ultimate outcome has been found (whether the achieved result has been proven true or false). Instead, evaluation of wicked problem solutions are subjective and the scale to evaluate the solutions is merely whether they are better or worse compared to the earlier situation. (Rittel & Webber, 1973)

Such an ill-defined problem solving can be difficult for traditional organisations which have been arranged to function in hierarchical units to systematically produce certain measurable outcomes and minimise risk (Ries, 2017). Furthermore, modern working environment is getting increasingly complex as customers demand for more comprehensive solutions which combine different technologies. Physical is merged with digital and products are blended with services in order to create holistic customer experiences which means that companies need to become extremely collaborative and manage a wide diversity of expertise in order to deliver cohesive value propositions. According to Doherty et al, successful innovation culture requires that management is not too averse for risk, people in the organisation get widely involved into innovation work, share responsibility of it and get their creativity incentivised. (Doherty et al, 2015)

Another trend also affecting to many industries is shifting the mindset from manufacturing and selling of products into offering more comprehensive service solutions for the customers. Manufacturing firms have been used to focus their main value proposition and innovation activity mostly around technological innovations, but many markets have become so matured for those types of innovations that competing differentiators must now be found elsewhere. In addition, services provide higher margins than products and are better to withstand economic fluctuations and maintain competitiveness. Good example from this kind of transition is Kone, previously known mainly as a manufacturer of elevators and escalators. As Kone found continuous and significant technological innovation all the time harder to sustain, they redefined their business from product-centered manufacturer to customer centered service provider. Instead of promoting only technological excellence of their products, Kone now offers solutions which "help users to move smoothly, safely, comfortably and without delays". (Salonen, 2011)

Currently many industrial producers are interested about integrating services more deeply into their portfolio and create product-service hybrids where the service is inseparable part of the product (Stickdorn and Schneider, 2011). However, building great services requires different kind of skills than building technical products. Especially companies whose business is based on technical inventions and design engineering, are not necessarily capable to adapt the processes and the right mindset needed to create holistic product-service solutions. One common flaw is e.g. lacking methods and expertise in how to discover and understand hidden customer needs (Miettinen, 2016). A study on German manufacturing companies showed that lack of transparency with the customer and failing to follow their values and needs were the most common reasons for wrong decisions and late iterations in product development projects (Schuh, Lenders and Hieber, 2008). A 2017 report by IIT shows at least that the issue is somewhat recognised in the industry, as according to the report, 64,3% of European manufacturing companies said that their innovation strategy has been organised around customer needs while most of them (82,0%) also named customers being their most important external stakeholders (IIT, 2017). What remains unclear is that in what way user needs are researched and how much they actually affect to the decision making.

## Transformative impact of digitalisation

Digitalisation is the defining trend behind the change in today's business environment and driver for companies to build organisations which can adapt to fast-paced market shifts in their respective industries and find new business opportunities (Parviainen et al, 2017). The effect of digitalisation is only expected to grow in the future and will evidently impact all industries and the society as a whole. For example, digital service-oriented and technology-intensive businesses are considered to be one of the few potential sources of future growth for European companies trying to match competition from Asia and USA (Alm et al, 2016). In general, the potential benefits of digitalisation have been considered to be high in making processes more efficient and cutting costs. According to The Boston Consulting Group report from 2018 digitalisation leads to 6-10 % growth in revenue through personalisation of products and services, two to four times faster time to market because of the new ways of working and 70 % cut for service costs through intelligent maintenance solutions (Hutchinson and Aré, 2018).

The concrete benefits that digital solutions can bring for a manufacturer of industrial machinery and their customers, are clearly presented in an example case by Caterpillar. The company created an experiment where two teams with identical machinery simultaneously constructed a stretch of new road. The difference between the two teams was that the other was equipped with fully connected digital technology which resulted the digitally connected team to finish the road in half time. The digital solutions that Caterpillar used helped to save in employee costs, fuel consumption, safety and time saved in total project and equipment hours. (Caterpillar, n.d.)

Parviainen et al (2017) identify three viewpoints about the impact that digitalisation has on organisations. It increases internal efficiency through improved ways of working, processes and tools, opportunities to find new external business opportunities and causes disruptive changes in the current value chain and business roles in it. Hence, redefining the customer value propositions and organisation's operation models should be considered as key actions for achieving full digital transformation in a company. These actions need to be developed to support each other to efficiently deliver innovative business models based on real customer needs. (Berman, 2012)

The tendency of how even large companies nowadays might redefine their purpose, value proposition and business models and how it indicates disappearance of boundaries of innovation is well described in the following quote by an executive director of design firm Artefact:

*"Today, innovation is increasingly characterized by a paradoxical hybridity. GE is a software company. Google may yet become a transportation company. Drugstores are health and wellness advocates. Healthcare needs service design; automotive needs UX; and so on. Designing within this context is incredibly complex, requiring a more holistic approach to systemic problems."* (Rousseau, 2015, p. 13)

## Strategic role of design

By now, there already starts to be compelling evidence about the return of investment on design over multiple industries. McKinsey study from 2018 showed that companies which had integrated design as part of their culture and were genuinely committed to follow design principles, had 32 % more revenue and 56 % more total returns for shareholders (McKinsey, 2018). For organisation's internal development, implementing design processes have been shown to improve the consistency of portfolio and lead to faster time-to-market. Furthermore, design has been shown to benefit internal culture by facilitating cross-functional collaboration and encouraging dialogue, teamwork and creativity (Design Council, 2014). These seem to match well with aforementioned challenges that modern-day organisations are more commonly facing, such as need for agile and proactive innovation methods, increased complexity when products, services, physical and digital are combined into new value propositions and the structural changes to the mindset and ways of working that aforementioned developments require. All in all, design has been recognised to possess strategic importance, though there is not probably one clear answer for what actually constitutes its unique value.

In general, design can be a difficult concept to explain. The value of design culture defined by Cross is to embrace "*practicality, ingenuity, empathy and a concern for 'appropriateness'*" (2006, p.18). In practice these qualities mean that a designed solution is something that is easy to understand and use, is somehow distinguishable from other similar solutions, considers the abilities and characteristics of people interacting with it and its value is validated to meet the needs of the main stakeholders. In a sociocultural level, Battistella, Biotto & De Toni describe the role of designers as sensing the current discourses in society and interpreting values and meanings which are then turned into products and services (2012). Murphy further emphasises the creative and interpretative qualities of design as aiming to "*...make explicit the obscure workings of the imagination*" (2017, p. 129). Overall creativity, human centricity and intuitive working and thinking methods are in the core of design mindset and are the foundational link to the more traditional product-centered design disciplines. While evolving into such domains as customer experience, business and strategy, design has still built on those same basic foundations but has at the same time had to expand and accommodate its principles to fit into its new purposes and create new methods and frameworks.

Martin explains the role of design from management perspective by linking it with an approach of 'abductive logic'. Abductive logic combines both intuitive elements of exploration and analytical thinking of exploitation which companies need to constantly balance in order to seek, create and implement something new while generating revenue from what they currently have. Martin describes abductive thinking as a way of logical reasoning where ideas are taken forward one step at a time, alternating between hypothesis and looking for data to evaluate the potential of an idea, which direction should be taken next and whether new ideas are discovered. In other words, it is about being more open to new ideas and creativity while implementing the exploration in a controlled manner with a prospect to find more unique business opportunities to bring significant competitive advantage. (Martin, 2009)



A McKinsey report further breaks down the business value of design from the management perspective into four areas which, according to their study, had most correlation with better financial performance. First of all, the report suggests to be analytical about design's performance in organisation and to build and maintain systematic ways to measure it. Moreover, design and user-centricity should be considered to be an approach not just limited for designers but as a cross-functional ability and part of the company culture. In particular, design's procedure to closely collaborate with customer and end-users including continuously looking for user insights, testing with quick prototypes and iterating the solution, were something that were seen to benefit development in general by lowering the risk. The fourth actionable area was establishing the idea of customer's user experience (UX) as a collective effort which would unite the organisation to develop their products and services towards a common end result, regardless of what properties or functions were needed to create them. (McKinsey, 2018)

Aforementioned perspectives tried to capture the more universal qualities that design can have and what companies can achieve with it. Next, these qualities are further linked closer to the current industry trends and challenges that were discussed in the beginning of this chapter. In his book *'The Strategic Designer'*, Holston (2011) describes the strategic relevance and impact of utilising design process through following organisational needs:

### **The need to innovate**

Companies need to constantly keep ideating and innovating to find new competitive advantage in overcrowded markets. Design provides a process and tools to maintain such continuous development of new ideas based on recognising hidden customer needs, communicating with different audiences and reacting to societal changes. Design process also provides a structured way for creative thinking to explore more radical ideas and their potential.

### **The need for speed**

As discussed earlier, innovations need to move faster from concept to market. Design process can considerably cut development time and cost because it focuses to ensure the relevance of the problem very early on in the process and guides the development in an iterative manner to validate the solution. Alternating between experimenting solutions and analysing them from the perspective of business objectives represents the abductive logic at work (Martin, 2009). This is to minimise the time used for developing ideas that prove insignificant or non-viable for the stakeholders.

### **The need to manage risk**

The more into the future and radical ideas are explored, the more complex the problems get which increases the demand for organisation's ability to tolerate and accept uncertainty. Dealing with wicked problems and uncertainty is an inherent factor of most design endeavors which is why there are controls and tools in place to manage them.

### **The need to manage projects efficiently**

Solving complex problems requires managing lots of information and communication. In a design project, the designer often needs to communicate and align the voices of multiple audiences in order to reach a state of consensus which they try to epitomise into an artifact or a service for a desired impact. As designers often need to plan and coordinate much of this by themselves, the design process also includes a good framework for project management.

### **The need for collaboration and co-creation**

Customers can rarely outright express what they want or need which often results to new products failing. Including customers and stakeholders tightly into a co-creative design process makes it possible to tap into insights what couldn't be found with more conventional methods and find hidden needs. With the help of co-creation methods, design has also been said to function as a glue between disciplines by involving stakeholders inside an organisation into the development process which helps to raise necessary support and co-ownership for new ideas (Stickdorn and Schneider, 2011).

### **The need for transparency**

Transparency is important in managing innovation processes in organisations so that they would be efficient to use and clearly show how the goals were achieved. A well defined design process offers a structured framework to support the exploration of complex problem environments and is flexible enough for open interaction and influence with different stakeholders.

# Contemporary frameworks in the field of design, technology and business innovation

***The last chapter discussed why organisations are so eager for finding new ways of working to become faster, collaborative and more creative. This chapter in turn, will focus on some specific frameworks and methods which are being used to achieve those objectives. It introduces design thinking which is the most common strategic level concept of design and lean startup and agile methods because of their relevance to the case study. The aim is to understand their unique qualities, similarities and common applications, how do they differ from each other and in particular, find experiences about implementing them in large organisations.***

## Design thinking as the emissary of design ethos

Design thinking can be considered as the primary high-level concept of design in strategic level and framework to communicate design philosophy and use of design methods to managers and non-designers (Johansson and Woodilla, 2009). Carlgren, Elmquist and Rauth summarise the idea as: “... design thinking is generally described as a multi-disciplinary human-centered approach to innovation, inspired by the ways designers think and work.” (2016, pp. 345). In terms of organisation management, Johansson and Woodilla connect design thinking with strategy and innovation with a notion that all of them are referred in companies to represent strategic work and being tools for growth and organisational change. They continue to propose that since all the actors are compatible in engaging with each other towards similar goals of general development of the company and holistically adding value through the whole organisation, there should be a ‘*synergistic dialogue*’ where design possesses an equal influence in the strategic level. (Johansson and Woodilla, 2009) Nevertheless, Liedtka points out that many of the elements in design thinking process and tools can be already found from other frameworks and practices and doesn’t as such bring anything too unique to the theory of management (Liedtka, 2018).

The foundational idea of design thinking has been connecting design, business and technology under one framework. One of the most visible spokespersons of design thinking has been the CEO of design and consulting firm IDEO Tim Brown, who describes the skill of designers being able “*integrating what is desirable from a human point of view with what is technologically feasible and economically viable*” (Brown, 2009, pp. 4). Derived from that origin, design thinking can be thought as a cognitive process

which aims to pass this integrated approach of problem solving into the hands of non-designers. In the context of running a business Brown calls design thinking the *'the third way'*, which emphasises to include the outside-in user-centered perspective into the decision-making process to balance the more traditional inside-out approaches of technology and business. The user-focus will help to sort out the problems that are actually worth solving before using too much effort and resources on research and development. (Brown, 2009) It is important though, not to confuse the term user-centered with user-driven. The first draws inspiration from users by trying to understand their behaviour in their real context what may lead to find needs they weren't able to directly express. The latter instead, only answers to something that the customers can explicitly request. (Design Council, 2014)

Brown further explains the principles of design thinking method being about teamwork, culture of optimism and innovation, observation and empathy, focus on groups over individual and experimentation (Brown, 2009). Although Brown is one of the most referenced sources in this topic, there are also numerous other definitions about design thinking before and after him. The core elements based on comprehensive literature review have been summarised by Carlgren, Elmquist and Rauth in the following table:

Core theme	Examples of practices and principles/mindsets
User focus	Empathize with users to understand latent needs by using qualitative, context specific approaches to do user research. Interaction with users in, for example, research, ideation and idea testing.
Problem framing	Challenge and reframe the initial problem, to expand both the problem and solution space, through various synthesis activities that include pattern finding and ideation.
Visualisation	Make ideas and insights visual and tangible, to externalize knowledge, communicate and create new ideas, through, for example, visual structuring techniques, rough mock-ups and role-play. <i>'Thinking by doing'</i> .
Experimentation	Iterative divergent and convergent work style. Prototype quickly and often to learn (simple and rough representations), and test solutions quickly by sharing prototypes with users. Fail often and fail soon. Playfulness and humor.
Diversity	Creation of diverse teams with a climate where every opinion counts and decisions are taken jointly. Collaboration with external entities and seeking diverse perspectives from a variety of fields. Democratic spirit.

Table 1. Core elements of design thinking (Carlgren, Elmquist and Rauth, 2016)

## Design process

What makes design thinking challenging to implement is that there is no one way in doing it, as there are almost as many design thinking processes as there are organisations using it. Still, having a structured and facilitated design process is one of the prominent practices when deploying design thinking (Liedtka, 2018) and there are some basic principles which most of them share. The first one is *exploration* which happens in the beginning of the process and aims to define the problem to be solved by using ethnographic research to study the user needs. The idea is to empathise with the user to understand their challenges and deep needs to form the design criteria. The second practice is the *generation of ideas and concepts*. A common method is brainstorming where a group of participants creates lots of ideas in a structured process that emphasises openness, sharing and discussion (Brown, 2009). The final similarity in design thinking processes is *experimentation* with prototypes to test which ideas are most suitable. The experimentation phase happens in close collaboration with the users and other relevant stakeholders. (Carlgrén, Elmquist and Rauth, 2016; Liedtka, 2015)

A common pattern in design processes is a structure which first supports to create a number of possibilities and then guides to narrow down the choices to select the best solutions out of them. This is called *divergent and convergent thinking* which basically follows the pattern of analysis and synthesis of the abductive logic discussed earlier (Brown, 2009). The divergent and convergent structure is probably best visible in the *'Double Diamond'* design process developed by Design Council which is also one of the most recognised models (Fig. 1). Furthermore, the previously discussed common design thinking practices are also visible in the model. The first diamond can be thought to represent the exploration phase in collecting data through user research and synthesising the findings into a problem definition (*Discover & Define*). The second diamond then starts with divergent phase of generating ideas that could possibly solve the problem and starts to converge again in the experimentation phase where the best ideas are tested with users to find the best solution (*Develop & Deliver*). As can be seen in Fig. 2 though, there are numerous interpretations of how design process should be arranged which means that one model doesn't fit for everyone, but might also indicate that design thinking process is something that has not yet been fully established.

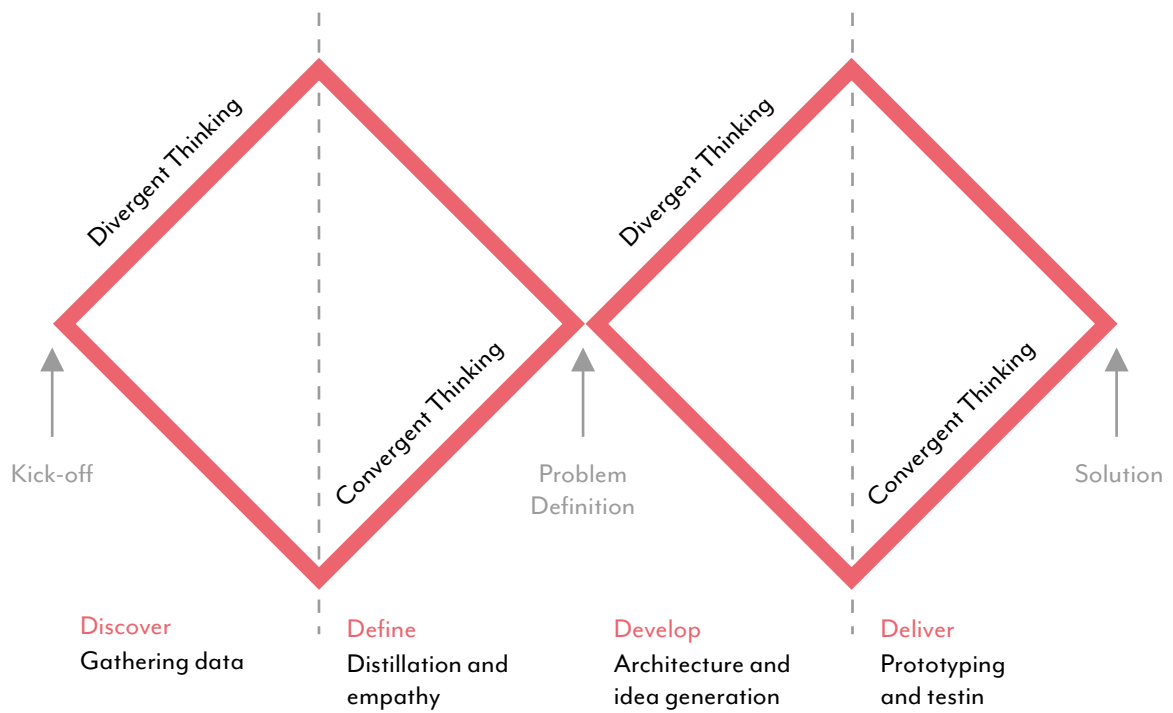


Figure 1. The Design Council Double Diamond design process model (Conway, Masters and Thorold, 2017)

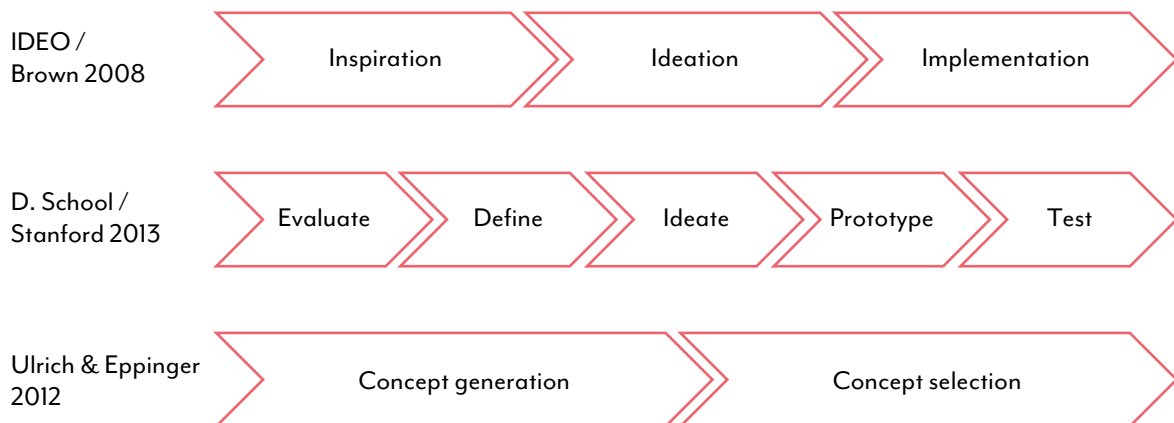


Figure 2. Examples of different design thinking process models (Seidel and Fixson, 2015)

## Design thinking tools

There is a numerous amount of different tools to support the design process and it can be considered as the responsibility of the person facilitating the design process to select the right tools and create new ones when necessary (Stickdorn and Schneider, 2011). It is not in the focus of this thesis to go too much into detail in single design thinking tools, but it is beneficial to have some overview about them since they well describe the ways of working in a design process. One categorisation has been composed by Liedtka who proposes an innovation toolkit describing a collection of tools commonly associated with design thinking (2015).

**Visualisation** Using visual narratives, storytelling and metaphors, and sharing ideas on e.g. post-it notes and whiteboards to create shared ownership with team members.

**Ethnography** Studying and observing users and interacting with them in their natural environment and context with techniques such as interviewing and journey mapping.

**Structured collaborative sense-making** Creating a shared understanding in a team about the central hypotheses and opportunities based on research insights. Techniques such as brainstorming and concept development are used to collaboratively generate ideas while emphasising open mindset and getting inspired in the process.

**Assumption surfacing** Acknowledging possibly hidden hypothesis and opinions about an idea which influence to the decision making and design of the solution.

**Prototyping** Making ideas and concepts tangible with tools such as mockups, storyboards, user scenarios and journey mapping in order to elicit more genuine feedback.

**Co-creation** Including and engaging users to the whole development process.

**Field experiments** Testing the assumptions with prototypes in the field with real stakeholders.

(Liedtka, 2015)

## Case: IBM Enterprise Design Thinking

Maybe the most extreme example of deploying design thinking framework and process in a large scale is IBM who has been known to have increased the role of design and amount of designers in the company as manyfold during recent years. Currently they are the biggest single employer of designers in the world and have trained design thinking for tens of thousands of their other employees (O’Keefe, 2017). IBM even ended up creating their own design thinking framework called ‘*The Loop*’ which they packaged into a service and what they now sell for their clients as ‘*Enterprise Design Thinking services*’. Most information considering the IBM design process has been collected from their web page where the framework has been described in detail. (IBM, 2018)

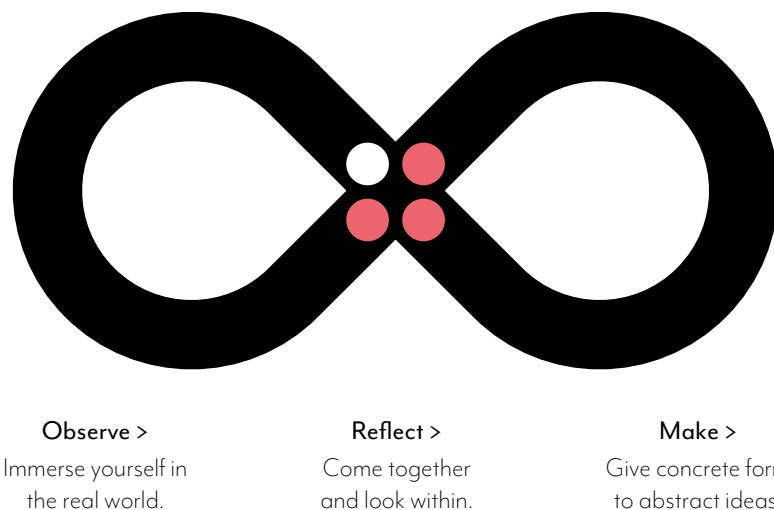


Figure 3. IBM design thinking framework The Loop is described as a continuous cycle of observing, reflecting and making. (IBM, 2018)

In deploying design into an organisation as large as IBM, The Design Manager Phil Gilbert emphasises the importance of having people doing design thinking in practice instead of just training them, creating cross-disciplinary teams staffed with trained designers and having a common language and visual toolbox helping to communicate design consistently across the organisation (Meixler, 2018). Overall, the IBM framework puts lots of emphasis to organising and managing of the team work. What is notable is that instead of having a linear process composed of consecutive stages, IBM has defined three most important techniques called ‘*The Keys*’ which are meant to support teams of all sizes to keep their project aligned with design thinking principles. The three Keys are called ‘*Hills*’, ‘*Playbacks*’ and ‘*Sponsor Users*’.

*The Hills* are guiding statements for the team to maintain the focus on the user needs as they work on the challenges during the development process. Hills are basically written descriptions of the value that the solution creates by specifying the user (Who), what is the need that they have or problem that should be solved (What) and how it will distinguish the solution from competitors and the way it will be measured (Wow). It is highlighted that Hills shouldn’t describe any final solutions and that at



the beginning of the process they are treated as living entities that can be freely revised and modified. Moreover, no more than three Hills are recommended to be included into one project as they should be considered as the most important outcomes for the users. Hills should also be prioritised based on their value for users and organisation so that resources can be allocated accordingly.

*Playbacks* are a way to take care that the relevant stakeholders are aligned with progress of the project in regular intervals. They are meant as sharing sessions where the team collects feedback on their work by inviting people to comment and discuss the project from several perspectives. This has an important role in bringing people from different functions and organisational levels together and creating transparency to the process. Playbacks can be arranged at any moment but certain milestone Playbacks are recommended to have to ensure steady progress. For the milestones, IBM proposes four Playbacks which aim to make sure that each Hill is being developed towards outcomes that meet the expectations of the users and has an approval from the internal stakeholders. The first Playback checks the proposed outcomes after which the teams can start to create solutions for each Hill, that are in turn presented through user experience journeys in the second milestone Playback. Once the low-fidelity prototypes have been accepted, the team starts to build the solution in sprints and delivers a first working solution in the third milestone, from where it is further developed for final feedback loop in the Client Playback. This very much resembles the divergent and convergent rhythm of the Double Diamond model.

*Sponsor Users* are guests regularly invited to the development process who represent the real or potential end-users or associates who have an interest concerning the project outcomes. Their role is to share their expertise and experience to provide insights for the project. While it is noted that Sponsor Users do not eliminate the need for traditional design research, they are instrumental in efficiently clearing out the team's assumptions and should be included in the Playback sessions. IBM recommends to have at least one Sponsor User for each Hill. Depending on the context, Sponsor Users can be recruited either through internal channels and functions or via external sources such as the client organisation.

### Critique on design thinking

As design thinking has gained more visibility, it has also sparked some critique both from traditional design practitioners and from people from business and technology. One type of criticism from inside the design discipline is related to the democratisation of the design methodologies. Some designers think design thinking over-simplifies the work of designers and by trying to popularise the design process and thus lowering the value of the work of design professionals (Dawood, 2018). External critique instead typically questions design thinking as just another management fad created and imposed by consultant agencies, a trend that will evidently be replaced by some other similar phenomenon (Vinsel, 2017). Besides, as the field of design evolves so quickly some critics have already condemned design thinking as an outdated framework in relation to how design is nowadays being done (Korhonen, 2018). In general, the process of design thinking has been sometimes accused of being too abstract, ambiguous and thereby difficult to apply in practice. Overall the discussion around design thinking is still ongoing and organisations are constantly looking for new ways to apply it. The case study presented in this thesis is yet another of those experiments.

## Lean Startup and the Startup Way

Originating from manufacturing industries, lean management aims to remove all non-value adding activities from the organisation's processes and concentrate to improve activities which add the most value to meet the external and internal customer requirements (Hoppmann et al, 2011). Lean startup is a method that became a popular adaptation of the lean philosophy after the release of the 2011 book 'The Lean Startup' by Eric Ries. *Lean startup* promotes an idea of corporate entrepreneurship where cross-functional teams of employees and managers adapt a working mentality of a startup within their organisation to develop new products and services. The method is meant especially for innovating in a highly uncertain circumstances. Ries describes the method and the process of Lean Startup through the following key terms: (Ries, 2017)

### Leap-of-Faith Assumptions (LOFA)

*Leap-of-faith assumptions* are about making explicit what are the critical hypothesis behind the business plan and which are thought to lead to a successful realisation of the vision. The idea of LOFAs is to make sure that the solution that is being developed actually meets the needs of the customers before starting to build the solution. Overall, LOFAs help the team members to describe what is the problem they think that the customer has and what special value does their solution provide in solving that problem. The assumptions should be written down and asked directly from the real customers. Testing whether the assumptions are true or not should be done in experiments with real prototypes so the researcher can observe the customer's genuine behaviour instead of just asking about their preferences.

### Minimum Viable Product (MVP)

*Minimum viable product* is an early version of the solution that is used to test the assumptions (LOFAs) with a minimum amount of time and resources to collect feedback about the product from customers. MVPs are also a good way to concretise the idea which helps the team to start iterating their concept in a quick way. The goal is to learn as fast as possible and increase the probability to develop the solution towards the right direction. An MVP can be anything from a cardboard mockup or storyboard to a functioning prototype to test the most important features. The team should always ideate multiple MVPs and not get stuck with the first one that comes to mind, although Ries notes that often the greatest difficulty for teams (especially engineers) working with MVPs is not building it but the psychological barrier of not wanting to show an unfinished product to a customer.

### Validated Learning

*Validated learning* is a systematic way to follow the increase of value of the concept through a series of experiments. The customer value should always increase after each MVP iteration. Ries recommends a rule of three A's for choosing the right metrics to follow and support the progress validation. Data has to be *actionable* so that the results from the experiment can be traced back to the changes made in the concept to point out causal links. Furthermore, reports from the learnings should be *accessible* for everybody in the project and the data and the analysis must be easily auditable and transparent to ensure credibility of the process.

### Build-Measure-Learn loop

These are the steps how MVPs are continuously iterated and validated through the lean startup process (Fig. 4). The loop begins with turning an idea into a product prototype, where it continues to defining of metrics that are used to analyse the data from the experiments. The analysis results into new learnings which are utilised to build the next improved iteration of the MVP. The *build-measure-learn loop* goes on as long as the team is happy with the reaction and feedback that the MVP has on the customer.

### Pivot or persevere

This is a point of decision making when the team evaluates is their strategy going to the right direction in relation to the vision. If the learnings indicate that at least some of the leap-of-faith assumptions still hold true, the team can persevere and decide to continue the build-measure-learn loop and create another refined MVP. If instead, it seems that the feedback from customers is negative, the latest improvements to the prototype didn't capture the desired impact or data from an experiment proved an important assumption to be false, the team should discuss what kind of maneuver will take the concept back on track and *pivot*, either by optimising the MVP or changing the whole strategy. Ries further defines pivot as “...a change in strategy without changing the vision.” (Ries, 2017, pp. 167). Nevertheless, he points out that pivoting a strategy might be a difficult moment for the team and their morale since it is not something that everybody might agree on.

(Ries, 2017)

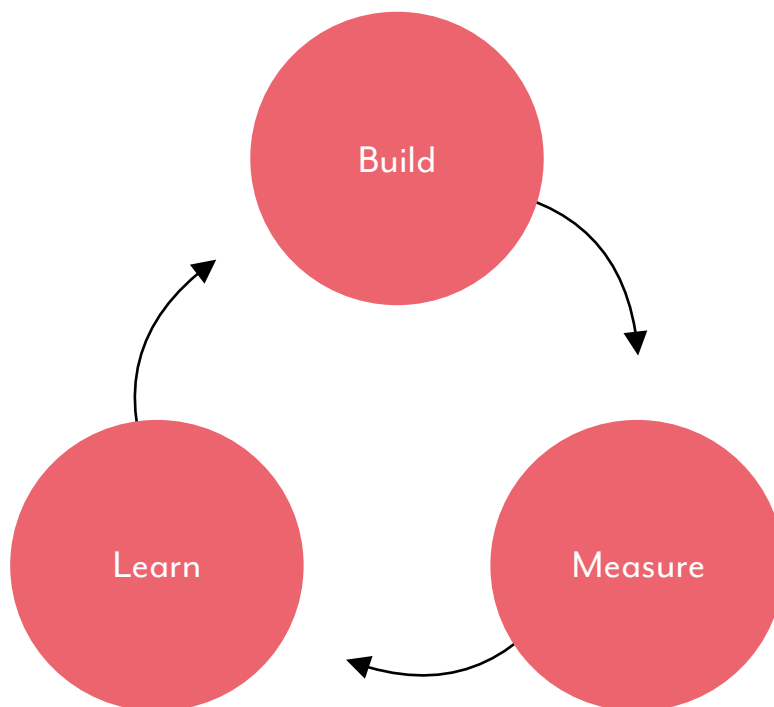


Figure 4. Build-Measure-Learn loop process model of Lean Startup (Ries, 2017)

## The Startup Way and supporting innovation accountability

The Startup Way is a more recent book from 2017 by the same author where the lean startup method is applied into a large enterprise context. It has been written as a three-phased guide to help transform a large organisation by integrating entrepreneurship and innovation deeper into their culture and structures in order to become more conducive to emerging markets. The book is built around a case study of deploying lean startup principles in GE, one of the largest industrial companies in the world, where they ended up training thousands of company executives and employees with the new ways of working and implemented hundreds of product and service development projects under a dedicated programme called '*FastWorks*'. As a whole The Startup Way is an organisational form which combines the traditional '*general management*' with modern lean startup inspired '*entrepreneurial management*' (Fig. 5).

Unfortunately The Startup Way does not have a comprehensive description about an end-to-end lean startup product development process in practice, but there are many relevant topics about helping to integrate iterative and experimentative development processes in a large organisation. One interesting difference between the traditional and the modern Startup Way management model considering facilitating new business development projects, is how the success of projects and their progress are measured and what are the incentives for managers and employees to participate in development projects that have higher risk and uncertainty. Ries argues that the current system favours building business plans on unrealistic predictions and forecasts that rely on gross metrics such as revenue, profit, return of investment (ROI) and market share. These are not appropriate metrics to be used with a lean startup process since early phase and more radical ideas will always take longer time before they start to generate revenue and besides, they do not work well with the iterative approach of progressing through experiments, learning and pivoting either. Still at some point, the teams need to prove their accountability with a credible business plan to get to continue their project. To support managers and teams, Ries proposes a model of '*metered funding*' to manage opportunities from idea to market and '*innovation accounting*' as a tool for teams to provide metrics about their progress.

The *metered funding* model (Fig. 6) provides the project teams both the freedom to use their funding as they see best, and strict requirements to present evidence of validated learning and progress to get to continue the project through a next round of funding. The idea is to mimic the arrangement between a startup and a venture capital investor where the team has lots of autonomy on how they work but have to prove that their probability of success has increased before unlocking more funding. Ries argues that providing constraints for the team through staged funding is a good way to maintain the energy and focus of a startup. Furthermore, metered funding also helps to reduce political and accountability issues related to project budgeting by providing a more transparent system where the whole team shares the responsibility of the project success. To oversee the progress, Ries proposes to set up a dedicated *growth board* who the team is directly accountable for.

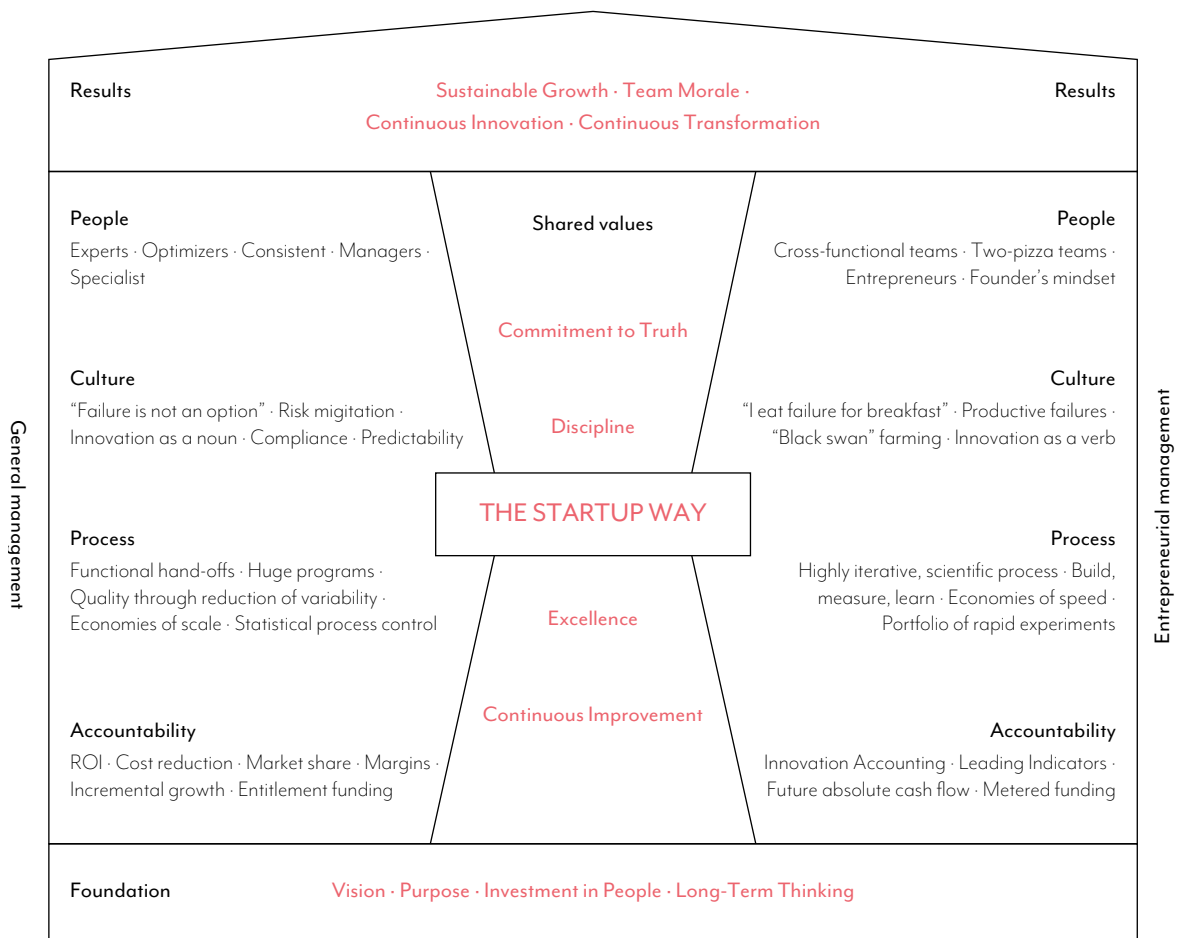


Figure 5. 'The Startup Way' described as a combination of general management and entrepreneurial management (Ries, 2017)

*Innovation accounting* is a tool for teams to follow their progress, set milestones and prioritise their work. “It (*innovation accounting*) provides a way to tie long-term growth and R&D into a system that follows a clear process for funding innovation that can be audited for its ability to drive value creation.” (Ries, 2017, pp. 488) The key metrics and data are recorded in dashboards which provide common vocabulary and accountability standards for the project teams. Innovation accounting focuses on per-customer metrics as the primary data input which indicate the progress that drives the business plan, instead of the traditional way of predicting financial goals. Per-customer metrics are inputs that can be measured from every individual customer such as conversion rate, revenue per customer or cost per customer. Overall, it is important that the dashboards show how the leap-of-faith assumptions drive the business plan. As the team continues to learn more, the dashboard should evolve to represent the entire interaction with the customer and have a quantitative way to measure the customer value hypothesis. In other words, the team has to define what specific customer behaviour can be used to measure the success of the product and present it in a way that is understandable and acceptable for the finance department. (Ries, 2017)

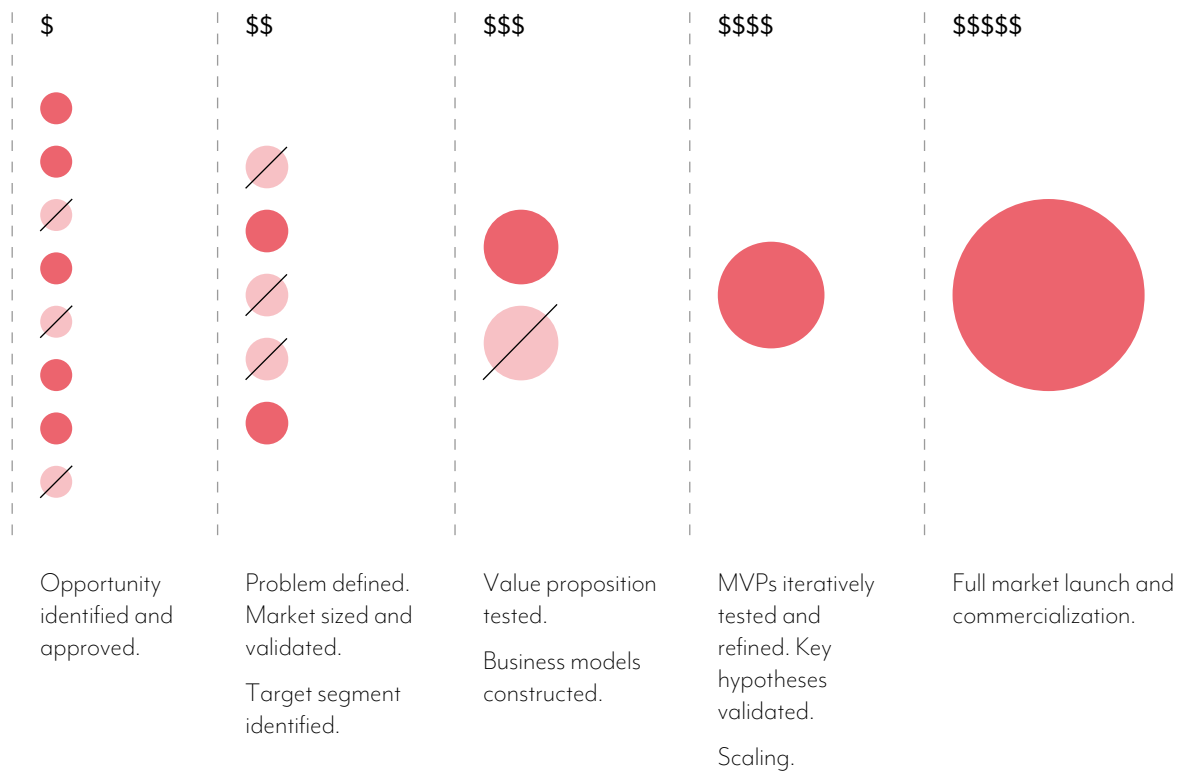


Figure 6. The metered funding model (Ries, 2017)

## Differences of design thinking and lean startup

From the research it became quite apparent that there were several common elements and concepts where those two frameworks overlapped. In their study Mueller and Thoring (2012) compared design thinking and lean startup and analysed how they differ from each other. They found similarities from how the both methods focus to create market-proven innovations, having users and stakeholders in the center in validating concepts and highlighting the culture of rapid experimentation with early prototypes and fast iteration cycles. The major differences between the two strategies instead, were found in their approach at the starting point of the innovation process and how progress was being evaluated along the way. In general, the initial challenge in design thinking can be more vaguely defined, whereas in lean startup there is usually already a defined business case.

Furthermore, design thinking aims to generate ideas from extensive qualitative user research where it uses a various set of techniques to synthesise insights into user needs to define what should be done next. Lean startup instead does not have such sophisticated research methods in place which is one reason why Müller and Thoring suggest design thinking being more suitable in a situation where the initial problem is still somewhat ambiguous. In the other hand, unlike design thinking, lean startup has tools to start building business model around the concept early on in the process and it relies more on quantitative metric-based evaluation to validate the progress of the project. This makes the lean startup strategy an attractive option when the initial idea is already defined. Finally, Müller and Thoring point out that elements of both concepts are already frequently used simultaneously by designers and design agencies in their work. That is to say, it is not always clear to make the division which methods and tools stem from which framework. (Mueller and Thoring, 2012)

## Agile as a workflow for rapid innovation

Agile is originally an approach from software development which has recently gained popularity as a workflow model in the wider innovation management context. Similarly to design thinking and lean startup methodologies, agile is also an incremental and cost-effective development method where small teams work in close collaboration with customers and stakeholders to create high-value products through continuous iteration. The method has been found to improve early stage innovation process challenges (fuzzy front-end of innovation) by providing tangible outcomes which bring transparency to the process and help to communicate knowledge in general and understanding about users inside organisations. (Hannola, Friman and Niemimuukko, 2013)

In agile development the teams work incrementally through sprint loops where always a new set of features or updates are prioritised and implemented in each sprint to build the minimum viable product. The results are always reviewed with the stakeholders between the sprints and new objectives for the next sprint are decided. In addition to sprints, agile processes have few other fundamental ceremonies and tools which help the team to iterate, get feedback and decide to change direction. *Standups* are short daily sessions where team members share their tasks and track the process, whereas *retrospectives* are moments for reflection and collecting learnings from the recent development. The progress of work is followed through backlogs and dashboards which help to organise and prioritise tasks and spot new opportunities. (Sherman et al., 2017)

In design, agile has been mostly used in digital UX and UI design projects when the design process moves from concept to actual implementation of the product (Fig. 7) or in service design as a rapid method to move from ideas to validated concepts and MVPs in a short period of time. Usually agile is mostly visible in the rhythm of the workflow where the development process advances through multiple sprints. The tendency to place agile method to the point when the concept is taken into the production is also visible in the digital innovation model from Gartner (Fig. 8) where all three innovation frameworks have been arranged in a consecutive order. In this model design thinking is used to define the problem after which lean startup and agile take care of the systematic iterative development of the concept (Gartner, 2017). The role of agile here compared to lean startup is to support the process when the development becomes more technology-focused.



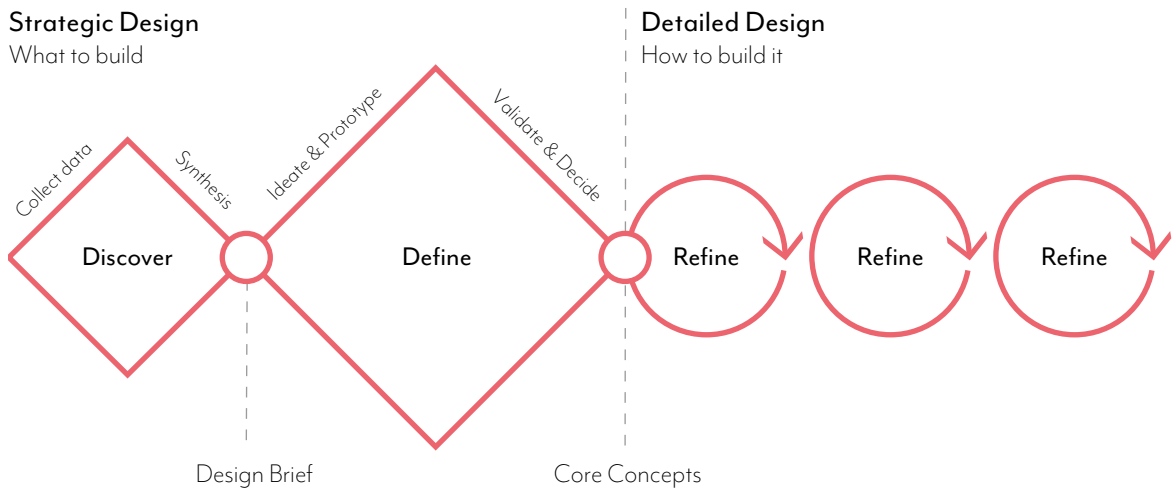


Figure 7. The Idean Design Framework as an example of combining the Double Diamond design process model and agile development (Idean, 2019)

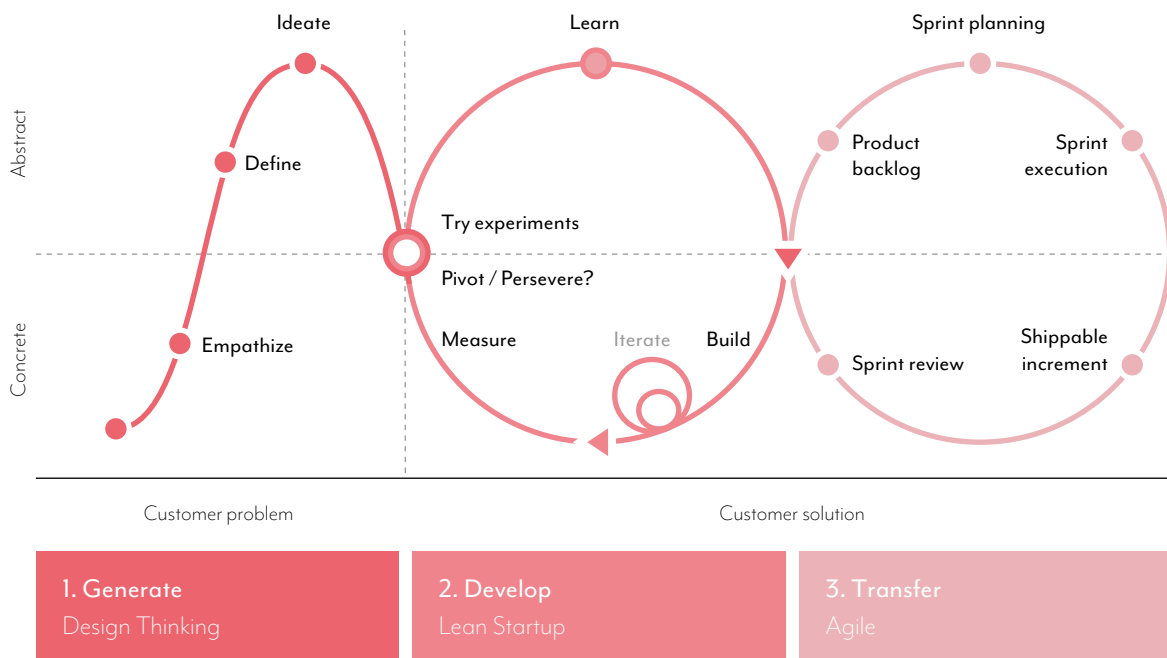


Figure 8. A model for leveraging design thinking, lean startup and agile in enterprise architecture for digital innovation (Gartner, 2017)

# Facilitating design in corporate environment

***The final chapter of the literature review focuses on the deployment of design capability in a large organisations and challenges that designers and managers might encounter when introducing design and innovation processes. Furthermore, the chapter discusses about the benefits of learning innovation and creativity skills and looks at some experiences of training non-designers to use and apply design methods in their work. Finally the research will look into some examples of what kind of skills and practices have been recognised to be beneficial for people who facilitate design or innovation programmes in large organisations.***

## Challenges and barriers for change

It is common that introducing non-conventional ways of working and radical innovation initiatives overall often struggle in large organisations due to misalignment between new and existing procedures and internal resistance for change. Similarly, the challenges of deploying design in large organisations have been shown to be related to known barriers of radical innovation. Nonetheless, for example design thinking has been detected to face some unique challenges compared to other new product development processes (NPD) which continue to appear even if design thinking has been used in the company for some time (Carlgren, Elmquist and Rauth, 2016; Seidel and Fixson, 2015). In their extensive literature study about experiences of using design thinking in large companies, Carlgren, Elmquist and Rauth found seven types of challenges typical for design thinking in organisations (Table 2). (Carlgren, Elmquist and Rauth, 2016)

Conway, Masters and Thorold further argue that design thinking is failing to consider the systemic complexity and power dynamics in organisations that eventually prevent ideas of getting executed. They recognise the fault being in '*linear fallacy*' of the design process which, in their opinion, doesn't prepare the innovators to get through the internal barriers of change that organisations inherently have relating for example to politics, bureaucracy, regulations and culture. (2017)

Especially opposition from within the organisation has been found to be a common hindrance when implementing new innovation frameworks. In the of GE and lean startup case, the first employees trained to use the new method encountered lots of rejection as they went back to their own business units and tried to implement the same methods there. No one understood the idea behind the new

Type of challenge	Established innovation barriers that match challenges linked to the use of design thinking	Challenges that seem unique to design thinking
Misfit with existing processes and structures	Iterative exploratory approach clashes with linear, efficiency-oriented processes. Lack of resources for radical innovation. Infrastructure barriers and challenges with hand-over. Interface problems with separate innovation function.	Focus on gaining deep user insights and a qualitative approach lead to a lot of time spent on ethnographic studies and synthesis of large amounts of data. Resources for this type of user research and testing prototypes may be hard to acquire.
Resulting ideas and concepts are difficult to implement	Implementation of innovative, out of the ordinary concepts is challenging. Output range across silos – unclear responsibility. Difficulties to break out of old 'frames', failure to realize that existing offer is obsolete.	Due to insights gained from deep user research and the active focus on reframing problems, resulting concepts are different in character than what is usual in the organization. These often radical ideas and concepts are difficult to implement. Difficulty to balance innovativeness with business and viability.
Value of design thinking is difficult to prove	Measuring value in innovation projects misses the value of concept expansion and knowledge development. Transition to new mindsets/routines outside of the dominant cognitive frame entails a need to legitimize ways of working.	To legitimize the use of DT, firms often look at the outcome of projects where DT has been used. As the resulting ideas in themselves are different, showing the value of the use of DT presents a double challenge.
Design thinking principles / mindsets clash with organisational culture	Risk-averse cultures, fear of failure. Interpretative vs. analytical mindsets. Low ambiguity tolerance. Product planning limits scope.	Showing rough, ugly mock-ups internally and to users is against norms. Fun is perceived as neither serious, nor productive. Difficult to balance 'doing things differently' and not alienating people, such as the design of the designated work spaces.
Existing power dynamics are threatened	Tension between separate innovation team and mainstream development. Radical innovation challenges existing skills and job security of individuals.	Claiming that 'Everyone can design' is challenging for designers and design functions as it threatens their professional roles. Decision-making in teams leads to a shift in power, reducing authority among some managers.
Skills are hard to acquire	Lack of the right competencies for innovation.	When working in DT projects, making sense of deep data, framing and reframing the problem, knowing when interviews probe deep enough, when to stop iterating etc., are complex and critical steps. Such knowledge/skills to use particular design methods may be hard to acquire for firms not accustomed to this competence area.
Communication style is different	-	Vocabulary from the design world as well as artistic expressions and artifacts are less accepted. Subjective user insights are not enough to convince evidence-driven managers. Some terms (e.g., 'iteration' and 'prototype') have other meanings.

Table 2. Types of challenges linked to the use of design thinking (Carlgren, Elmquist and Rauth, 2016)

methods, what they were doing and why, so the managers quickly realised they had to achieve much larger cultural change in order to let their employees to continue to use the new methods effectively. Luckily, the effect also works both ways as the managers and teams who had learned the new ways of working have proven to be irreplaceable in convincing other employees to join the movement. (Ries, 2017)

Likewise, a study discovered that top challenges when raising interest towards design thinking were about internal teams being hesitant to collaborate within the new framework and employees opposing the change or having doubts about usefulness of design thinking (Forrester, 2018). To address the issues related to diffusion of new ways to do innovation, Conway, Masters and Thorold propose a *third diamond* to be added to the design process for conducting a systems analysis to recognise possibly inhibiting barriers in the organisation and prepare designers to work around them (2017).

## Design for non-designers

This thesis can be thought to regard as much of the ability of non-designers to adapt design methods and mindset as it is about a professional designer's skills and competence, since in the setup of the case study programme the success of the first is directly dependant of the success of the latter. As discussed earlier though, the effort to democratise design has also sparked some discussion among professionals, as in what extent design skills can and should be taught to non-designers without oversimplifying the work of designers and design process too much. Nevertheless, the preconception in this thesis is that design and design thinking have some universal value what organisations and people from different disciplines can learn and utilise to improve their own work. Developing the design mindset have even been mentioned to be one of the most important work skills of the future (Gohrst, 2014). As the idea is not to train everybody to become designers but to equip managers and employees with a new perspective, the important question is what are the basic skills and learnings that non-designers should adapt in order to benefit from design in practice? Furthermore, it is important to consider how they should be communicated to the non-designers.

In their book '*Innovator's DNA*', Dyer, Gregersen and Christensen highlight that innovation and creativity are not exclusive to only few individuals but skills that can be learned. They have summarised the required qualities of an innovator into five *discovery skills*. An innovator should be *associating* different ideas and practices, constantly *questioning* conventions and the status quo, *observing* environment to identify problems, *networking* with people who can provide complementary knowledge and having a low threshold for *experimenting* ideas to gain new learnings. (Dyer, Gregersen and Christensen, 2011) This resonates directly with the user-centered, iterative, experimental and collaborative nature of design thinking where the ultimate purpose is about solving customers' problems (Design Council, 2011).

Indeed, one approach is to communicate learning of design methods as a way to improve people's capability as *innovators* rather than explicitly training design or design thinking per se. In a 2018 article, Liedtka presents design thinking as the next social technology to take innovators to the next level by helping to unleash creativity, increase engagement and improve processes. In the following table, Liedtka proposes how design thinking counteracts to the different challenges and biases that innovators often face in innovation processes. (Liedtka, 2018)

Problem - Innovators are:	Design thinking	Improved outcome
Trapped in their own expertise and experience	<b>Provides immersion</b> in the user's experience, shifting an innovator's mindset toward...	A better understanding of those being designed for
Overwhelmed by the volume and messiness of qualitative data	<b>Makes sense</b> of data by organizing it into themes and patterns, pointing the innovator toward...	New insights and possibilities
Divided by differences in team members' perspectives	<b>Builds alignment</b> as insights are translated into design criteria, moving an innovation team toward...	Convergence around what really matters to users
Confronted by too many disparate but familiar ideas	<b>Encourages the emergence</b> of fresh ideas through a focused inquiry, shifting team members toward...	A limited but diverse set of potential new solutions
Constrained by existing biases about what does or doesn't work	<b>Fosters articulation</b> of the conditions necessary to each idea's success and transitions a team toward...	Clarity on make-or-break assumptions that enables the design of meaningful experiments
Lacking a shared understanding of new ideas and often unable to get good feedback from users	<b>Offers pre-experiences</b> to users through very rough prototypes that help innovators get...	Accurate feedback at low cost and an understanding of potential solutions' true value
Afraid of change and ambiguity surrounding the new future	<b>Delivers learning in action</b> as experiments engage staff and users, helping them build...	A shared commitment and confidence in the new product or strategy

Table 3. How design thinking helps innovators to improve their innovation processes (Liedtka, 2018)

As suggested by Seidel and Fixson, it is important for non-designers to learn both the design thinking mindset and practical use of tools (2015), but as already noticed in the discussion about barriers and challenges, people's cautious attitude towards new kind of behaviour requires special consideration. One important stereotype to overcome for non-designers is the conception about design process as some unorganised series of random activities with lots of post-its. The iterative and non-linear nature of design process might appear as chaotic and disarrayed for many, and key design activities such as close interaction with customers, objectively considering different viewpoints, building prototypes and planning and executing experiments, requires an open-minded attitude to look for something unexpected and change direction if necessary. Uncertainty is a natural element of design what designers have grown to accept but it is a considerably different routine for most people used to analytical thinking and predictive processes in traditional organisational environment. Therefore, it is essential to understand that design methodologies can be hard to adapt for non-designers since it takes them into an extremely foreign territory where they have to act against their learned normal behaviour. (Liedtka, Salzman and Azer, 2017)

One of the hardest challenge for the participants learning design skills is in building up their creative

confidence in using the process and tools. Liedtka, Salzman and Azer and emphasise the need for rigorous structure in both process and methodology when training design for less experienced non-designers. As a general rule they propose that if participants get lost during the process, more steps should be added to the process and respectively, also tools need to have clear instructions and templates to avoid ambiguity and therefore frustration and rejection. The idea is to provide robust guardrails and psychological safety to start working with design methods which they can start to apply more freely once the basic principles have been internalised. (Liedtka, Salzman and Azer, 2017) In the other hand, Seidel and Fixson emphasise that it would be important for non-designers to understand the flexibility of the design process and how it allows iteration inside the process framework according to the situation (2015).

All in all, when considering what skills and methods of design should be trained to non-designers, it seems that the unique features of design are also many times the hardest to convey and it is a matter of balancing between what people are able to digest and how much of design's full potential is being utilised. Furthermore, the level and quality of professional support, resources and organisational support and culture play a huge role in to what extent design can be adapted and whether it will be perceived as a mere distraction to their work by subjects of the training or as a fresh new way of thinking that democratises innovation.

## Applications of facilitator roles

Facilitation of teams in co-creation sessions and workshops are especially common in service design, where the designer usually has the responsibility to organise and run the design process for the participants and make sure activities are leading the team towards the project objectives which are further validated with the stakeholders. In design thinking and lean startup, facilitators are often called as coaches who are both the moderators of the innovation process and have responsibility to guide the team members in learning new methods and ways of working. In leadership literature external coaches are linked to a modern idea of *empowered teams* which transfers much of the traditional leadership responsibilities to the members of the team where the leader has a more the facilitative and motivational role (Rapp et al., 2015). Team coaches are further described as neutral experts within the team “...aimed at improving team psychological empowerment, processes and performance.” and as “...an outsider who guides or facilitates the team but is not involved in executing its work.” (Rapp et al., 2015, pp. 110 and 112). Next, the research looks at how facilitator and coach roles have been defined by different parties and frameworks in terms of skill requirements and competence. (IBM, 2018)

In the Enterprise Design Thinking framework IBM has created a system of competence *badges* which represent different capability levels employees and managers can achieve and qualify through experience and training based on set criteria. IBM measures the design thinking competence with an eight grade scale of which each have a defined list of responsibilities and skills that the person needs to fulfill (full comparison of roles and criteria in Appendix 2.). The criteria for *coach* badge emphasises collaboration, ideation and prototyping skills and has less focus on scaling, storytelling and scoping compared to *advocate* and *leader* roles in the more strategic end of badges. Coach's responsibility is to support the teams through all the phases in the design process, help to practice design research and lead design thinking activities by providing feedback on team's decisions, guide to select and use

the right tools, synthesise insights into findings, give advice in building prototypes and motivate team members to participate.

One key difference between the roles of coaches and advocates is that the advocate is clearly an outside member to the team who is mostly present at milestone meetings and handles most of the communication and contacting with clients and stakeholders. Advocates also take responsibility about identifying and scoping the initial ideas that are taken into the design process and the coach's role starts when those ideas need to be prepared by scoping and validating outcomes and problem statements with stakeholders. (IBM, 2018)

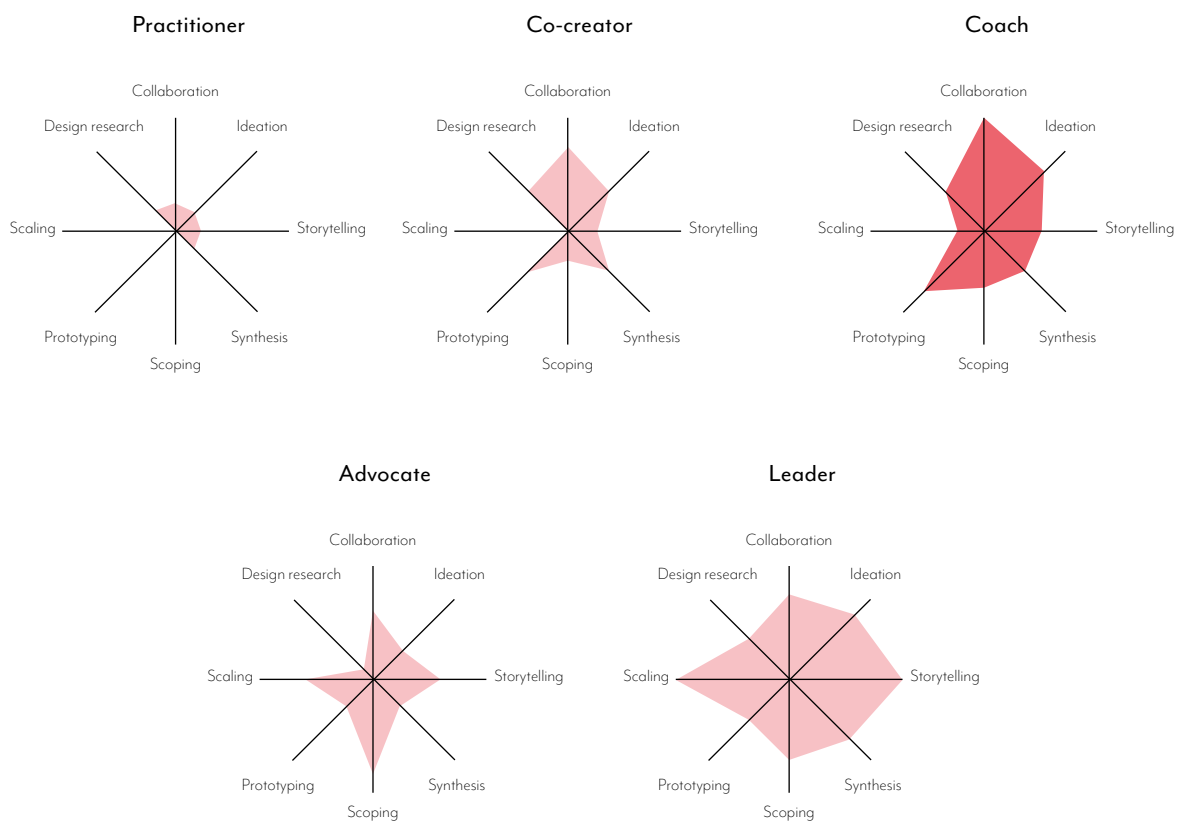


Figure 9. Required skill criteria for each role in IBM design thinking framework (IBM, 2018)

Having networks of mentors and advisors to coach independent teams is an integral part of the startup world and also large organisations sometimes simulate similar conditions for their internal business initiatives for guidance and mentoring in dedicated accelerator or business incubator programmes. As a popular method used in such a context, coaches and coaching programs are also common in the lean startup process. In *The Startup Way*, Ries emphasises the importance of having early and frequent customer contact. As has been discussed earlier, this is not usually a natural practice for participating team members and there might be strong assumptions related to what customers think and want. Therefore rather than trying to directly tell the team what to do, Ries suggests to respect their

initial assumptions and instead look for opportunities to design experiments where they can put those assumptions to test. The point is that the coach should not be telling to a committed startup team what to do, but allow them to maintain the leadership of the project while the coach can steer and challenge them to discover the right learnings themselves.

Similarly to design thinking, also Ries highlights that all coaching programs where lean startup is utilised are going to be different depending on the organisation. Furthermore, the need to have coaches representing each of the three already familiar areas of key competences being innovation (design thinking and agile prototyping), business (sales and marketing) and technology, have been identified. Overall, a coach should make the team understand the inherent uncertainty of the innovation process and how to reduce it by planning the process as a series of experiments which contribute to progressive learning. (Ries, 2017)

Another design or rapid innovation method where the facilitator has an important role, is the five day Google Ventures (GV) design sprint which has been covered in a guidebook by Knapp, Zeratsky and Kowitz (2016). The approach to facilitation there is more pragmatic and operative and aims organise participants to work in an effective way within a short amount of time. As full-day workshops usually are, the five working days in GV design sprint are very intensive and require persistent control of the process in terms of managing time, conversations and collaboration. Therefore, the facilitator should be confident to lead meetings where they can quickly synthesise and record key ideas amidst team conversations and make sure that all members have a shared understanding of all important topics.

As the schedule in workshops is usually very tight, the facilitator has to be able to set strict time limits and be firm with the team to make sure those are followed. Managing the pace of work during the workshops is also important in terms of keeping the participants' energy levels in balance for them to work efficiently throughout the day. For example, having participants to make multiple decisions during a day consumes lots of energy from everyone so the facilitator should limit those moments only to the important ones. Moreover, such details as remembering to have frequent breaks and snacks and avoiding a heavy lunch might have a noticeable impact on the focus that the participants have during the workshops. (Knapp, Zeratsky and Kowitz, 2016)

Design Council categorises designer roles in organisations in technical specialists, designers working in cross-functional teams, design influencers and design leaders who articulate high-level visions (2014). According to the above-mentioned examples, design facilitators combine elements from the latter three as they actively work with the team, guide them to use the methodology and tools and help to create, follow and, if necessary, pivot the strategy and vision. Furthermore, they emphasise the responsibility of maintaining the focus of the team members and being able to help the team by synthesising and challenging their thinking. Some diversity can be noticed in how different frameworks advise to interact with the team and how deeply the facilitator or coach should be involved in implementing the activities during the design process. For example, in IBM design thinking the coaches were responsible of scoping and planning of the final outcomes with stakeholders and actively provided feedback to the team, whereas in lean startup and GV design sprint the facilitator was more or less expected to abstain themselves from hands-on activities and decision making of the team. The difference is interesting from the perspective of leading empowered teams as the facilitator has to position themselves somewhere along the two axis in terms of how much they take leadership responsibility and whether they are perceived as close members of the team or as clearly external advocates.





# Case study: The ProCorp business accelerator programme

*The initial high level ambition behind this thesis was to study how universally applicable design process and methods actually are in a real life setting, and more specifically, what kind of skills and competence are relevant when design is applied in a very high strategic level. The preliminary research on that area showed that there was a lack of detailed case examples and well documented experience-based knowledge which would have elaborated this topic from a more practical perspective. Therefore, to provide a concrete example from the field, this single case study research about three rounds of design-infused business accelerator programme was selected as an empiric base for the research. It is of course, only a specific type of example of design applied into a strategic context but it gives an opportunity to analyse different aspects of strategic design work from a very practical perspective and from both sides of the table. The programme is also first and foremost a business development initiative which has not been particularly labeled as a design project, so it offers a good backdrop to see how design performs on a neutral ground. Following chapter will shortly introduce the background and the stakeholders involved in the business accelerator programme, the overall programme structure and the research methods.*

# Background

**Idean** (part of Capgemini Invent since February 2017) is a global design consultancy firm who offers services for product and service design and for design-led new business creation and transformation. Most of Idean's projects are related to creating digital experiences and solutions for their customers, but they also offer expertise and processes for their clients to adapt new ways of working and foster their own innovation culture by learning lean design processes and design thinking. I have been working at Idean as a UX Designer for 2,5 years (in early 2019) where I have been able to observe the development of the design industry especially in its digital domain and through different strategic design projects, which heavily influenced selecting this topic. The case study project and focus for the thesis were selected through several discussions with Idean Finland's Strategy team lead. At the same time, the client organisation was contacted to request their approval to use the business accelerator programme as a case study and have access to the team members who participated to the latest iteration of the programme.

**ProCorp** is used as the fictitious name of the company in the case study. This is to make sure that no sensitive information would be connected to the corporation and to ensure the anonymity of the interviewees. ProCorp is a global industrial machinery manufacturer employing over ten thousand employees worldwide and operating through its several business areas. The company is mostly known for manufacturing of physical products, although they are currently going through a digital transformation as software and digital solutions are becoming increasingly important part of their portfolio. The company culture is strongly engineering oriented and technology focused and, at the moment, there is no established design function in the organisation. ProCorp's industry has also been affected by the global market trends of increased competition and digitalisation, discussed in the literature review, which are pushing organisations to develop more proactive and agile innovation processes. In ProCorp's case, this is visible in their current strategy which places customer centricity, intelligent solutions and thinking their role as service provider rather product manufacturer, as central drivers for the future growth.

The business accelerator programme is ProCorp's internal initiative to create a systematic process to explore and validate new business opportunities across the whole organisation and its different business areas. The main goals of the programme are to increase the success rate of new business concepts and to radically decrease the time that promising ideas take to develop before they reach the market and start to generate revenue. The target has been to decrease time to market considerably. It is both a shortcut to get ideas faster towards execution and to filter out the ones that do not prove enough business potential, while collecting valuable learnings on the way. Teams that participate to the business accelerator programme are all composed of ProCorp employees coming from different

disciplines in their respective business areas. The desired outcome for a team participating in the programme, is to refine their initial idea into a business concept whose value proposition and business model have been defined and validated with the customer, and which has a clear roadmap from concept to market. Based on the outcome, the management should be able to make a decision about the further development and funding of the concept. In addition to that, the programme is also intended to offer a platform for the participants to collaborate and share their experiences and what they have learned by interacting with the customers during the process. The broader cultural agenda is that the participants would then adopt the new tools and ways of working and act as change agents in their own business units in a transformation to more creative and dynamic organisation.

Business opportunities and teams for the programme were selected from a pool of draft ideas coming from each ProCorp business area after screening them against a certain criteria. First of all, the idea should have a passionate concept owner who can dedicate most of their time for the programme. Sufficient time allocation concerns also the other team members. The team would ideally be composed of 3-6 people from different competences and they should have some contacts available to get access to the customers which is an essential element for success in the programme. The business opportunity itself was evaluated based on its business potential, alignment with the business area's strategy and the level of maturity.

Idean's role was to design the programme structure, what kind of methods and tools would be used and then facilitate the process for the participating teams. The planning was done by Idean's service designers in a close collaboration with the person responsible for arranging the programme from ProCorp. Facilitation of the process included offering an active support for the programme teams and managing the programme practicalities and communication in cooperation with ProCorp. In total, five designers from Idean have been participating in the programme as facilitators over the course of three accelerator programmes, supported by a person from sales and a project manager who have helped in programme and stakeholder management. Apart from collecting feedback from the members of one team, I personally did not participate to any of the three programmes.

# Programme setup and structure

In high level the 10-week programme structure has remained somewhat similar during all the three iterations, while different methods, practical arrangements and tools have been used based on learnings from previous programmes, individual team needs and requests by the client. The process model borrows elements from design thinking, lean startup and agile but it is many times hard to make a clear distinction which comes from which.

The supporting mechanism throughout the programme is to validate different aspects of the business idea together with the customer in order to finally deliver a concept which is desirable for customers and other stakeholders, technologically feasible and economically viable. In a nutshell, the programme begins with preparing the team and their business idea for the process, after which the 10-week programme takes the team and their concept through three main stages of validating the problem, the solution and the business, and finally ending the programme in a pitch presentation for corporate and business area management. Each of the three stages follow a weekly cycle where the teams first develop their concepts based on initial assumptions, then validate those with the customer and finally refine the concept based on what they learned before the next stage. The teams have a certain set of final deliverables for the programme but otherwise they can use any methods and tools that are most suitable for taking their concepts forward.

Next, the purposes and key activities of the different phases are described in a more detailed level:

## **Preliminary programme**

Introductory phase starts with meetings and a pre-workshop to get the team aligned with the purpose, goals, responsibilities, materials and practicalities for the incoming weeks. Team members get to meet each other and their facilitator who will be supporting them. The teams are also asked to prepare a presentation about their business opportunity for the other teams in the first kick-off workshop and schedule first customer visits and interviews for the validations.

## **1. Explore and validate the problem - 3 weeks**

The programme starts with a kick-off workshop where all teams meet for the first time and introduce their business opportunities to each other. During the first three weeks, the teams are expected to define the actual problem their original idea is aiming to solve, and validate that with the potential customers before moving forward to the next phase. The main activities here are listing of assumptions that the team has concerning their idea, planning and designing the customer interviews and building a first version of their business model with a validated value proposition for the selected customer segment.

## 2. Create and validate the solution - 3 weeks

Here the team starts with ideating different solutions that would solve their customer’s problem and decide on one that would seem to be the most suitable option. The solution should then be build into a rough prototype or mock-up, that crystallises how the solution answers to the customer’s problem. As in the problem validation phase, the team is expected to schedule a set of customer meetings where they validate their assumptions and solution with the customer and adjust the concept accordingly. Other activities include thinking in detail how the solution would work as a product or service, check its technical feasibility and updating the business model.

## 3. Define and validate the business - 3 weeks

The purpose of this stage is to define the business logic of how the solution will generate revenue in the future and to provide already some preliminary financial projections. The teams build a business case around their solution which is again validated with the customer by using the prototype or mock-up. After this, the team should know approximately how much the customer is willing to pay for their solution and how it will scale into a viable business.

## Prepare final presentation - 1 week

In the fourth and final workshop, the teams finalise their deliverables, which include the prototype or mock-up of the solution, validated business model and a go-to-market plan, and build a presentation deck. Teams pitch their solutions for a group of ProCorp managers who then decide how each concept will be continued after the programme.

1. Explore & validate the problem			2. Create & validate the solution			3. Define & validate the business			Present
Create <b>Workshop 1:</b> “Love the problem, not the solution.”	Validate Validate your assumptions regarding the problem.	Refine Refine problems worth solving & customer value proposition.	Create <b>Workshop 2:</b> “Prepare to kill your darlings.”	Validate Validate your solution to the problem worth solving.	Refine Refine your solution and service vision.	Create <b>Workshop 3:</b> “Show me the money!”	Validate Test your prototype and validate your business idea.	Refine The details of your solution.	Create <b>Workshop 4:</b> Final presentation
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10

Figure 10. ProCorp business accelerator programme structure

The working rhythm of the programme is built around four intensive two-day workshops arranged every third week, where the team members travel to the same location to work on their concept. Between workshops the teams work independently with the support from their own facilitator (coach) who provides weekly activities and goals which the team is expected to accomplish during each week and before moving to the next stage in the programme. All teams are expected to follow the same programme schedule. Apart from the workshops, communication is mostly done via video calls since facilitators and different team members might be in different locations. Workshops are always scheduled into the beginning of each stage so teams can share their learnings, experiences and progress and have an efficient start for the next phase. During the programme, teams have a project budget to use on their activities, such as building the prototype, and can get support from different internal and external parties according to their needs. Following support resources are available for the teams during the programme:

### **Coaches**

Coaches facilitate the working of the teams throughout the programme by following their progress and helping them to reach their goals in each stage. They introduce new tools and methods based on the team's needs and provide guidance in their use. In workshops and weekly phone calls, coaches ensure that required activities are being done and use their expertise to support the team in any way possible. The idea is that the coaches work very closely with the team but do not necessarily do the work for them.

### **Mentors and Sponsors**

Mentors and Sponsors are people from ProCorp and its business areas who comment and spar the teams during the concept development. Mentors have a more active weekly role where they are focused to stress the concept's business model or a certain area of competence, whereas Sponsors represent the business area's interest towards the team's concept and are willing to help when necessary.

### **Experts**

Experts can be internal or external persons who have deeper knowledge about specific topics or domains. They can provide insights for example, about certain technologies or markets which are important regarding the team's concept.

# Research design and methods

This thesis is a qualitative single case study research which has elements of descriptive and phenomenological research methods and uses literature review and interviews for the data collection. As mentioned earlier, the ProCorp business accelerator project was selected as the case study because it provides an interesting context and perspective to study strategic design through hands-on experiences of different stakeholders. The qualitative descriptive approach allows to summarise the events experienced by the participating individuals and groups in a descriptive manner and organise the data in a way that is most relevant for the audience (Lambert and Lambert, 2012). This is helpful when defining the research hypotheses is not completely clear but the phenomenon itself can be examined in a somewhat structured way. As in the case of the business accelerator process, there are already certain elements and assumptions in place which we know are more or less legitimate, but the presentation and level of granularity of the phenomena is inadequate for the selected audience. In turn, the phenomenological element in the research emphasises understanding of human behaviour and essence of the lived experience around the phenomena (Simon and Goes, 2011). This is an important part of the thesis, since it aims to understand what meanings people have based on their descriptions about the phenomena for certain themes such as learning new ways of thinking and topics like design. This research is designed to follow the good practices of case study research and analysis and recognises the critique about the caveats of the single case study method due to its i.a. limited sample size, subjectivity and biased case selection (Kohn, 1997).

In the early phase of the thesis, when still formulating the main research question, the focus of the research was more process oriented to study the programme as part of a larger innovation management paradigm. However, after some discussions the focus shifted to examine more the role of the designer in the process. This direction was selected because; a) there is already plenty of research about innovation management and the diffusion of ideas in large organisations whereas the role of designer as a facilitator for business development has not been very widely covered, b) a single case study would have provided a too limited sample to complement the existing research in innovation management, and c) it would have been too difficult to gain access to the right people and sources of data in ProCorp organisation.

After preliminary research it became apparent that it was going to be difficult to find examples that could have been easily compared with the case study in the similar level of detail. Therefore, the literature review is used to collect information about the models, best practices, challenges and earlier experiences of the frameworks that have influenced the design of the programme, such as design thinking and lean startup. As those frameworks themselves are comparatively new also to many organisations, the literature review sought to introduce the most recent references available. Also references related to the ProCorp's particular industry sector was used whenever possible.



Findings from the literature review provide a base of knowledge to recognise similarities and differences from the insights drawn from stakeholder interviews. The idea is to examine how the elements of the current programme and experiences of the participants compare with empiric knowledge of related frameworks and known theories. The aim is not to dissect the programme process into pieces and try to categorise them according to which framework or model they are based on, but to recognise whether those applications could be done better or find new process elements to improve the current shortcomings. The Idean designers who worked in the programme as coaches are in the centre of this thesis in terms of the final research results. However, to get more perspective on their work, also other stakeholders who actively participated to the programme were interviewed. Together with literature review and interviews from different stakeholders, the research seeks to paint a holistic picture of the phenomenon based on different data sources.

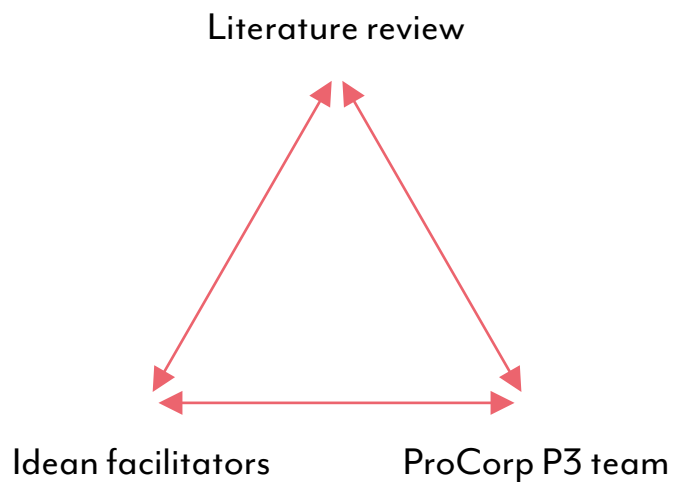


Figure 11. Research data sources

The objective of the research in this thesis is to build on the experiences and learnings of the participants in the design-led business accelerator programme and to produce an improved general structure of it. On top of operational activities, the new programme model includes mapping of required competences from the perspective of designer who wishes to engage on planning and running such a process in a similar setting.

## Stakeholder interviews

Semi-structured interviews are used to gather detailed data about the experiences of individual stakeholders who participated in the programme. This interview approach is based on open-ended questions where the researcher can collect experience-based data in a organised manner, by steering the conversation inside a broader framework of themes and topics. This is deemed important in case study research because it allows both standardised and flexible protocol where critical components can be formed into modules of questions, which makes the data easier to compare (Kohn, 1997). An interview guide based on literature review and preliminary discussions with stakeholders was created to follow these principles (Appendix 2).

Altogether 13 interviews were conducted of which seven were people from Idean and a team of six ProCorp employees. Five coaches and two persons from programme management from Idean were interviewed first to gain better understanding of the project since they already had gathered feedback from the teams and client in the first two programmes. Idean interviews lasted for one hour or occasionally a bit longer. With some interviewees, valuable information also came from more informal discussions after the formal interview was over and the recording was stopped. ProCorp team members were interviewed in their premises in half an hour long sessions each. Being in the same room with the interviewee and having the discussion in their native language was important to capture their authentic reactions and to maintain more natural interaction. Therefore, all interviews were conducted face to face except with one coach and one ProCorp team member who were interviewed via video call. The interview language was Finnish except for one coach and two team members which were conducted in English. All interviews were arranged as private sessions to ensure anonymity and open feedback. Interviews were recorded and later transcribed, where the data was preliminarily categorised based on the questions in the interview guide. Following stakeholder groups were interviewed:

### Facilitator - Coaches

Designers from Idean Finland's Strategy team who have participated as facilitating coaches in one or several of ProCorp business accelerator programmes. Coaches tell about their first hand experiences and what does the work require professionally in practice.

### Facilitator - Idean programme management

A Project Manager and a person responsible of sales and account management from Idean who supported the coaches in programme management and communications. They can complement the experiences of coaches by providing a perspective from Idean and the customer point-of-view.

### P3 project team - ProCorp employees

A team of six ProCorp employees from one of the business areas, who attended to the third business accelerator programme in late 2018. They provide another practical field level perspective for the process of the programme.

Interviewees	P1	P2	P3
<b>Idean coaches</b>			
Senior Service Designer A	X	X	
Lead Service Designer	X	X	X
Director, Business Design	X	X	X
Head of UX	X		
Senior Service Designer B			X
<b>Idean programme management</b>			
Director of Growth and Strategy	X	X	X
Project Manager	X	X	
<b>ProCorp project team</b>			
Director, Customer Innovation			X
Offering Development Manager			X
Technical Expert			X
Technical Manager			X
Software Engineer			X
Digital Business Designer			X

Table 4. Interviewees by role and which programmes they participated

In general, each interviewee was asked to reflect their personal expectations and experiences about the programme and how do they see it should be developed in the future. As in open questioning technique topics can never be fully pre-determined (Flick, Von Kardoff and Steinke, 2004), following collection of topics and questions risen from literature review and preliminary discussions were used as a basis to create the final interview structure (Appendix 2).

### **Programme structure**

- Understanding the key challenges of the participants in the programme and how those could be tackled.
- Collecting feedback about each stage of the process.
- How did the stakeholders manage the balance between core elements of the programme (design, business and technology and desirability, viability and feasibility) and what was the coach's ability to support teams to achieve them?

### **Facilitation**

- Similarities and differences in the experiences of facilitators and team members.
- Key challenges in managing the team's work.
- Key challenges in working with the client organisation.

### **The role of design and the designer**

- Were there similar challenges in the case programme as there are in general in innovation management and using design thinking?
- How different process frameworks were visible in the programme (design thinking, lean start-up, agile and service design)?
- What are good ways to facilitate learning of design and design thinking for non-designers (tools and methods)?
- What is the role and value of design in a business accelerator programme?
- What elements form the designer's identity in the business development process?

## **Data analysis**

A thematic data analysis method was used for analysing the interview data. Analysis started with creating analytical categories on the basis of topics and aspects discovered from the interview discussions and reading through all interview transcripts. After first draft level categories were formulated, the data of each transcript was systematically processed and classified under the categories using the coding method. As the coding of transcriptions progressed, the categories were continuously revised if better formulations of categories arose. All three interview groups were classified and analysed separately from each other. (Flick, Von Kardoff and Steinke, 2004)

Finally, four overarching themes were identified from the results - *'Key activities'*, *'Process'*, *'Expertise'* and *'Programme setting'* - which were used to further group and summarise the data to support cross case analysis (Appendix 3).



# Findings

*In this chapter, the four themes that emerged from the data analysis were used as a guiding framework to discuss the main research findings. The findings were composed of results from a cross case analysis of the individual interview groups. After selecting the most relevant and interesting topics considering the research questions, four core themes were formed - 'Creating conditions for success', 'Exemplify, inspire, involve and challenge', 'Access to the right knowledge' and 'Purposeful programme environment'. The first section presents what kind of preliminary activities and interaction between facilitating party and client organisation were seen as critical to organise such a process successfully. The following second and third sections discuss about common challenges facilitators experienced in managing the teamwork and how to provide the right support for teams during the process. Finally, the fourth section discusses more broadly about the business accelerator approach and the role of design and designers in it.*

# Creating conditions for success

Based on the feedback that has been collected from teams after each programme, the participants have been mostly very pleased with the programme and the progress they had achieved during the process. In general, interviewees were unanimous that the basic structure of the programme was working for the purpose it was created and the main objectives, and the methods used to achieve them, were justified. Nevertheless, the interviewees pointed out some key challenges where the facilitators need to pay attention to in order to ensure a valid development process and to create a successful learning experience for the participants.

Critical aspects resulting a team to struggle during the process were mostly related to the team members' expectations towards the programme, to the level of maturity of their initial idea and failing to prepare enough time for the programme. Wrong attitudes, too wide problem framing and insufficient resourcing were some of the key challenges that were usually revealed either immediately in the first kickoff workshop or during the first weeks of the programme. For example, during P1 and P2 some facilitators worked with teams whose members were either so short on time and resources that there wasn't any realistic chance for them to work on their concept or they weren't initially willing to use the methods introduced in the programme which hindered their progress in the programme. Another issue often mentioned by the coaches, was the wide variance in the maturity of the ideas selected into the programmes which made it sometimes challenging for coaches to steer the development of lower maturity concepts within the limits of the design process, and at the same time, take advantage of the team synergy benefits. As the process schedule is fairly intense, there isn't too much space to correct sudden issues during the programme, which puts a lot of emphasis to the programme planning and preparing the teams and their ideas. To help with this issue, facilitators suggested creating a clear criteria and more rigour for the shortlisting of the opportunities and composing the teams. They emphasised the importance to include a well defined pre-validation and team preparation process as an integral part of the programme which would also involve the facilitators from the very the early on. While such screening process and preparation meetings and workshops with teams have already been in place and were further emphasised for the P2, the issue still exists in some degree. Many of the coaches wished to have more influence in selecting which opportunities are chosen for the programme and how the teams are formed and prepared. It was pointed out that this would require more close collaboration with the client organisation and its different business areas.

Furthermore, preparing a good starting point for a team was said to be much about setting the right expectations and clearly defining the goals and purpose of the programme before the work starts. Both facilitators and team members admitted that the requirements for a business idea to pass the programme with "clean papers" were fairly demanding. For this reason, it was important to communicate to the teams and business owners that all opportunities might not prove as valid business cases and that also this is a valuable finding in itself. After all, the coaches felt the programme did not really allow major pivoting if the business potential was not found and the team would be required

to return to an earlier process phase. Indeed, from the facilitator's perspective it would be better if ideas that are brought to the programme already had a certain level of maturity and proven business potential and more early phase ideas would have their own process. Nonetheless though, the concept owner of the P3 team saw potential in the programme's process and methods in general in helping to select the most promising ideas and improving the hit rate of the R&D.

***“We didn't want to pick-up any clear success story that would have been just reported through the programme” - Director, business area customer innovation***

Still, this doesn't take away the fact that ideas of different maturity require different development and support activities. Coaches pointed out that raw ideas need more research and concept crystallisation, whereas more mature ideas might have rather defined needs and should be developed in a different level of detail. It also matters whether the opportunity is a new product, a service or a business model. For the programme all this kind of diversity means that coaches have to tailor very different activities for the teams which creates complexity and hinders learning between teams if they work with very different kinds concepts. One suggestion to this was to have a separate programme for the ideas of lower maturity which would allow a more explorative approach.

As mentioned, the programme structure is not very flexible if the concept fails to pass one of the three validation stages. These situations required creativity from the facilitator in handling the disappointment of the team and keeping them motivated for taking a step back and finding a new interesting angle to work on. For example, one team who found out that their customers weren't willing to pay enough for their solution, eventually joined to help another team from the same business unit for the rest of the programme. Also the other P3 team faced the same situation in the final weeks in the business phase. The decision was made not to use time for all the final deliverables but instead show in the final presentation what they had done and learned during the process. It was clear that this wasn't an ideal end result for the team but still most of the team members felt they had had valuable learnings along the way and many acknowledged that as an expected risk in an innovation process. What also helped the P3 team to cope with the situation of not finding enough business potential in their concept was that the opportunity was linked from the early on to a broader strategic scenario, a context where they were able to contribute new learnings. Their idea was an important piece of a bigger puzzle but it just wasn't the piece that would necessarily bring in the business.

Continuing about setting the team's expectations, even more important was to ensure that the commitment and ambition of the team members were aligned with each other and with the design thinking/lean startup/agile -mindset of the programme. The team should have high motivation to work with the concept and accept that they also need to be open to try out new ways of working. Coach should meet the team and get to know their idea well in advance and together start to think what the concept still needs, what risks there are and what kind of additional expertise might be needed. Coaches also thought that it is important to start building the relationship of trust with the team before the first workshop to relieve some social tension from the kickoff day. In P1 and P2 there were teams



whose members hadn't worked together before and met the coach and each other the first time in the kickoff. This was considered to take away lots of effective working time when people needed first to get to know each other and get on the same page with their concept and team roles. Insufficient pre-programme team alignment also increased the risk to have too little diversity in the team competence or having individuals who have difficulties to work with each other.

### ***“I don't like post-its.” - a team member in a programme kickoff***

The P3 team was a good example of a well composed team where everybody mostly knew what to expect. Although in the end the team could not validate a viable business case, team members were generally happy with the experience as they knew there were always risks. In addition, the team was led by a very dedicated concept owner who had handpicked the team and was using the programme as an experiment to see if there was something that could be applied also elsewhere in the organisation. Attention used for composing the team and strong support from management resulted into a good team spirit and commitment throughout the programme.

Throughout all three programmes insufficient time allocation of the team members has been one of the biggest challenges. For a facilitator who is external to the client organisation, there are hardly any other ways to influence the allocation that team members are given than emphasising its importance for the programme and business area managers when planning the programme and selecting the teams. It wasn't realistic for some team members to push away major part of their normal work for several weeks which ended up some participants dropping off during the programme. The facilitator can help to prevent this by giving the team an estimate of how much time they need in each week and a detailed timetable of important dates when they need to attend to workshops and weekly meetings. The concept owner in the P3 team highlighted how important it was that all the meetings were already booked in the calendars even before the programme started. One coach also reminded that management level people should be invited very early on to the final presentations.

Another vital challenge for the success of the programme has been arranging customer contacts and appointments for the three customer validation rounds in each phase of the process. Almost all teams struggled with this and it was perceived to be the most difficult practical challenge. Contacting the customers and arranging the interviews was very time consuming and team members ran out of contacts quite soon. In addition, the P3 team noticed it had lots of contacts with end-users from the customer but not with the critical business-deciders whose input they actually needed to validate their solution. The concept owner of the team also noted that there should be at least three different customers to validate with to have enough diversity, as not all of them will be willing to pilot new solutions. The teams have been stressed about the importance to list their all possible contacts, find an internal frontline person with access to the customers and starting to book interviews before the programme begins, but even that hasn't been quite enough. The issue was best described by one of the coaches: *"They know it when they feel it."* Again in this case as an external person, the coach has very limited means to affect on customer recruitment without knowing where to find internal customer facing contact persons, let alone finding some actual customers from their industry to contact. An advice one coach gave, was to get the team search gatekeepers from the organisation whose job it is to speak to the customers on a daily basis and get them along to support their project and arrange customer meetings. This might not be easy in large organisation because it might have different hidden cultural and bureaucratic barriers. For example, one team had a situation where they managed to reach the right gatekeeper person but who refused to grant access to his customer contacts.

Coaches	Idean project management	ProCorp team
Opportunities to be developed in the same programme should have enough maturity and similarity	Shortlisting and screening of opportunities and teams needs to have a good process and criteria	There needs to be rigorous attitude to arrange all customer validations and having enough diversity within the interviewees
Team has to commit to the programme's expectations regarding time, motivation and purpose	Communication needs planning and dedicated personnel for effective internal and external outreach	Team members should have a good and open spirit for collaboration and get to work face-to-face with each other and other teams
Ensuring access to customers is essential for the success of the process		
Facilitator needs clear structures to follow and facilitate schedules, goals, responsibilities and decision making of the team		

Table 5. Summary of interview findings: *Creating conditions for success*

# Enable, exemplify, inspire, involve and challenge

One of the coaches described the facilitation work in the programme through three different roles: planning, coaching and programme management, where the planning was found to be surprisingly time consuming. Experiences about the actual coaching effort varied quite much depending on what kind of teams the coaches had. The ones with active and committed teams managed with fairly suitable weekly effort whereas some had had to step in to replace the working time team members didn't have. In P2, the coaching and programme management roles were separated to different persons after the experiences from P1 showed that handling both roles is too much for one person and distracts their focus.

Summarising the discussions from each interview group, the role of the coach can be best described to be an enabler for the team who makes sure that they have possibility to succeed in the programme. In principle, the coach shouldn't do the work for the team but rather provide support according to their needs and keep them on schedule to meet their goals. This is where some coaches described having some difficulties because of their design background, as they were not supposed to take actively part in designing the solution which is what they have been normally used to do. They said how they needed to remind themselves to stand back and let the team to do the work. This is very important since the idea is that the team takes ownership and responsibility of the concept. Actually, the more the concept owner can lead the work of the team, the better. For this to happen, there should be a clear system for decision making between the concept owner and the team, so the rules are clear for all. A P3 team member described a successful interaction with the coach in a following way *"...he gave us space when the team got into a working mode and stepped in to push us when the pace started to go down"*.

In the other hand, it was discussed that the facilitators should have also courage to show leadership and challenge strategic decisions of even high ranking managers in the team. To do this, facilitators would need to know how to speak about design with the language of business, and learn to understand how the organisation and their decision making works. Many interviewees highlighted that working in a strategic level is demanding and means constantly being out of the comfort zone, which facilitators need to accept and embrace. Occasionally, coaches also had to push some team members to take responsibility of the tasks and encourage them to use the new methods and tools more actively. As one of the coaches expressed that this requires some skills of diplomacy and overcoming the urge to do the task yourself.

Interviewees from each group said that the workshops were the most important element in terms of developing the concept and where the big leaps in the progress mostly happened. Physical presence and being together with the other teams outside their normal daily routines, was seen as a good way

to create an exciting and intensive environment for collaboration. For facilitators the workshops are the situations where their actual coaching and interaction with the team for the most part really happens. Especially the first workshop was said to be very critical in making a good first impression for the teams and to start the collaborative process. Overall, participants have had very high initial expectations towards the programme which has culminated in the kickoff. Based on the experiences of facilitators, the first two-day workshop is the most demanding event in the whole programme because the team needs to be convinced of the new mindset and methods and get them excited to start the intense work together in the team. In there the real personalities, attitudes, commitment and ambitions of the participants start to show and the coach must react to whatever surprises there might become. To convince participants to get on board from the start, coaches suggested using example cases, hero stories and testimonials from the previous programmes as a best kind of material to demonstrate the programme purpose and objectives.

In the workshops, facilitators should try to maintain a high energy level among the participants and inspirational atmosphere throughout the day. When planning the programme of the workshop facilitators should carefully consider how they alternate between providing general information and arranging team activities. Experiences from P1 and P2 suggested to have short general introductions, make teams create presentations to pitch their concepts and progress to each other and then use most of the time to work on their concepts with the coach. Overall, coaches considered that it was more beneficial for each team to learn to use tools that were the most suitable for their individual needs instead of presenting same things for everyone.

As for what comes for starting the process with the teams, the coaches highlighted the importance to show dedication right away and commitment towards the team's goals. When asked how to gain their trust, the coaches emphasised getting to know the team and their idea well beforehand, showing your own experience and then just trying provide any kind of assistance which would bring value for the concept. As soon as the team discovered some new angle for their idea through a new tool or a coach helped to make their thinking clearer, it was said to create a bond of trust between the team and the coach.

In P1 and P2, the facilitators quickly realised that teams needed very individual support based on their concepts and team resources. One coach said that she came to think the programme structure more as a red line which helps to support the facilitation and should be applied in a way that best helps the teams to develop their concept. It was highlighted that after all, the main goal for the facilitator is to guide the team to produce the best possible deliverables which help to take the concept forward after the programme.

In general (and in this case, especially with engineers as was mentioned), people have a strong urge to proceed straight into developing the solution without first validating the customer's problem. In a design process instead, the designer first carries out exploratory research to see whether their initial assumptions are right or wrong and to discover other possibly hidden customer needs. This often means asking the customer more open questions or showing them an unfinished product. Because of this, the validations with with the customer in the Problem phase proved to be both the moments of most learning and most frustration for many participants. Coaches said that first it was very difficult to get them understand the importance benefits of the method but once it had finally been done, it transformed the way many people thought. This was also the most highlighted learning among the P3

team members who clearly had become advocates for the method. They said that they actually talk to their customers fairly often, but it is always reacting to a problem they already have. To assist planning and conducting the interviews, teams used an assumptions backlog and an interview guide which were considered as helpful tools. Some coaches expressed that it would have been good to accompany the team in the first interviews to see how they actually conduct the interviews and give feedback. Nonetheless, doing the first validation interviews was considered as a very good example of how the power of a method can be only experienced by doing it. As one coach explained, all the new ways of working that are introduced in the programme represent a different degree of change for the people who use them the first time. A facilitator should be very considerate about this, as people's ability to accept and react to change is always individual.

***“There is not a single team who went to talk to the customer and came back saying it wasn’t a good idea.” - Coach from P1 and P2***

Coaches	Idean project management	ProCorp team
First impressions and experiences before and during the programme kickoff are critical for starting the collaboration	Facilitators are required to have courage to challenge participants (and members management) about their strategic thinking while being out of own comfort zone	Facilitator became part of the team and knew when to provide support and when to step back
Problem validation with customers caused both the most frustrations and best learning experiences	Working together face-to-face in workshops is critical for the progress and collaboration	Talking to customers was a great learning experience
The process, methods and tools should be tailored according to individual team needs		Team decision making should have clear rules in place

Table 6. Summary of interview findings: *Enable, exemplify, inspire, involve and challenge*

# Access to the right knowledge

One important question concerning the competence of a designer-facilitator was to find out what kind of professional knowledge they already should have in order to provide strategic guidance for the teams. Many coaches described the programme as an overlap of service and business design, but highlighted the importance of the ability to speak about the benefits of design in the language of business management. It became clear that in some cases sole experience from design did not provide enough credibility to convince high ranking team members or address some of the challenges that were more deeply rooted in business management. Then again, there were teams who either already had some proven business potential in their concept or had team members who with sufficient expertise to build business case around the concept.

When asked about experiences in the three main phases of the programme, it was quickly confirmed that most challenges for coaches and participants were in defining the business case. Otherwise coaches, most having a solid service design background, said that they felt quite familiar guiding teams through the Problem phase, whereas the Solution phase was more comfortable for the engineering-oriented team members, where coaches said that they mostly helped in visualising and crystallising the concept. In brief, the teams usually had enough knowledge to deal with the solution's desirability and feasibility perspectives but didn't necessarily have expertise to sufficiently prove or articulate the viability side, or their business knowledge was only focused to some specific domain not particularly relevant for their concept.

All in all, the knowledge each team and concept needed varied significantly but the interviewees highlighted that the business expertise and key figures need to always finally come from somewhere. An interesting question regarding this thesis is of course that to what extent should the coach and facilitator take responsibility of providing the business knowledge and expertise? In P2 for instance, teams were able to use a special business consultant to help to define the business cases which was said to help a lot. This further emphasises the importance of the pre-validation phase in how the selected business opportunities are matched with the resources and the competence of the team and the facilitators. As many of the concepts were product or service focused they were closely related the professional domain of designers, but as one coach with a business design background stated, service design tools can also be used to develop e.g. business or pricing models. Nevertheless, all interviewees were still unanimous about the need to integrate the business element more closely into the process. Some directions for designers to learn better business competence were suggested, such as studying business administration and entrepreneurship, but it was also noted that no education can match a solid industry experience and witnessing the process in the real context.

Business model canvas (BMC), Value proposition canvas and go to market plan were mainly the tools used for summarising the business cases with the teams. Of these, BMC was the most commonly used and applying it iteratively throughout the entire design process was more and more emphasised after each programme. Even though it was a familiar tool for all coaches, some noted that having more knowledge about different existing business models and their suitability for different purposes would

have been helpful. Overall, BMC was a well received tool by the participants and many had said that they would like to start to use it in their work. In the Business phase, teams also had to draft estimated figures about costs and revenue of their concept and validate the price that the customer would be willing to pay for the solution. Coming up with the numbers was generally considered to be challenging and for what the participants wished to have better tools and templates.

In terms of expertise and knowledge in ProCorp’s domain, participants didn’t see the coach being an external person to the company as an issue, although some had expressed that the coach could have brought in more industry-specific vision and insights. Understanding ProCorp’s organisation and their complicated B2B industry takes some time, which is why some coaches suggested that it would make sense to become specialised to a certain industry sector over several years. In the beginning of the programme coaches said they had to spend lots of effort to become familiar with the basics concepts in the industry and learn the terms to start speaking the same language with the team. Moreover, some coaches and team members said that it would benefit the teams a lot if the coach could better connect team members with internal contacts in the organisation. Thereby the coach could help to search the specific information or expertise from the organisation and connect it with the team. However, this would require strong mandate and connections with the organisation and different business areas which Idean’s facilitators as external persons to the organisation didn’t have.

Apart from facilitating the process, Idean’s coaches also used their individual design competence and skills in different occasions. Most of this was related to helping the team to visualise information and helping to present the concept in a more understandable ways. Coaches often helped the teams to crystallise their concept proposal for the customer and for final presentation which was very appreciated by the participants. In addition to that, teams had a budget which they could use to get help from Idean’s visual designers to give finishing touches for their presentations and concept prototypes. However, participants didn’t always automatically utilise this capability and the power of visual communication was often a surprise for them, so the facilitators had to make sure that they actively demonstrated its effect. As one of the coaches expressed: *“they don’t miss it before they see it”*.

Coaches	Idean project management	ProCorp team
Business needs to have a foundational integration into the design process	Designers need entrepreneurial mindset to learn fast during the process to build and iterate the business cases	It is important to find the key business deciders among customer stakeholders
More radical ideas might require external help and more specific expertise	Designers must get participants to rethink outside of their own competence and actively use design thinking methods to help with this process	It was challenging to come up with the key metrics for the business case
The coach brings in valuable outside-in perspective but needs to have basic knowledge of the industry and the organisation		

Table 7. Summary of interview findings: *Access to the right knowledge*

# Purposeful programme environment

Each interviewee was asked about their view of the role of design in the process, how did they think it helped to achieve programme goals and why people with design background should be the ones to facilitate such a programme. Overall, the message was that there is actually no particular reason why the coaches would necessarily have to be designers. The facilitator could be anyone who understands the use of multidisciplinary, iterative and customer-centric methods and processes and can communicate their benefits and ways of working to others. One coach felt that there is nothing in the classic design education that would somehow specifically prepare designers to facilitate workshops or train other people with new ways of working.

Still design was seen as a unique approach to achieve the goals of such a project. Interviewees from Idean who work with customer sales said that there is now a growing demand for new ways of working and tools where clients seek to have more simplicity, clarity, speed and ability to produce concrete results to improve their processes. They argued that designers have the appropriate mental and physical tools to match these needs by being able to find the right problems to solve and formulate and validate hypothesis in ever more complex business environments. When asked about the role of different frameworks which had influenced the original programme planning, design thinking was described to offer the philosophical mindset while service design provided the methods. Furthermore, lean startup was seen to bring in the business perspective and agile methodology the rhythm for working in sprint cycles. However, it was apparent that interviewees in each group didn't have very clear conception about distinctions between different frameworks. Facilitators also weren't too interested about what elements of the process were taken from which framework and told that they just chose whatever methods and tools were best suited for each situation.

Facilitators yet emphasised that increasing the speed of innovations to get to the market is the primary reason behind the business accelerator programme and the purpose of the process is to prepare the concepts for further development and execution. What the programme offered for each concept, was a process that helped to identify the customer, benefit and utility and validate the business model and the initial design of the solution. Therefore, the programme can be regarded as an agile decision making tool which produces deliverables that help to evaluate promising business opportunities. Based on the feedback, this objective was actually achieved and many teams reported that the programme accelerated their work from several months to a year or even more. The first programme alone was claimed to having been saved 32 months worth of work in total.



The programme also has wider transformational purposes in adopting new ways of working and encouraging multidisciplinary and cross-functional collaboration in the organisation. For coaches this sometimes posed as a challenge when they tried to balance between efficiency in the concept development and ensuring that team members understand and properly learn to use the selected tools and methods. Overall, the impression from the interviews of coaches and P3 team members was that the educational agenda was kept more in the background and for example aforementioned process frameworks were not explicitly mentioned. The facilitators emphasised that coaches shouldn't engage into teaching mode but merely guide the teams to work with new tools and have them learn those by doing. However, each coach seemed to have their own slightly unique approach for their role and how they involved the team members. Some wanted to work in a more close and hands-on collaboration with the team while others saw that they should stay back as much as possible overseeing the process and only jump in when necessary. Besides the coach's personality and preferences, time constraints, team commitment and the maturity of the concept further determined what kind of educational approach the coaches could take and how they managed to combine learning and doing. Because the goals for that hadn't been too clear, some coaches suggested to better define the educational ambition level in the programme planning.

The extent of collaboration between and within teams were other aspects which determined the character of the programme environment and the role of the coach. Especially from this perspective the first two programmes and P3 were clearly different. Whereas in P1 and P2 coaches had to run large workshops for two full days simultaneously for multiple teams of which some were composed of people formerly unknown to each other or coming from different locations, the coach in P3 only had two hour virtual workshops with only one other. Furthermore, the P3 team members all were already working in the same unit. Whereas the P1 and P2 facilitators had to deal with lots of practicalities and pressure of arranging big workshops, the P3 coach was able to work closely with the team in familiar surroundings without too many distractions. In addition to that, the P1 and P2 facilitators had to manage a great deal of collaboration between multiple teams, an element which wasn't really present in P3.

The communication that happened between teams were mostly pitch presentations and sharing experiences about their concepts, progress and learnings to create synergies and networking between teams. According to P1 and P2 coaches, this interaction had a heightening effect to the excitement of the teams and the special workshop environment managed to create an inspirational atmosphere with a feeling of positive competition. In fact, many Idean facilitators mentioned that creating a fun and casual atmosphere to work with serious business is one of the advantages that design can bring to the day-to-day of a corporate office worker. Coaches also noticed that it was beneficial for the concept development to increase the frequency of pitching for other teams as the teams got considerably better in presenting their concepts which also helped to clarify the team's ideas. P3 coach also mentioned that there were usually lots of valuable new topics to discuss after each virtual workshop they had with the other team which the team members said they learned a lot from. However as the P3 workshops were conducted in a virtual environment, some team members expressed mild disappointment of missing the element of getting out of the office and meeting the people from other team in real life.

Communication in general inside and outside of the organisation was reported by the persons responsible of the programme management to be yet another aspect which takes a lot of time and effort if the organisation wants to raise interest and maximise attention and outreach of the programme. An Idean project manager for example described how communication teams of different ProCorp business areas had different interests, practices and channels which had to be taken into account if there was to be any impact outside of the programme entity. From the company wide transformation perspective, the programme management should include a solid plan for internal communication to reach the right audiences, attract more ideas to the programme and share the value of the programme inside the organisation.

What comes to the presence of design in the programme in general, the most apparent finding from all the interview groups was that it was largely invisible. None of the P3 team members were aware of design being somehow relevant in the programme and overall they had very little or even wrong knowledge of what design or design thinking means or how they manifest. Also the facilitators said that design wasn't really something that would have been brought up during the programme which was also partly purposeful in order to not to tie the programme too strongly to any of the innovation frameworks. For many of the P3 team members, the project appeared as a new kind innovation programme with some new methods and tools but it also wasn't considered as a radically different experience, although most said they had completely new angles to think.

Coaches	Idean project management	ProCorp team
Accelerating business ideas into validated concepts is a priority but collecting learning from failures is also valuable	The programme is a decision making tool which helps to identify and validate the customer, the design and the business model of new business opportunities	Not finding a viable business case for a concept was not considered to ruin the experience of the programme as long as it provided valuable learnings
Learning new ways of working is an important long term goal for the organisation		The programme offered interesting learnings for innovation methods and working in teams
Design thinking offers the innovation mindset while service design provides tools and methods		Design per se was non-existent for the team members during the programme

Table 8. Summary of interview findings: *Purposeful programme environment*



# Discussion

*This chapter takes a closer look to some of the most interesting findings and reflects them with the topics and concepts from the literature review. The first section discusses about evaluating the impact of the facilitation work in the organisation from the perspective of performance and value for participants. From there, the discussion continues to examine the programme's effort to diffuse design and business into the same process and facilitator's responsibility in creating those links. Finally, the third section ponders the personal motivation behind the designer-facilitator role.*

# Role of design in building more efficient innovation processes and creative culture

The facilitators of the accelerator programme had both a tactical purpose to provide a methodology to distill and fast forward promising ideas into profitable businesses, and a strategic objective to inject new innovation culture into the organisation by introducing the employees new ways of thinking and working. Based on the findings, the skills that the facilitators needed in this effort were more or less similar with the definition of the strategic designer that Holston described through the four principles (2011). Being able to understand how internal organisational mechanisms work, engage people to support the process and create dialogue with both internal and external stakeholders was critical in order to maintain efficient collaboration and validate concepts, decisions and value propositions throughout the process. Moreover, the coach's abilities to handle the complexity of the problem space and apply co-creation methods to support the concept development and collaboration were part of the daily interaction with the team. What comes to designers taking more responsibility of the effectiveness of design and overall integrating business deeper into the design process, the accelerator programme provided an interesting example of such a context in practise. As the facilitators needed to make sure that their teams' methods and deliverables were suited to make strategic business decisions, they had to build a process to be transparent and accountable.

The primary goal of the accelerator programme was to generate new growth and revenue faster. However, it is still too early to say how well the programme has managed to perform in terms of return of investment since by now some of its offspring have only progressed into a piloting phase. Some data from the first two programmes show promising shorter term results though. Both the first and the second accelerator programme were reported having been saved an estimate of 30 and 32 months in total of development time (6,4 and 7,5 months / team in average) and having produced valuable learnings and data for ProCorp's different business areas through numerous customer insights, prototype iterations and concept pivots. While the final results of profitability will take longer to materialise, the saved working time due to the faster progression and new validated learnings have worked as an immediate measurement to assess the performance of the programme itself. As the design industry and designers have been traditionally struggling to articulate the direct impact of their involvement into the business development, the findings from this case study suggest above mentioned metrics as a one concrete way to evaluate design's accountability. Nonetheless, this research does not help to provide answers to the long-term impact of using design-led innovation process. In order to prove the strategic performance value of design in business innovation, there would need to be a large enough sample of concepts developed with such a process to see how many made it (or did not) to the market and how they have generated profit within a certain life span. Even then it might be difficult to distinguish which variables had the decisive influence in a concept succeeding or failing.

The other perspective concerning the organisational level impact is to look at how facilitators are able to disseminate new ways of thinking and working and how those were received by the non-designer participants. Within the limited scope and material of this research however, it is not possible to make an exhaustive in-depth evaluation about the learnings of each participant but some indications can be found by comparing general and individual feedback of the facilitators and team members with the research about design thinking and lean startup methods in organisations. The overall impression from all the three programme runs is that the programme has been a very positive experience for the participants and they have expressed having gained valuable learnings during the process which they might try to utilise in their daily work. Altogether, the findings suggest that many ProCorp employees learned to think more critically and objectively about how they solve customer problems and how subjective experiences and assumptions can influence to the development process if they are not validated.

According to Liedtka, design thinking can help innovators in their work by i.a. helping to avoid cognitive biases, articulating more focused insights and creative ideas, adapting to ambiguity and fostering collaboration (2015; 2018). Based on the findings, especially key design thinking methods such as immersing oneself to user needs to understand the customers' problems, overcoming subjective and collective biases through assumption testing and understanding the value of customer feedback through low-threshold experimentation were learnings that can be discerned from the ProCorp team member feedback. Many of the participants, including all the team members of the P3 team, expressed having realised the value of talking to customers early on and how preliminary assumptions influence to the team's concept and decision making. Despite of many teams having difficulties in preparations for the interviews, the process of validating ideas and concepts with customers in each phase of the development was widely considered as a good new practice by the ProCorp participants in each programme, although some coaches suspected there were sometimes issues in how customer interviews were conducted and interpreted.

Other benefits of using design thinking that Liedtka proposes such as discovering new ideas, organising and synthesising data into insights and aligning the team behind them to create a design criteria however, were processes that the coaches mostly facilitated for the teams (2018). These actions largely represent the abductive logic structure of the design process where divergent and convergent thinking creates the rhythm for the progress of the work and thereby, it is difficult to evaluate how well participants learned about managing different parts of the design process. This suggests that using single key design thinking methods and managing the process that connects those methods represent two different levels in adopting the use of design methodology. Considering that, it might be beneficial if the facilitator provided special coaching sessions for the team leaders about actually managing the design process or would have them as kind of co-coaches. In this way the participants could learn design either with practitioner or leadership focus depending on their role in the organisation.

One more advantage Liedtka lists is that design thinking can help to deal with change and uncertainty through active internal and external stakeholder involvement that leads to a shared commitment (2018). Interestingly Carlgren, Elmquist and Rauth mention cultural alienation as one of the challenges typical for design thinking (2016). The controversy most likely demonstrates the high volatility when implementing design thinking methods for the new audience and the uncertainty of change initiatives. These two sides were visible also In ProCorp's case as Idean facilitators told that the teams who struggled in the very beginning of the process had increasingly hard time to recover and reach the

others. Facilitator's responsibility increases considerably in this kind of situation since participants need positive experiences to accept new ways of working. As one of the coaches stated, each individual has their own process to react to change and the facilitator needs to be sensitive to this while making sure the team still progresses. Especially the first 1-3 weeks were said to be more stressful when the team learned to work together and needed to test the new methods immediately with real customers. Two P3 team members for example expressed their fears about making empty promises for their customers if they present ideas that haven't yet been proven feasible and viable. Coaches instead had had some participants who were reluctant to try out new methods. Challenging situations during the process were for example when the teams needed to contact and interview the customers for the first time, presenting them raw ideas and mockups and some team members not actively taking part to the concept development outside of their own professional core expertise.

Nonetheless, the most challenging moments usually turned out to be the most beneficial for the participants and the greatest learnings happened when facilitators pushed the team to overcome their antipathies and fears. In accordance with Liedtka, Salzman and Azer (2017), in most of these cases existing habits and accustomed ways of working were the most probable underlying cause for the resistance which made the participants to counteract against the new methods. However, the coaches were unanimous that the only effective way to have participant realise the potential of new ways of working was by doing. As emphasised by Ries, the facilitator has to be creative to find best ways for each team to experiment with new methods and tools in order to believe in them and adopt them (2017). This was true especially with one of the most challenging teams where the coach needed to persuade a participant to make an experiment in their own professional context to prove her point with one of the methods.

With some project teams there were symptoms of 'linear fallacy' in the design process in failing to prepare for organisational barriers in critical process phases (Conway, Masters and Thorold, 2017). In P1 and P2 some participants voiced critique over being left out of the loop in decision making after the programme had ended and being disconnected from their project they had dedicated lots of time and effort. This obviously lowers the motivation to commit to similar projects in the future and overall discourages to generate entrepreneurial activity. Unfortunately an external facilitator has fairly limited ways to influence this other than trying to emphasise the matter in the programme planning and preparations. However, especially bureaucratic and cultural issues have gotten more and more attention after each programme and for example being more active in involving internal contacts into the development process and ensuring stronger commitment from the management has been emphasised. Still, a more systematic attention to recognise and remove bottlenecks and hindering internal factors would be needed to ensure more fluent and efficient process.

# Running a design process with a business focus

What made this case study interesting was that in the programme design or design thinking weren't explicitly kept in display which possibly allowed participants to provide more genuine feedback about the process and methods free of preconceptions and opinions that they might have towards design. The coaches also emphasised having tried to explain the concepts and methods without using too much design terms and rather applying them into the language of business. This apparently worked well since at least none of the P3 team members considered design or design thinking being somehow relevant part of the programme. This kind of approach probably has both good and bad sides. As a positive effect the participants might accept and adopt new concepts more easily if they haven't been heavily branded around a particular framework or discipline. Most P3 team members described the programme similar to other innovation programme they have attended earlier but with new methods and with more comprehensive and intensive process. On the other hand, not being clear about the foundations which the programme has been built on does not help to raise awareness about design's capabilities within business and technology dominated industry and might seem as confusing if the foundational logic of the used methodology is not rooted to its original core.

Nevertheless, the findings show that design thinking had a prominent and probably the most foundational role in the programme. Core elements such as user focus, problem framing, visualisation, experimentation and diversity can be recognised from the process structure and methodology and they surfaced from the team member interviews in one way or another without them recognising those explicitly as design related concepts (Carlgrén, Elmquist and Rauth, 2016). This shows that even if the focus of the programme was to validate business potential, the process itself was very much design-led, although many critical elements for decision making like validated learnings, leap of faith assumptions and pivot or persevere moments are also found from lean startup.

Probably the greatest difference to traditional design process was not having an open exploration phase in the beginning of the process but teams were expected to already have a promising idea of the concept and its business model. There were still teams however, which needed more explorative guidance from the facilitators. This happened either in the beginning when the coaches noticed that the team's idea was in a too abstract level or when pivoting between phases if the concept had failed to validate its business potential. This was not ideal especially in P1 and P2 programmes where multiple teams were expected to proceed simultaneously in a tight linear schedule. Because of this, recommendations were made to have more strict selection process for selecting the opportunities and possibly arranging a separate programme for exploring the more abstract ideas. Altogether, even though the P3 concept owner thought that the programme could be used as a good filter to sort out promising business ideas, the programme as such might be too expensive and time consuming to be used for such a purpose.



As mentioned in the findings, facilitators didn't make too much distinction between specific frameworks and where each tool and method was coming from. The programme planning was done in close collaboration with the client where roughly speaking Ileana as a facilitator brought in the expertise around design thinking and service design and the programme manager from ProCorp was well familiar with lean startup. In the end, the programme was a mix of all those frameworks to validate concept's desirability, feasibility and viability aspects following the objectives of design thinking (Brown, 2009). The create-validate-refine working rhythm inside each phase followed quite closely to process descriptions of lean startup (build-measure-learn) and IBM design thinking (observe, reflect, make). The double diamond model can also be applied to the programme's three-phase process either if defining the business case is considered as a third diamond or business is added as an integral element to problem and solution validation. The findings heavily suggest that the latter would be a preferable way to build stronger business cases. The problem has been though that service design and design thinking tools did not provide enough support for viability perspective in key business metrics.

Requirements for building the business case also differed a lot between teams and some opportunities were purely focused on business model innovation. There were few cases where sole service design experience and competence was just not enough and required extensive proficiency in business strategy and management. Furthermore, the role of business knowledge became even more pronounced if the team had higher management level members. It is debatable whether this was an issue not addressed enough in the planning and resourcing or should the facilitators just have such a strong hybrid proficiency to handle both the design and business aspects. It is probably more useful to think of ways how designers could learn to systematically include at least most basic financial indicators to the design process and/or have a business expert as part of the team or available for consultation. Within this research there were no useful tools found from design literature so at the moment designers need to look elsewhere. For example, lean startup offers some tools for this in both operational level (innovation accounting) and in strategic decision making level (metered funding). Overall, this discussion indicates that expectations towards the designer's role in terms of business knowledge in such a process needs to be defined well beforehand and in accordance with the types of opportunities that are being developed. Additionally, one key suggestion for future research based on this study is to develop each phase of the design process to include common business metrics and attaching them tightly to the divergent/convergent logic.

As mentioned earlier, another solution for matching the facilitator's competence with required business knowledge would be to study what kind of support and expertise different concepts have needed to find out if there are certain types of opportunities that have similar needs. Based on what the facilitators told about different concepts in the programme, there might have been some indication that more radical opportunities (in comparison to ProCorp's core business) needed more support in terms of business expertise and thus a more business savvy facilitator. These are very preliminary observations though, and this hypothesis should be a subject for further research.

# Designer-facilitator identity

What was common among the three coaches with purely design background was that they all had a strong interest towards the business perspective in order to broaden their competence and understanding. Another similarity between them was having at least senior or lead level proficiency in design and having worked as service or business designer. Especially designers with product design background said service design had worked as a stepping stone into the strategic dimensions of design and where they already had earlier experience facilitating workshops in client projects and design method trainings. Still, one of the coaches from P1 and P2 said that this programme required taking facilitation skills to a different scale and it had considerably stronger emphasis on business perspective than in the earlier projects.

When discussing how they saw the facilitator role in the programme compared to their usual work at Idean the designers saw most difference in what kind of creative action gets them motivated and inspired. In contrast to product and service design where the designer usually leaves their mark by turning ideas into concrete experiences, facilitating designers need to accept that their own input will mostly be visible through other people's work which they cannot take credit in a similar way as designers normally do. Instead seeing their own ideas realised, a facilitator should be motivated to help other people to develop and get inspired by transforming people and organisations to think and work in new ways. The coaches said that rewarding moments for them were i.a. witnessing teams getting excited about discovering new ideas, when participants realised the potential of a new method or seeing the team's delight when they saw their concept being formed and visualised. This mental change is not necessarily automatic as some coaches noticed when they sometimes needed to remind themselves of their role and not to engage to do the tasks and use the tools for the team.

When asked how to prepare or educate for facilitator role, the designers highlighted the importance of personal interest and experience. They were not aware of any formal education that could have prepared them to facilitate the use of design methods and team collaboration. There was neither very practical literature about managing design thinking or co-creation methods for non-designers. Overall when thinking of the coach's role of managing learning and collaboration, pedagogical skills actually seem to stand out as a very important part of the facilitator competence. Now afterwards this seems as an obvious remark when considering the facilitator role as kind of a team coach or mentor but it is a topic that has not been really discussed in the literature. Overall, social and leadership skills from the facilitator perspective were not too well represented in the existing literature and should be researched further and provide designers better material to help them to become professional facilitators.



# **A practical guide for facilitator competence**

The original three-staged process was considered to be working well for the programme’s purpose so the main phases were kept in place as a background structure for the competency mapping. The most apparent difference to the original programme structure was splitting the preliminary events before the actual programme kickoff into three phases for ‘*Research and screening*’, ‘*Programme planning*’ and ‘*Preparations*’. Moreover, based on the research the following four layers of competency were recognised which the facilitator should be able to apply through their knowledge and skills during the process (Fig. 12):

1. Transformational / industry
2. Organisational / internal
3. Collaborative / team
4. Methodological / process

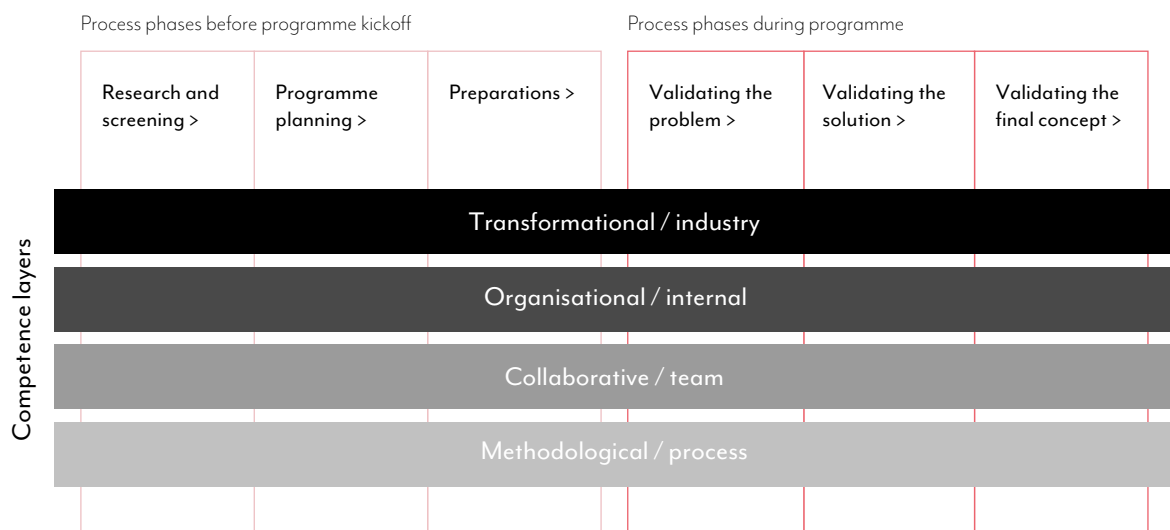


Figure 12. Facilitator competence levels and process structure

The following more detailed description is meant to act as a guide to suggest good practices and to provide a comprehensive image of the events, responsibilities, communication and tasks in each process phase. The guide does not specifically comment to whom or for how many people should the tasks and responsibilities be shared with as those arrangements should be solved case by case. The guide does not either intend to define different levels of experience in competencies in a too detailed level because it rather aims to present the process as actionable tasks rather than as a set of personal criteria. In addition, further coding of single competences have been made based on Gribbin, Young and Aftab’s holistic design competence framework where the designer’s competency has been defined to comprise of knowledge, skill, attitude and capability (2016). Capability was not included in the coding since in framework it works as a high level enabler related to an individual’s ability to gain knowledge, skills and attitudes and would have been too subjective and vague term to be used to categorise concrete actions and qualities.



## Research and screening

■ Knowledge  
 ■ Skill  
 ■ Attitude

Competence layers	What	How
Transformational / Industry	<ul style="list-style-type: none"> <li><span style="color: #0070C0;">■</span> <b>Get to know the client and their industry</b></li>   <li><span style="color: #0070C0;">■</span> <b>Understand organisational transformation as a process and its effect on the client organisation and business</b></li> </ul>	<p>Industry trends and competitors</p> <p>Opportunities for digitalisation</p> <p>Common stakeholders and roles</p> <p>What global/local events in the market are driving the transformation</p> <p>Typical challenges and barriers for change</p> <p>Alignment with current innovation management and leadership practices</p>
Organisational / Internal	<ul style="list-style-type: none"> <li><span style="color: #709238;">■</span> <b>Screen the business opportunities and ideas together with the business owners</b></li>   <li><span style="color: #D98034;">■</span> <b>Have curiosity to understand how organisations and systems work</b></li> </ul>	<p>Recognise different stages of maturity in concepts</p> <p>Assess where ideas might need most support and specific internal or external expertise</p> <p>Make sure the idea is connected to broader vision and strategy</p> <p>Identify opportunities with similar needs for simultaneous development</p> <p>Assess possible internal bottlenecks and barriers for the development process</p>
Collaborative / Team	<ul style="list-style-type: none"> <li><span style="color: #709238;">■</span> <b>Ensure team commitment</b></li> </ul>	<p>Evaluate team ambition and motivation</p> <p>Make sure team has a dedicated concept owner</p> <p>Team members should have 50-100 % allocation of their work time for the programme</p> <p>Communicate the role of facilitator / coach</p> <p>Book all calendar reservations early on for the duration of the whole programme</p>
Methodological / Process	<ul style="list-style-type: none"> <li><span style="color: #0070C0;">■</span> <b>Evaluate what kind of support and environment selected team(s) and ideas require</b></li> </ul>	<p>Assess whether ideas have enough maturity for a business accelerator or need a more exploratory process to define the opportunity further</p> <p>Understand when it is beneficial to use a wider programme for multiple teams and when to concentrate for individual teams</p>



## Programme planning

■ Knowledge ■ Skill ■ Attitude

Competence layers	What	How
Transformational / Industry	<ul style="list-style-type: none"> <li>Define the role and goals of the programme for the organisation</li> <li>Aim to develop a long-term interest towards specific industry</li> </ul>	<p>The short-term impact (developing new business opportunities)</p> <p>In long-term change and transformation (new ways of working and innovation culture)</p> <p>Goals for internal and external communication</p>
Organisational / Internal	<ul style="list-style-type: none"> <li>Be fluent in communicating with people from different disciplines and functions</li> <li>Find and involve key internal stakeholders early on together with the team members</li> </ul>	<p>Understand organisational hierarchies and systems</p> <p>Encourage proactive attitude to help the team network with necessary experts across organisation to get their support</p> <p>Bring in frontline persons who have direct customer access</p> <p>Invite key business deciders to milestone meetings very early on</p>
Collaborative / Team	<ul style="list-style-type: none"> <li>Be sensitive towards team's assumptions and expectations for the programme</li> <li>Meet the team and start building trust and team spirit early on</li> </ul>	<p>Use examples and internal advocates to explain the value and purpose of the programme and the ways of working</p> <p>Consider the diversity of individual personalities and their attitudes in the team</p> <p>Talk about process and methods without using too much design vocabulary</p> <p>Be convincing about personal expertise</p> <p>Show commitment and excitement towards the opportunity at hand</p> <p>Be aware of the typical professional characteristics in the industry, their way of thinking and their roles and goals in the organisation</p>
Methodological / Process	<ul style="list-style-type: none"> <li>Tailor the programme and the process for each organisation and occasion</li> </ul>	<p>Work in close collaboration with the programme managers, business owners and other internal stakeholders</p> <p>Plan final deliverables to match the criteria that supports internal decision making</p>

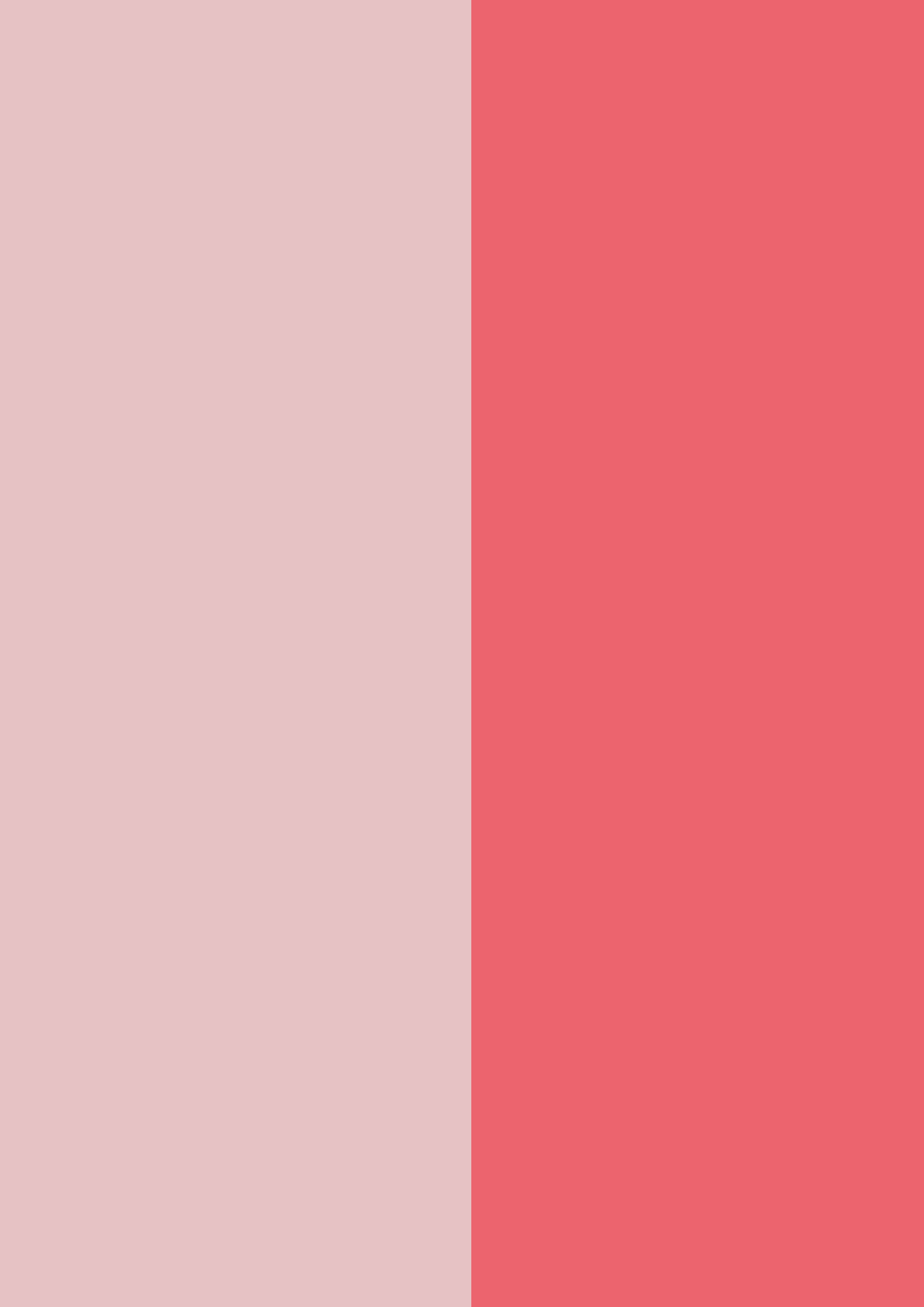


## Preparations

■ Knowledge ■ Skill ■ Attitude

Competence layers	What	How
Transformational / Industry	<ul style="list-style-type: none"> <li>Be an advocate for design and to its strategic benefits from business perspective</li> </ul>	<p>Ability to discuss about strategic objectives of large corporations with management personnel</p> <p>Be prepared to present the logic of how design and new ways of working help to achieve growth and positive financial impact</p>
Organisational / Internal	<ul style="list-style-type: none"> <li>Support internal programme management to communicate the value of the programme</li> </ul>	<p>Explain purpose, process and methods to management personnel to gain support and resources for teams in their respective business areas</p>
Collaborative / Team	<ul style="list-style-type: none"> <li>Help team to prepare their business proposal and idea for the programme</li> <li>Create a preliminary learning experience with a customer before kickoff</li> </ul>	<p>Help to articulate critical assumptions and create initial problem and concept definitions</p> <p>Anticipate possible internal and external bottlenecks for concept validations</p> <p>Design an experiment where the team can test their initial assumptions</p> <p>Aim to recruit the customer as a sponsor user for the project</p>
Methodological / Process	<ul style="list-style-type: none"> <li>Have solid experience of using service design methods and tools</li> <li>Encourage team to contact customers and arrange validation interviews well before the kickoff</li> </ul>	<p>Be prepared to customise tools and create new ones according to the team's needs</p> <p>Search for multiple potential customers for the concept and ways to contact them</p> <p>Map several alternative sources for customer access (e.g. social media, internal contacts or conferences)</p> <p>Involve sponsor customers into the process if possible</p>







## Validating the problem 1/2

■ Knowledge  
 ■ Skill  
 ■ Attitude

Competence layers	What	How
Transformational / Industry	<ul style="list-style-type: none"> <li><span style="color: #0070C0;">■</span> Build broad knowledge of different building blocks to find new perspectives for innovation</li> <li><span style="color: #70AD47;">■</span> Speak about design in the language of business</li> <li><span style="color: #FFB74D;">■</span> Have courage to challenge current strategic thinking with members of higher management</li> </ul>	Physical / digital applications Product / service Business models Processes / methods / tools
Organisational / Internal	<ul style="list-style-type: none"> <li><span style="color: #0070C0;">■</span> Be considerate about the organisation's and participants' tolerance for uncertainty and ambiguity</li> <li><span style="color: #FFB74D;">■</span> Have high tolerance for uncertainty and being constantly outside of own comfort zone</li> </ul>	Be sensitive to each individual's ability to accept change Openly communicate the meaning of the critical process phases and methods Do not assume people are right away excited to change their ways of working Have courage to challenge also people high up in the organisation hierarchy
Collaborative / Team	<ul style="list-style-type: none"> <li><span style="color: #70AD47;">■</span> Synthesise and align team's thinking</li> <li><span style="color: #70AD47;">■</span> Use examples and storytelling to prove a point instead of just explaining the logic</li> <li><span style="color: #70AD47;">■</span> Arrange co-creation sessions for team</li> </ul>	Summarise conversations in real time and make sure team has consensus in basic questions and assumptions Make team's thinking visual for others by drawing or writing on board or sticky notes Get all team members to participate Have advocates who the participants can relate to to share their experiences and learnings Present peer testimonials and hero stories Divergent ideation and brainstorming Design research methods Rapid experimentation methods



## Validating the problem 2/2

■ Knowledge
 ■ Skill
 ■ Attitude

Competence layers	What	How
Collaborative / Team	<ul style="list-style-type: none"> <li style="margin-bottom: 10px;"><span style="color: #FF9933;"> </span> <b>Challenge the team's thinking</b></li> <li style="margin-bottom: 10px;"><span style="color: #FF9933;"> </span> <b>Provide inspirational work environment</b></li> <li style="margin-bottom: 10px;"><span style="color: #FF9933;"> </span> <b>Act like as another team member when working with individual teams</b></li> </ul>	<p>Creatively apply tools and methods to help the team discover new perspectives</p> <p>Facilitate team learning by making the team test their own assumptions</p> <p>Make sure the team aligns and checks their development with broader context and strategy</p> <p>Maintain positive atmosphere and democratic spirit</p> <p>Celebrate successes and have fun together</p> <p>Schedule enough breaks, food and refreshments</p> <p>Be passionate about the concept and what the team wants to achieve</p> <p>Tailor the methods and tools according to team needs and capabilities</p>
Methodological / Process	<ul style="list-style-type: none"> <li style="margin-bottom: 10px;"><span style="color: #0070C0;"> </span> <b>Be creative with tools and methods and tailor them according to team's objectives</b></li> <li style="margin-bottom: 10px;"><span style="color: #0070C0;"> </span> <b>Plan and manage large workshops and events</b></li> <li style="margin-bottom: 10px;"><span style="color: #0070C0;"> </span> <b>Arrange sharing sessions with other teams and audiences</b></li> <li style="margin-bottom: 10px;"><span style="color: #0070C0;"> </span> <b>Establish a clear process structure and rhythm</b></li> <li style="margin-bottom: 10px;"><span style="color: #709248;"> </span> <b>Start building the business case right from the start (e.g. business model canvas)</b></li> <li style="margin-bottom: 10px;"><span style="color: #FF9933;"> </span> <b>Prepare and push the team over the initial customer validation experience</b></li> </ul>	<p>Design new tools if necessary</p> <p>Be comfortable in front of large crowds</p> <p>Manage and align needs and agendas of multiple teams</p> <p>Maintain energetic atmosphere</p> <p>Have the team present often to refine the concept</p> <p>Get peer support and feedback</p> <p>Understand the basic process elements of design thinking, lean startup and agile and apply them to the innovation process</p> <p>Provide enough support and safety for the team to learn to use the process and methods</p> <p>Include enough process steps and instructions that are easy to follow</p> <p>Do not introduce too many tools at once</p> <p>Emphasise the most important learnings goals</p> <p>Have experience of different business models and how to experiment and innovate with them</p> <p>Have basic knowledge of business management</p> <p>Aim to find the customer stakeholders who make business decisions</p> <p>Arrange team to have customer connection as early as possible</p> <p>Emphasise the importance of empathy and validating assumptions</p> <p>Reflect the experience with the team's initial assumptions (assumptions backlog)</p>



## Validating the solution

■ Knowledge ■ Skill ■ Attitude

Competence layers	What	How
Transformational / Industry	<ul style="list-style-type: none"> <li>Be quick to develop knowledge about the industry along the process</li> <li>Actively provide outside-in perspective</li> </ul>	<ul style="list-style-type: none"> <li>Inspire team with examples from other industries</li> <li>Help to formulate new value propositions</li> <li>Make the team think beyond legacy knowledge and industry conventions</li> </ul>
Organisational / Internal	<ul style="list-style-type: none"> <li>Communicate progress to key internal stakeholders in milestone meetings</li> </ul>	<ul style="list-style-type: none"> <li>Create systematic way to collect and enrich data during the process</li> <li>Make deliverables and process reporting transparent and easy to understand</li> <li>Arrange milestone meetings where key internal stakeholders are invited</li> </ul>
Collaborative / Team	<ul style="list-style-type: none"> <li>Sense the team energy level and motivation</li> <li>Reinvigorate team morale when encountering setbacks in the process</li> <li>Let the team take ownership and responsibility of the concept development</li> <li>Encouraging and optimistic personality</li> </ul>	<ul style="list-style-type: none"> <li>Knowing when team needs a boost and when to back away and let them take control of the work</li> <li>Guide team to take step back and pivot the concept if necessary</li> <li>Emphasise the value of learnings</li> <li>If a concept is discontinued, highlight the value of time saved and contribution in broader strategic context and find alternative ways for the team to participate</li> <li>Incentivise all team members to participate</li> <li>Encourage team members to leave their mark by making them write or draw their thinking</li> <li>Resist the urge to do the work for the team</li> <li>Finding the positive side from failures to lift the team's morale</li> </ul>
Methodological / Process	<ul style="list-style-type: none"> <li>Offer tools that help to define necessary business metrics</li> <li>Know how to design and build prototypes and mockups for experiments</li> <li>Have flexibility to react quickly into changing situations</li> </ul>	<ul style="list-style-type: none"> <li>Combine assumptions, findings and data with financial metrics</li> <li>Provide templates and dashboards where the team can record progress and build business case</li> <li>Make sure key assumptions are in line when planning the experiments</li> <li>Make sure experiment data provides useful financial metrics</li> <li>Manage situations where the team needs to perform short on resources, time or people</li> </ul>



## Validating the final concept

■ Knowledge ■ Skill ■ Attitude

Competence layers	What	How
Transformational / Industry	<ul style="list-style-type: none"> <li>Encourage participants to cross-pollinate new ways of working in organisation</li> </ul>	<ul style="list-style-type: none"> <li>Provide adequate material and process steps for participants to use after programme</li> <li>Recruit new advocates and change agents willing to share their experiences</li> </ul>
Organisational / Internal	<ul style="list-style-type: none"> <li>Provide deliverables with enough transparency and evidence for decision making</li> <li>Have professional fulfilment by following the progress of the team and the concept</li> </ul>	<ul style="list-style-type: none"> <li>Present the concept through a business case with quantifiable metrics</li> <li>Define next steps for go-to-market and what resources and actions are required</li> <li>Enjoy about team's achievements and making an impact in the organisation</li> <li>Wanting to learn business management and how to build business case with quantifiable data</li> </ul>
Collaborative / Team	<ul style="list-style-type: none"> <li>Guide decision making based on validated learnings together with concept owner</li> <li>Supervise team's working and activities and ensure they meet their goals and deadlines and finalise deliverables on time</li> <li>Take advantage of the synergy benefit when working with multiple teams</li> </ul>	<ul style="list-style-type: none"> <li>Maintain clear system and rules for decision making</li> <li>Check all team members have tasks and responsibilities</li> <li>Stimulate team focus and motivation regularly</li> <li>Encourage healthy competition</li> <li>Have teams share progress and learnings</li> <li>Create shared deadlines for positive pressure</li> </ul>
Methodological / Process	<ul style="list-style-type: none"> <li>Assess the quality of research and concept development</li> <li>Assist team to crystallise and visualise ideas and concepts</li> <li>Help team to prepare deliverables and final presentation</li> </ul>	<ul style="list-style-type: none"> <li>Provide guidance in planning interviews and join in to the first ones to give feedback</li> <li>Evaluate the insights</li> <li>Show examples of how visualisations can be used to demonstrate the impact</li> <li>Provide design support to produce prototypes, mockups and presentations</li> <li>Bring in an expert for finalising the business case if necessary</li> </ul>

# Conclusions

# Key findings

Examining the Idean facilitators in the context of this case study provided interesting insights to better understand implementing design in a strategic level in practice. Based on the research, four different layers in the facilitator's competence were identified where designer-facilitators should be able to apply their knowledge and skills and to pose a certain attitude in order to plan, coach and manage a design-led business accelerator programme.

Within the *transformational layer* level, the facilitator should understand the industry and what are the drivers behind the change, articulate design's role related to the transformation in the organisation and provide outside-in insights to challenge existing strategic perspectives. Within the *organisational layer* level, the facilitator needs to consider how each organisation works and encourage the team to actively engage and include customers and internal stakeholders into the process to get their feedback and to make sure that the deliverables provide sufficient evidence for decision making. The *collaborative layer* consists of qualities that are needed to encourage the team members to adapt design methodology, sensing the team dynamics, creating inspirational environment and managing the team's responsibilities, schedule and deliverables. Lastly, the *methodological layer* level includes the facilitator's ability to select and customise the right methods and tools for the team in each process phase and manage their use so that they effectively support the concept development and make participants learn their value through practice. Each competence layer was further elaborated in a process phase -specific guide which describes the different knowledge, skills and attitudes through a series of activities and requirements.

The findings revealed that many critical decisions and activities that had an effect to the success of a single opportunity in the programme were actually done during the planning and preparations. Therefore, considerable attention was also given to the process that took place before the programme kickoff. As a result, the programme process structure was expanded with three preliminary process phases to include *Research and screening*, *Programme planning* and *Preparations* phases. The current programme structure and working rhythm for the actual design process was considered to be functioning well so there was no need to suggest notable changes, with an exception of integrating the definition and validation of the business case phase more profoundly to the other main process phases.

Finally, design mindset and methodology were noticed to provide valuable learning experiences for many of the participants, such as engaging the customers with early ideas and assumptions and testing them with rough mockups and prototypes. For the participants, trying new ways of working was not always easy but often the most challenging moments also turned into the greatest realisations. Although the adaptation of design skills and design mindset with the participants cannot be thoroughly assessed within the limitations of this research, there were indications that participants learned new innovation skills by becoming more aware of their biases and think more critically about the problems they are trying to solve.

# Limitations

The greatest limitation in this research has been the research methods. Optimally this thesis would have been autoethnographic or ethnographic study where the researcher themselves had been one of the coaches or otherwise been present to witness the process in the workshops and following the daily working of the facilitator. Unfortunately due to challenges in practical arrangements and schedules shadowing the process at the scene was not possible. For the same reasons it was not possible to interview more personnel from ProCorp. It would have been beneficial to discuss at least with programme managers, business area managers and team members from other programmes. Now the research needed to rely mostly on recollections from Idean's facilitators and programme managers and different programme related material which might lead to miss some of the authentic information.

This business accelerator programme was very particular from the perspective of design research. The emphasis on business, the programme design and having non-designers design methods have made it hard to find similar projects. For this reason it is relevant to ask that into what extent can the results from the thesis be combined with the existing research. It might be hard to compare the findings with the other design-led innovation or design thinking research because of too many unique features that create too many differences.

Lastly, by the time of writing this thesis enough time has not yet passed to provide enough evidence whether the business accelerator programmes have managed to produce concepts to the market with a good success rate and started to create revenue. Although concentrating only on these metrics simplifies the potential impact of the programme by excluding its value on developing employee capabilities, organisation culture and new learnings, the return of investment value will still be the most important metric to define the success of the programme.



# Suggestions for further research

When conducting literature study for this thesis, it quickly became clear that there were not too many detailed descriptions about industry examples of applying design thinking or design processes in organisations with non-designers. The few that were found were mostly studies conducted with student groups in university projects which lacked many aspects that needs to be taken into account when working with experienced employees and managers in professional organisations. In addition, many studies approached implementing design thinking from a very general perspective without going too deep into the actual facilitation of the methodology and processes which made it difficult to find practical references for this case study. Therefore, it would be interesting to have more autoethnographic and ethnographic research related to similar projects from different industries. This would allow to compare experiences from different settings to find good practices and operational models for facilitation processes.

Due to the limitations of the scope the research did not study other business accelerators or similar intensive innovation programmes that were not design-led. It would be interesting to continue to study the accelerator format by comparing the processes and results when they have been led by designers compared with the more common technology or business-led implementations. When comparing the benefits of different approaches, the future research in this area should consider both the performance metrics in revenue and speed-to-market and impact to employees and culture. Furthermore, the process of what happens to the promising concepts right after the programme plays a crucial role in how the momentum of the accelerator programme will be utilised. For this reason there should be also further research on what kind of deliverables and evidence are needed to ensure smooth transition from concepting to the next stage of the development.

Finally, more research should be conducted to study the existing methods and tools that are used to speculate key business metrics during innovation processes and which do not require in-depth expertise to use. Even more important is to test how such methods can be diffused into the design process so that it would be an integral part of the ideation and experimentation. This update to the design process seems necessary if designers want to establish their craft as an accountable way of working.

# References

- Aftab, M., Young, R. and MacLarty, E. (2013). Design as a Functional Leader: A Case Study of Philips to Investigate the Potential of Design as a Leading Functional Discipline. In: *Crafting The Future: 10th European Academy of Design*. Gothenburg.
- Alm, E., Colliander, N., Deforche, P., Lind, F., Stohne, V. and Sundström, O. (2016). *Digitizing Europe - Why Northern European Frontrunners Must Drive Digitization of the EU Economy*. Stockholm: The Boston Consulting Group.
- Berman, S. (2012). Digital Transformation: Opportunities to Create New Business Models. *Strategy & Leadership*, Vol. 40 Issue: 2, pp.16-24.
- Bilson, C. and Aitchison, I. (2016). Tips for Building a Successful Design Organisation. *Design Management Review*, Vol. 27 Issue: 2, pp. 50-53.
- Blank, S. (2019). McKinsey's Three Horizons Model Defined Innovation for Years. Here's Why It No Longer Applies. *Harvard Business Review*. [online] Available at: <https://hbr.org/2019/02/mckinseys-three-horizons-model-defined-innovation-for-years-heres-why-it-no-longer-applies> [Accessed 11 February 2019].
- Brown, T. (2009). *Change by Design*. New York: HarperCollins.
- By, R.T. (2005). Organisational Change Management: A Critical Review. *Journal of Change Management*, Vol. 5 No. 4, pp. 369-380.
- Carlgren, L., Elmquist, M. and Rauth, I. (2016). The Challenges of Using Design Thinking in Industry - Experiences from Five Large Firms. *Creativity and Innovation Management*, Vol. 25 Number: 3, pp. 344-362.
- Cat.com, (n.d.). Cat Connect Technology and Services. [online] Available at: <https://www.caterpillar.com/en/company/sustainability/digital-vision.html> [Accessed 10 February 2019].
- Connell, S and Tenkasi, R. (2015). Operational Practices and Archetypes of Design Thinking. *Research in Organizational Change and Development*, Vol. 23. Emerald Group Publishing Limited, pp. 195-252.
- Conway, R., Masters, J. and Thorold, J. (2017). *From Design Thinking to Systems Change*. London: RSA
- Cross, N. (2006). *Designerly Ways of Knowing*. Basel: Birkhäuser.

Dawood, S. (2018). Pentagram's Natasha Jen: "Design is not a monster you 'unleash' to fix the world". [online] Designweek. Available at: <https://www.designweek.co.uk/issues/5-11-march-2018/pentagrams-natasha-jen-design-monster-unleash-fix-world/> [Accessed 23 July 2018].

Design Council. (2014). *Leading Business by Design - Why and how Business Leaders Invest in Design*. Warwick Business School and Design Council.

Doherty, R., Wrigley, C., Matthews, J. and Bucolo, S. (2015). Climbing the Design Ladder: Step by Step. *Revista D.: Design, Educação, Sociedade e Sustentabilidade*, Porto Alegre. 7. pp. 60-82.

Flick, U., Von Karfdoff, E. and Steinke, I. (eds.) (2004). *A Companion to Qualitative Research*. Reinbek bei Hamburg: Rowohlt Taschenbuch Verlag GmbH

Forrester. (2018). *The Total Economic Impact of IBM's Design Thinking Practice*. Forrester Research, Inc.

Frenkel, K. (2017). *Databases & Agility Key to Digital Transformation*. [online] CIO Insight. Available at: <https://www.cioinsight.com/it-strategy/enterprise-apps/slideshows/databases-agility-key-to-digital-transformation.html> [Accessed 3 August 2018].

Gartner. (2017). *Enterprise Architecture and Technology Innovation Leadership Vision for 2017*. Available at: [https://www.gartner.com/binaries/content/assets/events/keywords/enterprise-architecture/epaeul7/enterprise\\_architecture\\_and\\_tech-innovation.pdf](https://www.gartner.com/binaries/content/assets/events/keywords/enterprise-architecture/epaeul7/enterprise_architecture_and_tech-innovation.pdf) [Accessed 28 July 2018].

Gribbin, J., Young, R. and Aftab, M. (2016). Towards a holistic framework of design competence. 20th DMI: Academic Design Management Conference. Boston, July 2016, pp. 22-29

Gohrst, R. (2014). Are You Ready? Here Are The Top 10 Skills For The Future. *Forbes*, [online] Available at: <https://www.forbes.com/sites/sap/2014/05/12/are-you-ready-here-are-the-top-10-skills-for-the-future/#6467ac7dc34a> [Accessed 2 August 2018].

Govindarajan, V. and Trimble, C. (2010). *The Other Side of Innovation: Solving the Execution Challenge*. Boston: Harvard Business Review Press.

Hannola, L., Friman, J. and Niemimuukko, J. (2013). Application of Agile Methods in the Innovation Process. *International Journal of Business Innovation and Research*, Vol. 7 No. 1, pp. 84-98.

Holston, D. (2011). *The Strategic Designer*. Avon: Simon & Schuster.

Hoppmann, J., Rebentisch, E, Dombrowski, U and Zahn, T. (2011). A Framework for Organizing Lean Product Development. *Engineering Management Journal*, Vol. 23 No. 1, pp. 3-15.

Hutchinson, R. and Aré, L. (2018). *Digital Common Sense and Why Speed Is the New Scale*. [online] BCG. Available at: <https://www.bcg.com/publications/2018/digital-common-sense-speed-new-scale.aspx> [Accessed 10 September 2018].

- Ibm.com, (2018). Enterprise Design Thinking. [online] Available at: <https://www.ibm.com/design/thinking/> [Accessed 12 January 2018].
- IIT. (2017). Good Practice Guide, Innovation Management: Learning from the Experience of Companies in European Countries. [online] Available at: <http://www.iit-project.eu/deliverables/> [Accessed 18 May 2018].
- Johansson, U. and Woodilla, J. (2009). Towards an Epistemological Merger of Design Thinking, Strategy and Innovation. In: 8th European Academy Of Design Conference. [online] Aberdeen: The Robert Gordon University. Available at: [https://http://www.designfakulteten.kth.se/sites/default/files/1.44194TOWARDS\\_AN\\_EPISTEMOLOGICAL\\_MERGER\\_OF\\_DESIGN\\_THINKING\\_STRATEGY\\_AND\\_INNOVATION\\_JW.pdf](https://http://www.designfakulteten.kth.se/sites/default/files/1.44194TOWARDS_AN_EPISTEMOLOGICAL_MERGER_OF_DESIGN_THINKING_STRATEGY_AND_INNOVATION_JW.pdf) [Accessed 4 March 2018].
- Knapp, J., Zeratsky, J. and Kowitz, B. (2016). Sprint. [ebook] Simon & Schuster.
- Kohn, L. (1997). Methods in Case Study Analysis. The Center for Studying Health System Change. Technical publication No. 2.
- Kolko, J. (2015). Design Thinking Comes of Age. Harvard Business Review. [online] Available at: <https://hbr.org/2015/09/design-thinking-comes-of-age> [Accessed 29 May 2018].
- Korhonen, P. (2018). Re-thinking design thinking. [online] Nordkapp. Available at: <https://blog.nordkapp.fi/re-thinking-design-thinking-part-i-introduction-7b914387abc7> [Accessed 23 July 2018].
- Lambert, A. and Lambert, C. (eds.) (2012) Qualitative Descriptive Research: An Acceptable Design. Pacific Rim International Journal of Nursing Research, Vol. 16 No. 4, pp. 255-256.
- Liedtka, J. (2018). Why Design Thinking Works. Harvard Business Review. [online] Available at: <https://hbr.org/2018/09/why-design-thinking-works> [Accessed 6 January 2019].
- Liedtka, J. (2018). Exploring the Impact of Design Thinking in Action. Darden Working Papers Series. Charlottesville: Darden School of Business
- Liedtka, J., Salzman, R. and Azer, D. (2017). Democratizing Innovation in Organizations: Teaching Design Thinking to Non-Designers. Design Management Review, Vol. 28 Issue: 3, pp. 49-55.
- Martin, R. (2009). The Design of Business. Boston: Harvard Business Press.
- McKinsey. (2018). McKinsey Quarterly, The Business Value of Design. McKinsey Design. [online] Available at: <https://www.mckinsey.com/business-functions/mckinsey-design/our-insights/the-business-value-of-design> [Accessed 29 October 2018].
- Meixler, E. (2018). IBM Is Making Its Design Thinking Available to Clients, Says Its Design Chief. Fortune, [online] Available at: <http://fortune.com/2018/03/07/ibm-enterprise-design-thinking/> [Accessed 12 January 2018].
- Miettinen, S. (eds.) (2016). An Introduction to Industrial Service Design. Taylor & Francis, pp. 91-96.

Mueller, R. and Thoring, K. (2012). Design Thinking vs. Lean Startup: A Comparison of Two User-driven Innovation Strategies. In: *Leading Innovation through Design*. [online] Boston: Design Management Institute, pp. 151-161. Available at: [https://www.researchgate.net/publication/234066097\\_DESIGN\\_THINKING\\_VS\\_LEAN\\_STARTUP\\_A\\_COMPARISON\\_OF\\_TWO\\_USER-DRIVEN\\_INNOVATION\\_STRATEGIES](https://www.researchgate.net/publication/234066097_DESIGN_THINKING_VS_LEAN_STARTUP_A_COMPARISON_OF_TWO_USER-DRIVEN_INNOVATION_STRATEGIES) [Accessed 16 July 2018].

Murphy, P. (2017). Design Research: Aesthetic Epistemology and Explanatory Knowledge. *She Ji The Journal of Design, Economics and Innovation*, Vol. 3 Number: 2, pp. 117-132. Tongji University Press.

The Nordic Design Resource. (2018). Six Nordic Design Disciplines. Nordic Innovation. [online] Available at: <http://nordicdesignresource.com> [Accessed 27 December 2018].

O'Keefe, B. (2017). How IBM is Training Its Workforce to Think Like Designers. *Fortune*, [online] Available at: <http://fortune.com/2017/12/22/ibm-design-thinking/> [Accessed 12 January 2018].

Pine II, J. and Korn, K. (2011). *Infinite Possibility*. San Francisco: Berrett-Koehler Publishers, Inc.

Rapp, T., Gilson, L., Mathieu, J. and Ruddy, T. (2015). Leading Empowered Teams: An Examination of the Role of External Team Leaders and Team Coaches. *The Leadership Quarterly*, 27 (2016), pp. 109-123.

Ries, E. (2017). *The Startup Way*. [ebook] Portfolio Penguin.

Rittel, H. and Webber, M. (1973). Dilemmas in a General Theory of Planning. *Policy Sciences* 4, pp. 155-169.

Rousseau, J. (2015). The Case for Design Consulting, *Design Management Review*, Vol. 26 Issue: 3, pp. 13-15.

Salonen, A. (2011). *Service Transition Strategies of Industrial Manufacturers*. Elsevier Inc.

Sanders, E. and Stappers, P. (2008). Co-creation and the New landscapes of Design. *Co-Design*, Vol. 4, No. 1, pp. 5-18. [online] Available at: <https://doi.org/10.1080/15710880701875068> [Accessed 21 July 2018].

Schuh, G., Lenders, M. and Hieber, S. (2008). Lean Innovation: Introducing Value Systems to Product Development, PICMET '08 - 2008 Portland International Conference on Management of Engineering & Technology, Cape Town, 2008, pp. 1129-1136.

Seidel, V. and Fixson, S. (eds.) (2015). Design Thinking for Non-Designers: A Guide for Team Training and Implementation. Chapter 10 in "Design Thinking: New Product Development Essentials from the PDMA". New York: Wiley.

Sherman, M., Edison, S., Rehberg, B. and Danoesastro, M. (2017). Taking Agile Way Beyond Software. [online] BCG. Available at: <https://www.bcg.com/publications/2017/technology-digital-organization-taking-agile-way-beyond-software.aspx> [Accessed 10 February 2019].

Simon, M.K. and Goes, J. (2011). What is Phenomenological Research?. [online] Available at:<http://www.dissertationrecipes.com/> [Accessed: 28 August 2018].

Stickdorn, M. and Schneider, J. (eds.) (2011). *This is Service Design Thinking*. Amsterdam: BIS Publishers

Stickdorn, M., Hormess, M., Lawrence, A. and Schneider, J. (2018). *This is Service Design Doing*. Sebastopol: O'Reilly Media.

Still, K. (2017). Accelerating Research Innovation by Adopting the Lean Startup Paradigm. *Technology Innovation Management Review*, Vol. 7 Issue: 5, pp. 32-43. [online] Available at: <https://timreview.ca> [Accessed: 24 July 2018].

Verganti, R. (2008). Design, meanings and radical innovation: A meta-model and a research agenda. *The Journal of Product Innovation Management*, Vol. 25 Issue: 5, pp. 436-456.

Vinsel, L. (2017). Design Thinking is Kind of Like Syphilis—It's Contagious and Rots Your Brains. [online] Medium. Available at: [https://medium.com/@sts\\_news/design-thinking-is-kind-of-like-syphilis-its-contagious-and-rots-your-brains-842ed078af29](https://medium.com/@sts_news/design-thinking-is-kind-of-like-syphilis-its-contagious-and-rots-your-brains-842ed078af29) [Accessed: 23 July 2018].

Womack, J. and Jones, D. (2003). *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. 2nd ed. New York: Simon & Schuster.

# Appendix

## 1. IBM Enterprise Design Thinking competence badges and criteria

Badge criteria	Practitioner	Co-creator	Coach	Advocate	Leader
<b>Design research</b>	Name assumptions and questions about your users	Actively listen and observe during research activities and workshops Seek user insights to define what problems to solve Test prototypes with users to improve ideas Demonstrate empathy for users and clients	Support others as they practice design research Recognize quality design research and know when more is needed Help create design research plans	Find and develop relationships with Enterprise Design Thinking Sponsor Users	Collaboratively develop business strategy through design research and experimentation Ensure that design research, including Enterprise Design Thinking Sponsor User Programs, is present throughout the organization and informs team deliverables
<b>Collaboration</b>	Seek to work with others with different points of view	Ask for and give constructive feedback Share in-progress work with users Demonstrate empathy for team members and stakeholders	Guide diverse teams through observation, reflection, and making Lead design thinking activities and motivate others to participate Give thoughtful critique and feedback to Enterprise Design Thinking Hills, Playbacks, prototypes, etc.	Support and engage with teams during milestone Enterprise Design Thinking Playbacks Help identify and bring various stakeholders into projects Weigh in and help critique teams' Enterprise Design Thinking Hills	Empower teams to quickly and reliably deliver quality experiences Align organizations through cross-team Enterprise Design Thinking Playbacks Work with Coaches and Advocates to create healthy design thinking ecosystems
<b>Ideation</b>	Think big about how you can improve your users' experience	Evolve abstract ideas into concrete solutions Build on the ideas of others Generate many potential solutions	Help teams pivot during workshops, work sessions, or Agile iterations Explore different ways to apply design thinking activities based on the team's needs Lead teams through divergent thinking exercises	Assess a team's Enterprise Design Thinking progress and provide cues for improvement	Create new value for customers and users Brainstorm with teams to think divergently and strategically

<b>Storytelling</b>	Tell others about the value of Enterprise Design Thinking	Align with team members through Enterprise Design Thinking Playbacks Share design thinking experiences that establish credibility and inspire others	Share the outcomes achieved through Enterprise Design Thinking Author and present major Enterprise Design Thinking Playbacks to stakeholders, clients, and users	Set expectations for teams to work using Enterprise Design Thinking Invite key clients and users to participate in design sessions Reuse and distribute Enterprise Design Thinking artifacts made by teams across the organization	Elevate the consideration of diversity while forming and maintaining teams Share success stories of user-centered outcomes delivered by teams Internalize the Enterprise Design Thinking approach and speak to it in various contexts
<b>Synthesis</b>	Ask “why” and dig deeper to define your users’ problems	Seek patterns in user behavior Define user pain points and needs Recognize and resolve assumptions	Drive teams to reflect at key moments in time Guide efforts to analyze and synthesize research findings into critical insights	Recognize teams who are practicing Enterprise Design Thinking successfully	Take steps to foster a sustainable culture of design thinking within a particular organization Understand the landscape of your organization and where to focus design thinking initiatives
<b>Scoping</b>	-	Evaluate solutions based off of their value to users	Write Enterprise Design Thinking Hills and validate them with users Work with stakeholders to define outcomes and problem statements for scopes of work Encourage your team to scope down long-term ideas into the most essential parts of the experience	Identify and scope user-centered projects or initiatives for success	Organize teams around Enterprise Design Thinking Hills Prioritize user experience metrics alongside business goals
<b>Prototyping</b>	-	Give visual form to ideas	Use prototypes to test for user value and market demand Provide recommendations on what type and fidelity of prototypes are needed in a given situation	Sponsor quick-win projects that deliver great user experiences	Experiment around the conditions teams need to succeed using design thinking
<b>Scaling</b>	-	-	Mentor your colleagues on their path to Co-Creator or Coach Actively measure and drive the adoption of Enterprise Design Thinking on teams	Evangelize the outcomes of successfully applying Enterprise Design Thinking to business users Promote Enterprise Design Thinking badges to upskill teams Partner with Enterprise Design Thinking Leaders to ensure teams are successfully practicing design thinking	Drive measurable change across your organization toward the adoption of Enterprise Design Thinking Inspire individuals through people-centered goals and expectations



## 2. Interview guide questions

### Coaches

#### Background

- Interviewee's education and position/title
- Describe your role and personal goals in the programme. What led to your participation?

#### Expectations

- What kind of preparation the project required? Were there earlier learnings and what risks were identified concerning your role?
- How do you think your design background prepared you for the project?

#### Process

- Shortly describe the starting point for your project team.
- Describe your experiences during different phases of the programme
- In general, preliminary phase, Problem, Solution, Business, after
- How would you describe the relevance and roles of different process frameworks?
- Design thinking, lean startup, service design, agile
- How would you describe the role of design in different stages of the process?
- Describe your interaction and collaboration with the project team.
- What are key challenges in facilitating learning of design and design thinking? Which methods and tools did you prefer?
- Describe the collaboration with the client organisation?
- How did you feel about the responsibilities between the different actors in the programme (coaches, mentors, BA sponsors, experts)

#### Reflection

- How well did the team achieve programme goals? What were the key challenges and success areas?
- How well did the participants understand design and its value?
- What would you recommend to study or learn to prepare for such a programme? What skills were the most important?
- How do you think of your role as an external consultant affected to the execution of the programme? What challenges and benefits there were?

### Idean programme management

#### Background

- Interviewee's age, education and position/title (at the time of participation)
- Describe your role and personal goals in the programme. How were you involved?

#### Expectations

- Why was this project interesting for Idean? What kind of goals there were?

- What planning the project required? Were there earlier learnings or risks that were identified concerning Idean's part in the programme?
- What qualities / experience did you look for when assigning designers to the project?

### Process

- How did you plan the structure of the programme? How did it work?
- How different process frameworks were present when composing the offer and planning the programme (DT, lean startup, service design, agile)?
- How would you describe the role of design in the programme / in different stages of the process?
- Describe your interaction and collaboration with the project teams / client organisation during the programme(s).
- What are key challenges in facilitating learning of design and design thinking?
- How did you feel about the responsibilities between the different actors in the programme (coaches, mentors, BA sponsors, experts)

### Reflection

- How well did the Idean's team achieve programme goals (both own and set by client)? What were the key challenges and success areas?
- How well did the client understand design (DT) and its value?
- Why designers should be facilitating a business development process?
- How do you think Idean's role as an external actor affected to the execution of the programme? What challenges and benefits there were?

## ProCorp team

### Background

- Interviewee's age, education and position/title
- Describe your role in the team. What lead to your participation?

### Expectations

- What kind of expectations did you have for the programme? Both personal and for the team / concept?

### Process

- Shortly describe the starting point for your project team.
- How did the structure of the programme work for you? Describe your experience in each phase.
- How did you feel about the new tools and methods? Would consider using them in some way in your future work?
- Describe your interaction and collaboration with the coach.
- Did you get enough support? Were there any specific areas you would have needed more help with?

### Reflection

- How well did the team achieve programme goals? What were the key challenges?
- What have you learned during the programme? Where did most of it happen?
- What does design mean to you? Was it present during the programme?

### 3. Data analysis summary

#### Coaches

##### Key activities

Checking idea is mature enough for programme

- Raw ideas need more research and concept crystallisation. More mature ideas need help with details and pure business competence.
- Coach should get to know the team's and their idea, what it lacks and what can be done before kickoff.
- Flaws in maturity hinder team's progress in the programme compared to others, which is demoralising.
- It helped that the idea was part of larger vision related to a future scenario
  
- Ensuring team commitment and expectations regarding time, motivation and purpose
- Some people didn't have enough allocation and some just dropped off.
- Before the programme starts the team has to be united around the same ambition and goal. After kickoff, there's no time to concentrate on aligning the team anymore.
- Getting to know the team and the opportunity.

Arranging access to customers

- Customer validations and problem definition are the most important elements.
- Team running out of customer contacts or didn't have a frontline person with customer access.
- It's not realistic to get all the interviews booked during the first week.

Follow and facilitate schedule, goals, responsibilities and decision making

- Weekly structure was easy to follow and didn't require too much time.
- Coach is an enabler and makes sure that team has all the possibilities to succeed.
- Coach shouldn't do the work for the team. Concept owner leads and takes the responsibility of the development.

##### Process

First workshop is critical to make good first impact and for starting the collaboration

- Participants have very high expectations. Demanding to keep up the energy levels and balance between information and activities.
- First impression in the start is crucial - it is hard to change a bad experience.
- You need to be diplomatic, show your credentials and convince people of your skills.
- Examples and testimonials work well.

Exploring and validating the problem cause the most memorable realisations and frustrations

- There is an urge to go straight to solutions. Coach needs to properly explain the purpose of the Problem phase.
- There is not a single team who went to talk to the customer and came back saying it wasn't a good idea.
- It is very difficult to get people to understand the importance of validations and preparing the customer interviews for them. "They only know it when they feel it."

Balancing between adapting to individual team needs and following programme structure

- Teams got excited when they found new angles to their concept with new tools. Every team has individual needs and same tools might not bring same value to all.
- Coach should help to produce best possible main deliverables for the team to take the concept forward.
- Teams who had less communication with coaches struggled to make progress.

## Expertise

Business needs more foundational integration

- The programme is an overlap of service and business design.
- Being able to speak about benefits of design but in the language of business management. Might not be possible for person with only service design background.
- Ability to validate is customer prepared to pay for the solution a price that covers the cost and maintenance of the service.
- Using service design for iterating and validating business or pricing models. Not necessarily a product or service.

More radical ideas might increase the necessity for external expertise

- Team members being out of own domain or having too specific knowledge.
- Not having experience in seeing different business models and knowing which ones are prone to fail.
- The level of required business expertise needs to be acknowledged according to maturity of business models and team member competence.

Inside-out vs. outside-in approach - industry and organisation

- In this kind of work you need to become an industry specialist, especially in B2B
- Fresh pair of eyes free of legacy can help to see the focus more clearly.
- Being a mediator between people would have been important for coach but it was difficult without proper internal connections.

## Programme setting

Increasing speed to market while some ideas will fail

- Main objective is to prepare concepts for further development and execution.
- Only failure in this programme is that if you don't learn anything. Without the programme many concepts would have taken years to develop.
- Execution of concepts after the programme has been an issue.

Learning new ways of working

- Willing to take risk and receive feedback from unfinished work to build better solutions and higher benefit for the customer.
- Educational role of the programme vs. efficiency to develop concepts.
- Working together with other teams is fun and creates positive competition but benefits from synergy could be greater.

Design is invisible but everywhere

- Design thinking as a mindset, service design in methods.
- Demand is for new ways of working, simplicity, clarity, speed, new tools, concrete ideas and results
- “This is a business accelerator. It wasn’t defined whether we used design or something else.”
- Visualisation of information for presentations and solution prototypes is an important skill.

## Idean programme management

### Key activities

Shortlisting and screening of teams and ideas needs a process and more rigour

- Opportunities should be checked for their alignment with strategy and have some evaluation of their return of investment.
- There should be more attention paid to person validation.
- Pre-phase should be described as an integral part of the programme.

Communication needs more planning for wider outreach

- To spread the value of the programme and attract better ideas, there needs to be a good plan for internal communication.
- Who the transformation is supposed to be sold?
- The comm teams of business areas had different interests and ways to handle communication.

### Process

Facilitators need courage to challenge people in their own territory

- Instead of user needs, a designer needs to understand working with the organisation.
- Speaking about design in the language of business.
- Being constantly out of the comfort zone when working in the strategic field

Workshops are critical for collaboration

- Physical presence and being together in the same space create the big leaps.
- Facilitator has to bring energy and inspiration to the big workshops.
- Motivate with storytelling, examples and hero stories.

## Expertise

Designers need to learn skills of entrepreneurs

- Facilitators need to develop their knowledge fast enough as the programme goes on.
- The business plan needs to be iterated and modified right from the beginning.
- Designer has a mental and physical toolbox for finding the right problems to solve and validating different hypothesis.

Designers should actively communicate about their own capabilities

- The client's domain is challenging to understand. The designer cannot jump right into solutions but has to help the expert to think about their own competence.
- Teams haven't used their budget for building and visualising solutions. Designers need to show the meaning and power of visual communication in presentations and prototypes.

## Programme setting

Programme is a decision making tool

- The sole idea of this is the speed for market and that is the only thing why this is being done.
- Customer, benefit and utility are identified and business model and design are validated.
- It doesn't need to be an accelerator model such as the this. We have tried a similar process for single 100 % allocated teams.

## ProCorp team

### Key activities

There shouldn't be any bargaining of customer validations

- It took a great deal of time to arrange the customer meetings.
- Running short of contacts.
- Should validate at least with three customers to get enough diversity

Team had a good attitude and worked well together

- Innovation must be done face to face. "We are in the same garage."
- Same location, own war room and a good team spirit.

### Process

Facilitator quickly managed to become part of the team

- Facilitator took care that the team is on schedule and gave guidance. Always got the support that was asked.
- Giving space when team gets into working mode and pushing when the pace goes down.
- "There's always suspicion towards an outsider but at least there isn't anymore."

Talking to customers was a great learning experience

- Most didn't have problem talking to customers and it was considered a fun activity.
- Creating assumptions for interviews was a good tool.
- Discussions with customers happen but it's usually about a problem they already have.

Decision making should have a clear process and rules

- It wasn't that clear decisions were final. "It kept the backdoor open."
- There were too many ideas around and the Decider had to step in to pick a direction.
- We should recognise the critical assumptions.

## **Expertise**

Difficulties in choosing the right customer segment and stakeholders

- Not having enough contacts for business deciders
- All customers are not interested to adapt to new solutions.

More help with the numbers

- It is really hard to get the customers tell how much they are willing to pay.
- Would have needed better tools and templates to help to think costs and revenue.
- BMC was generally liked and best remembered tool.

## **Programme setting**

Not finding a viable business case didn't ruin the experience

- Many innovation projects are expected to fail. There is still learning.
- Very comprehensive analysis in general. This process puts the bar high to get clean papers.
- The programme could have been more explorative.

Interest to test how elements of the programme could be applied more widely

- Improving the R&D hitrate.
- Learnings from team dynamics with multidisciplinary team. In the future, innovations will come horizontally, not vertically.

No design

- Not aware design or design thinking being somehow relevant in the programme.
- Very little or even wrong knowledge about design and design thinking in general.

Facilitating a design-led business innovation process to validate new business opportunities in multidisciplinary teams - A case study of a business accelerator programme in an industrial machinery manufacturing company

Master's thesis

Otso Leppänen  
Aalto University School of Arts, Design and Architecture  
International Design Business Management  
Helsinki, 2019

Advisor: Anne Oljelund  
Supervisor: Peter McGrory