

IF YOU CAN THINK IT, WHY NOT DESIGN IT?

Study of design thinking practices and challenges in
three large Finnish companies

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Abstract

As the world around us continues to change and forces new kinds of restraints and pressure on companies, the organizations' capability to innovate becomes ever more important. Some research suggests that design thinking could help organizations innovate their products and services, organizational processes, as well as customer experiences in new and better ways, and therefore create competitive advantage. In this study, I examined three large Finnish companies and their design thinking implementation. The overarching empirical goal of this study was to research how design thinking is perceived in these organization as well as in what ways design thinking has been implemented in them.

In order to address this research problem, the following research questions guided this study: *Why and how is design thinking implemented in large Finnish companies?*, as well as *What are the factors that enable or challenge the implementation of design thinking in large Finnish companies?* To answer these research questions, the research followed a case study methodology, with each of the three companies forming a case. Empirical data was collected through ten semi-structured interviews with a total of eleven interviewees. Thematic analysis was used to analyze the data, allowing the formation of meaningful codes, sub-themes and themes from patterns of data.

My study concludes that based on the experiences of these three case companies, there exists a process model for the design thinking implementation. This model includes four phases for the implementation of design thinking (Awakening, Dating, Honeymoon, Maturing), four gateways between these phases (Gateways of Understanding, Permission, Proof, and Acceptance), as well as a variety of factors that challenge and support the overall implementation process. Overall, the model provides an example of what the implementation of design thinking can be like in an organization.

Organizational implementation of design thinking can still be viewed as a relatively unmapped area of research. While this study proposes that a certain process model can be formed regarding the general implementation process of design thinking, further research and cases should be examined to validate the findings of this thesis. The aims of this study are therefore to offer interesting findings and grounds for the further research, and through that commit to the overall discourse of design thinking.

Keywords design, design thinking, design transformation, organisational change, design leadership

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Työn nimi Jos sen voi ajatella, niin miksei myös muotoilla? – Tutkimus muotoiluajattelutoimista ja -haasteista kolmessa suuressa suomalaisyrityksessä

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Tiivistelmä

Maailmaamme kohtaava jatkuva muutos pakottaa yrityksiä toimimaan uusilla tavoilla, jonka johdosta organisaatioiden kyky innovoida muuttuu yhä tärkeämmäksi. Jotkut tutkimukset viittaavat siihen, että ns. muotoiluajattelu (engl. *design thinking*) voisi auttaa organisaatioita innovoimaan tuotteita ja palveluita, organisaation sisäisiä prosesseja, sekä asiakaskokemuksia paremmalla tavalla, luoden siten kilpailuetua yrityksille. Tarkastelin tässä tutkimuksessa kolmea suurta suomalaista yritystä ja sitä kuinka muotoiluajattelu ilmenee näissä organisaatioissa. Tutkimuksen empiirinen tarkoitus oli tutkia, miten muotoiluajattelu ymmärretään näissä organisaatioissa sekä millä tavoin se on jalkautettu osaksi organisaatiota.

Seuraavat tutkimuskysymykset ohjasivat tutkimustani: *Miksi ja miten muotoiluajattelu on otettu osaksi suurten suomalaisyritysten organisaatiota?* sekä *Mitkä tekijät edesauttavat tai estävät muotoiluajattelun jalkauttamista suurissa suomalaisyrityksissä?* Ratkaistakseni nämä tutkimuskysymykset, tutkimus tehtiin tapaustutkimuksena, jossa kukin kolmesta yrityksestä muodosti oman tapauksensa. Tutkimuksen empiirinen data kerättiin kymmenen puolistrukturoidun haastattelun avulla, jotka kattoivat yhteensä yksitoista haastateltavaa. Datan analysointiin käytettiin temaattista analyysiä, joka mahdollisti datasta nousseiden löydösten luokittelun sekä syntetisoinnin.

Tutkimustulokseni esittävät näiden kolmen yrityksen kokemusten perusteella mallin muotoiluajattelun jalkauttamisprosessista. Tämä malli koostuu neljästä muotoiluajattelun jalkauttamisvaiheesta (heräämis-, seurustelu-, kuherruskuukausi-, ja vakiintumisvaihe), näiden neljän vaiheen väliin sijoittuvista ns. porttivaiheista (ymmärryksen, luvan, todisteiden, ja hyväksynnän portit), sekä monista jalkauttamisprosessia tukevista sekä haastavista tekijöistä. Kaiken kaikkiaan malli tarjoaa esimerkin siitä miten muotoiluajattelu voidaan organisaatiossa jalkauttaa.

Yleisesti ajatellen muotoiluajattelun jalkauttamiseen liittyviä tutkimuksia voidaan sanoa olevan edelleen melko vähän. Vaikka tämä tutkimus osoittaaakin että eräänlainen prosessimalli voidaan muodostaa muotoiluajattelun jalkauttamiseen liittyen, näiden tulosten validoiminen vaatisi lisää samankaltaisia tutkimuksia tulevaisuudessa. Tämän tutkimuksen tavoitteena on näin ollen tarjota mielenkiintoisia havaintoja ja pohjaa tulevalle tutkimukselle, ja sitä kautta ottaa osaa muotoiluajattelun ympärillä käytävään keskusteluun.

Avainsanat design, muotoilu, muotoiluajattelu, design-muutos, organisaatiomuutos, luova johtaminen

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Finally, I would like to give my warmest thanks to my boyfriend, all my dear friends, as well as my family, for the limitless support and encouragement throughout my studies, and especially during this thesis process. Thank you for making sure that I have not spent all of my student years continuously stressed out, and that I have gotten to share these amazing years with you.

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TABLE OF CONTENTS

1. INTRODUCTION	12
1.1. BACKGROUND	12
1.2. RESEARCH OBJECTIVES AND QUESTIONS	14
2. LITERATURE REVIEW	15
2.1. DESIGN, AN ELUSIVE DISCIPLINE	16
2.2. DESIGN THINKING, A COMPLEX PHENOMENON	18
2.2.1. INTRODUCTION	18
2.2.2. SEEING AND UNDERSTANDING: DESIGN THINKING AS SENSEMAKING	21
2.2.3. OUT-OF-THE-BOX: DESIGN THINKING AS PROBLEM-SOLVING	22
2.2.4. FROM IDEA TO EXECUTION: DESIGN THINKING AS AN ACT OF CREATION	23
2.2.5. LEARNING AND ADAPTING: DESIGN THINKING AS REFLECTION	25
2.2.6. INTERRELATED AND INTERDEPENDENT: A CIRCULAR PROCESS	26
2.3. DESIGN THINKING IN MANAGEMENT PRACTICE	27
2.3.1. TRADITIONAL MANAGEMENT VS. DESIGN THINKING	27
2.3.2. DESIGN THINKING PRACTICES AND METHODS	29
2.4. CHALLENGES AND PROBLEMS OF DESIGN THINKING	35
2.4.1. IMPLEMENTATION ISSUES	35
2.4.2. CONTRASTING CULTURES OF WORKING	36
2.4.3. SHIFTS IN POWER DYNAMICS	37
2.4.4. PROVING THE VALUE OF DESIGN THINKING	38
2.4.5. SKILLS ARE DIFFICULT TO LEARN	39
2.5. THEORETICAL STANDPOINT FOR THIS STUDY	39
3. METHODOLOGY	42
3.1. RESEARCH PHILOSOPHY	42
3.2. QUALITATIVE RESEARCH DESIGN	43
3.3. CONTEXT OF STUDY	44
3.4. METHODOLOGICAL GUIDELINES: CASE STUDY RESEARCH	44
3.5. BUILDING THE CASES	45
3.6. DATA COLLECTION	46
3.7. THEMATIC ANALYSIS OF DATA	48
3.7.1. DEFINITIONS	48
3.7.2. THE PHASES OF THEMATIC ANALYSIS	49
3.8. TRUSTWORTHINESS OF STUDY	55
3.9. ETHICAL CONSIDERATIONS	56

4. EMPIRICAL FINDINGS	59
4.1. AWAKENING PHASE: WHAT IS DESIGN THINKING?	60
4.1.1. HOW IS DESIGN THINKING DEFINED?	61
4.1.2. WHAT ARE THE ELEMENTS OF DESIGN THINKING?	62
4.1.3. GATEWAY OF UNDERSTANDING	63
4.2. DATING PHASE: WHY SHOULD OUR COMPANY IMPLEMENT DESIGN THINKING?	64
4.2.1. INTERNAL MOTIVATIONS	65
4.2.2. TO GAIN COMPETITIVE ADVANTAGE	65
4.2.3. ORGANIC REASONS	66
4.2.4. EXTERNAL INFLUENCES	66
4.2.5. GATEWAY OF PERMISSION	67
4.3. HONEYMOON PHASE: HOW DO WE IMPLEMENT DESIGN THINKING IN OUR ORGANIZATION?	68
4.3.1. RAISING AWARENESS INTERNALLY IN THE ORGANIZATION	69
4.3.2. ESTABLISHING DESIGN GUIDELINES	70
4.3.3. INITIAL MEASUREMENTS FOR ROI OF DESIGN	70
4.3.4. DESIGN AS AN ORGANIZATIONAL FUNCTION	71
4.3.5. DESIGN AS PART OF THE DEVELOPMENT PROCESSES	71
4.3.6. RECEPTION OF THE ORGANIZATION	71
4.3.7. GATEWAY OF PROOF	72
4.4. MATURING PHASE: HOW IS DESIGN THINKING AN EMBEDDED PART OF OUR ORGANIZATION?	73
4.4.1. MORE SYSTEMATIC MEASUREMENTS FOR ROI OF DESIGN	74
4.4.2. DESIGN IS EXECUTED AT THREE LEVELS	74
4.4.3. UNIFIED DESIGN ORGANIZATION	75
4.4.4. DESIGN EXPANDS FROM DEVELOPMENT TO BUSINESS	75
4.4.5. APPRECIATION OF THE ORGANIZATION	76
4.4.6. GATEWAY OF ACCEPTANCE	76
4.5. SUPPORTING FACTORS IN IMPLEMENTING DESIGN THINKING	77
4.5.1. PERSONAL ATTRIBUTES AND SKILLS	78
4.5.2. THE RIGHT KIND OF PEOPLE	78
4.5.3. MANAGEMENT SUPPORT	79
4.5.4. SHOW, DO NOT TELL	79
4.5.5. COMPANY CULTURE	80
4.5.6. SURROUNDING ORGANIZATION	80
4.5.7. SUPPORTING FACTORS: WHEN AND WHERE?	81
4.6. CHALLENGING FACTORS IN IMPLEMENTING DESIGN THINKING	84
4.6.1. EMPLOYEE CHALLENGES	85
4.6.2. LACK OF DESIGN LEADER	86
4.6.3. MINDSET ISSUES	86
4.6.4. INEFFECTIVE IMPLEMENTATION	87
4.6.5. CHALLENGES OF CHANGE	87
4.6.6. CHALLENGES OF DESIGN THINKING	87
4.6.7. CREDIBILITY ISSUES	88
4.6.8. ORGANIZATIONAL CHALLENGES	88
4.6.9. CHALLENGING FACTORS: WHEN AND WHERE?	89
4.7. CONCLUSION: A DESIGN THINKING IMPLEMENTATION PROCESS MODEL	93

5. DISCUSSION	94
5.1. DESIGN THINKING AS A TERM: DECIDEDLY AMBIGUOUS	95
5.2. MORE THAN COMPETITIVE ADVANTAGE AND IMPROVED PROCESSES	97
5.3. IMPLEMENTING DESIGN CHANGE VS. MEASURING IT	99
5.4. CHALLENGES OF ALL TYPES, SHAPES, AND SIZES	102
5.5. CLEAR SIGNS OF SUPPORT	106
6. CONCLUSION	110
6.1. RESEARCH SUMMARY	110
6.2. MANAGERIAL IMPLICATIONS	111
6.3. LIMITATIONS OF STUDY	112
6.4. SUGGESTIONS FOR FUTURE RESEARCH	113
REFERENCES	116
APPENDICES	124
APPENDIX 1: EMPIRICAL FINDINGS – TABLES OF VIVID DATA EXTRACTS	124

LIST OF TABLES

TABLE 1: THE DEFINITIONS OF DESIGN IN DESIGN CONTEXT (ADAPTED FROM LOVE, 1998).....	17
TABLE 2: DESIGNERLY THINKING DISCOURSES (JOHANSSON-SKÖLDBERG ET AL., 2013).....	20
TABLE 3: DESIGN THINKING DISCOURSES IN MANAGEMENT (JOHANSSON-SKÖLDBERG ET AL., 2013).....	20
TABLE 4: CASE OVERVIEWS.....	46
TABLE 5: THEMATIC ANALYSIS – PHASE 2: GENERATING INITIAL CODES.....	51
TABLE 6: THEMATIC ANALYSIS – PHASE 3: SEARCHING FOR THEMES.....	52
TABLE 7: THEMATIC ANALYSIS – PHASE 4: REVIEWING THEMES.....	53
TABLE 8: EXAMPLES OF THE AWAKENING PHASE - ILLUSTRATIVE EXCERPTS.....	124
TABLE 9: EXAMPLES OF THE DATING PHASE - ILLUSTRATIVE EXCERPTS.....	126
TABLE 10: EXAMPLES OF THE HONEYMOON PHASE - ILLUSTRATIVE EXCERPTS.....	129
TABLE 11: EXAMPLES OF THE MATURING PHASE - ILLUSTRATIVE EXCERPTS.....	133
TABLE 12: SUPPORTING FACTORS OF DESIGN THINKING IMPLEMENTATION - ILLUSTRATIVE EXCERPTS..	137
TABLE 13: CHALLENGING FACTORS OF DESIGN THINKING IMPLEMENTATION - ILLUSTRATIVE EXCERPTS	142

LIST OF FIGURES

FIGURE 1: ILLUSTRATION OF THE LITERATURE REVIEW'S STRUCTURE.....	15
FIGURE 2: DESIGN THINKING AS A CIRCULAR PROCESS.....	26
FIGURE 3: THE THEORETICAL STANDPOINT FOR THIS STUDY.....	40
FIGURE 4: SIX MAIN THEMES OF THE ANALYSIS IN THE FORM OF A PROCESS GRAPH.....	54
FIGURE 5: DESIGN THINKING IMPLEMENTATION PROCESS IN LARGE FINNISH COMPANIES.....	59
FIGURE 6: AWAKENING PHASE AND THE GATEWAY OF UNDERSTANDING.....	60
FIGURE 7: DATING PHASE AND THE GATEWAY OF PERMISSION.....	64
FIGURE 8: HONEYMOON PHASE AND THE GATEWAY OF PROOF.....	68
FIGURE 9: MATURING PHASE AND THE ATEWAY OF ACCEPTANCE.....	73
FIGURE 10: SUPPORTING FACTORS IN IMPLEMENTING DESIGN THINKING.....	77
FIGURE 11: SUPPORTING FACTORS: AWAKENING PHASE & GATEWAY OF UNDERSTANDING.....	81
FIGURE 12: SUPPORTING FACTORS: DATING PHASE & GATEWAY OF PERMISSION.....	82
FIGURE 13: SUPPORTING FACTORS: HONEYMOON PHASE & GATEWAY OF PROOF.....	83
FIGURE 14: SUPPORTING FACTORS: MATURING PHASE & GATEWAY OF ACCEPTANCE.....	84
FIGURE 15: CHALLENGING FACTORS IN IMPLEMENTING DESIGN THINKING.....	85
FIGURE 16: CHALLENGING FACTORS: AWAKENING PHASE & GATEWAY OF UNDERSTANDING.....	89
FIGURE 17: CHALLENGING FACTORS: DATING PHASE & GATEWAY OF PERMISSION.....	90
FIGURE 18: CHALLENGING FACTORS: HONEYMOON PHASE & GATEWAY OF PROOF.....	91
FIGURE 19: CHALLENGING FACTORS: MATURING PHASE & GATEWAY OF ACCEPTANCE.....	92
FIGURE 20: THE CORE THEMES OF THIS RESEARCH AND EMPIRICAL FINDINGS.....	94
FIGURE 21: DESIGN LADDER MODEL (DANISH DESIGN CENTER, 2015) VS. DESIGN THINKING IMPLEMENTATION PROCESS.....	100

1. INTRODUCTION

*“No, Watson, this was not done by accident, but by design.”
-Sherlock Holmes*

1.1. Background

We live today in a world of constant change and transformation. The intervals between the technological, social, and cultural changes are getting increasingly shorter, resulting in a world where societies, companies and individuals need to constantly renew themselves and their knowledge in order to keep up. The ones who fail to adapt will quickly find themselves falling behind the curve while the ones who learn to think differently will rise to succeed (Ito & Howe, 2016).

In the global markets these changes have left a lasting mark. In the developed countries where people already seem to have everything they need, globalization, born-global companies and industries, as well as the ever-accelerating development rate of new technologies have ensured that a successful business can arise from anywhere at any time. Products and services can be bought online from anywhere by anyone at any given time. As more of people’s basic needs are covered, customer expectations rise, and creating appealing products and services becomes more challenging for companies (e.g. Brown, 2008; Martin, 2010; Volkova & Jakobson, 2016). Sustaining competitive advantage is challenging as markets, industries, companies’ internal processes, and customer’s desires change rapidly.

The ability to rapidly innovate and create new innovations has become one of the most important factors for companies to gain competitive edge in today’s world (e.g. Beckman & Barry, 2007; Brown, 2008; O’Connor, 2008; Crossan & Appaydin, 2010; Martin, 2010; Govindarajan et al., 2011; Cabello, 2015). Plenty of research has been done about the innovation management practices of companies over the years (e.g. Acs & Audretsch, 1988; Dougherty, 1992; Leifer, 2000; Wessel, 2012; Girotra & Netessine, 2013; Deeb, 2014), and it seems that in general start-ups with their flat hierarchy and flexible organizations appear more ideal for incubating and creating successful innovation ideas, and that the larger the company becomes, the stiffer

these processes and capabilities become. It could therefore be argued that in order for large companies to be able to compete with young and upcoming startups, react and adapt to the swift changes in the industries, and to maintain a competitive advantage, new ways to inspire creative thinking and manage innovation processes in companies are required. This transformation has special urgency, since European Commission's (2015) Innobarometer 2015 showed that out of the approximately 9,500 surveyed companies, only 18% of them invested more than 5% of their previous year's turnover in innovation. In the world where renewing your business and innovation are basic requirements (e.g. Henderson, 2017; Rossman, 2018), these numbers need to grow in order for companies to remain in the game.

In recent management literature, design thinking has been presented e.g. as a way for companies to break innovation barriers (e.g. Holloway, 2009; Liedtka, 2014), solve wicked problems (e.g. Rittel & Webber, 1973; Buchanan, 1992; Dorst, 2011; Holloway, 2009; Lam, 2017; Shapira et al., 2017; Elsbach and Stigliani, 2018), and improve internal processes and develop better products and solutions with a more customer-centered focus (e.g. Brown, 2008; Martin, 2010). As a whole, it has been argued to be something that may be beneficial for overall business and management (e.g. Elsbach and Stigliani, 2018). However, employing design thinking in companies can be difficult (e.g. Carlgren et al., 2016; Lockwood, 2009; Kupp et al., 2017). Despite the buzz revolving design thinking, literature regarding its challenges and implementation in organizations remains a relatively unmapped area of research (Dunne & Martin, 2006; Carlgren et al., 2014; Carlgren et al., 2016). This gap is especially relevant in the context of Finnish companies, since as the author of this thesis I could not find a study with a focus on specific Finnish companies' design practices and challenges, and only a few regarding design thinking in Finnish organizations in general (e.g. Mutanen, 2008; Miettinen, 2014). While the phenomenon of design thinking and its overall importance is discussed in the Finnish academia in an excellent manner by e.g. Miettinen (2014) as well as in the global research contexts (e.g. Hassi & Laakso, 2011a; Hassi & Laakso, 2011b), more in-depth and concrete company-level research regarding the specific practices and challenges of design thinking in Finnish companies remains a rather unmapped area.

When all this is taken into consideration, there could be argued to exist a need for further research regarding how Finnish companies adopt and disseminate design thinking in their organizational settings, as well as on what challenges they have faced and how they have dealt with those challenges, in order to determine whether design thinking could be a viable source of competitive advantage for companies. This is the area of academic literature to which this thesis aims to contribute to with its research objectives and questions.

1.2. Research objectives and questions

The research objective of this thesis is to offer a snapshot view of how and for what reasons large Finnish companies have adopted and disseminated design thinking within their organizations. Inspired by the study conducted by Carlgren et al. (2016), this thesis aims to offer further insights on how large Finnish companies perceive and understand design thinking, how companies are justifying the use and employment of design thinking, and how it could be more successfully implemented in organizations.

Therefore, the research questions guiding this thesis are as follows:

- 1. Why and how is design thinking implemented in large Finnish companies?*
- 2. What are the factors that enable or challenge the implementation of design thinking in large Finnish companies?*

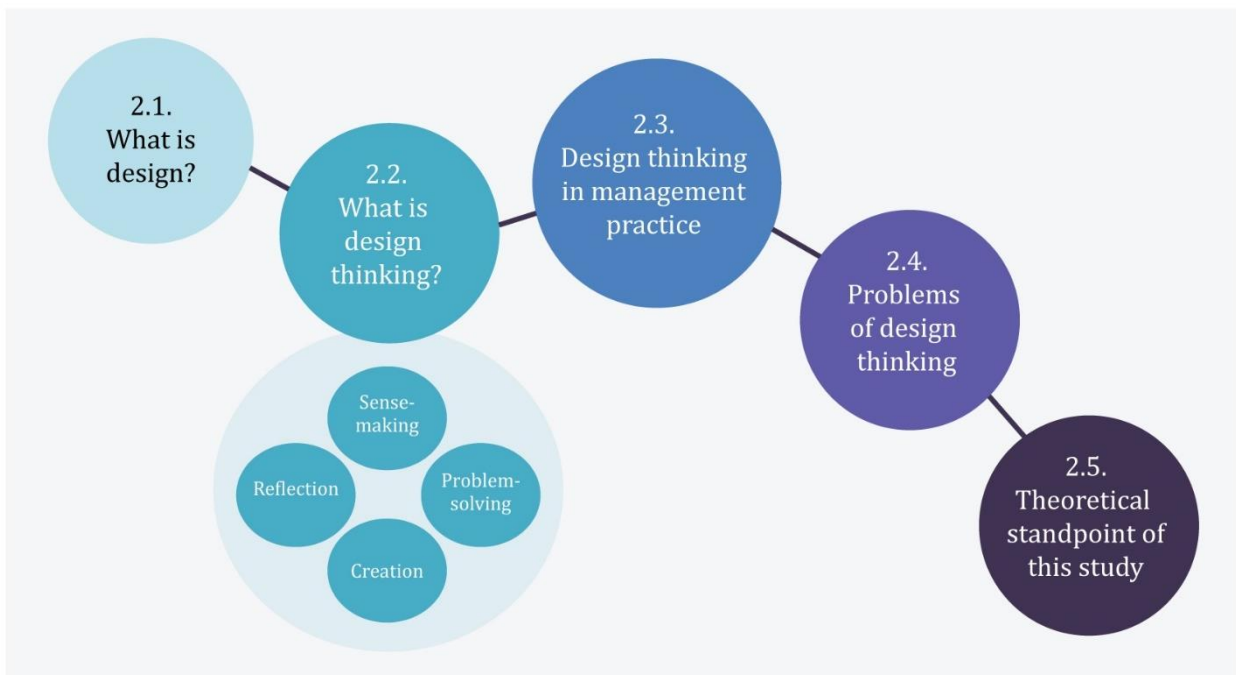
The findings to these research questions will be analyzed and compared with the extant literature and existing theories, in order to further contribute to the more large-scale discussion of design thinking by offering comparisons between the literature and the real-life use of design thinking in Finland. Additionally, based on the findings of this thesis, a discussion for possible managerial implications and a set of best practices for organizational setting will be included.

2. LITERATURE REVIEW

*"Design is not just what it looks like and feels like. Design is how it works."
-Steve Jobs (Walker, 2003)*

Within her paper, Kimbell (2011) cites Rylander (2009a) by stating that 'it's hard enough understand design and thinking, let alone design thinking' (Kimbell, 2011: 288). However, this chapter attempts to offer the reader some level of understanding of what the different phenomena related to design thinking are, and what are their meanings in the managerial world of today. The first section of this review explores the definition of design and discusses the foundation on which design thinking has been built. The next section then examines the existing theories and discourses revolving design thinking, both in the realm of design and management. Following that, the focus shifts onto literature regarding the practical use of design thinking in the management context, as well as the challenges and problems relating to design thinking. Finally, a concluding chapter summarizes the key takeaways of the extant literature within the frame of this thesis. Figure 1 below visualizes this structure of this literature review.

Figure 1: Illustration of the literature review's structure



2.1. Design, an elusive discipline

It is said that a beloved child has many names, and in the case of determining the meaning of design this can be considered to be true. Literature concerning design and its meaning seem in general very fragmented, with several co-existing explanations and descriptions given to it (Love, 1998; Filippetti, 2011). As with many other disciplines and concepts, the definition of design has undergone several transformations over the years (e.g. Simon, 1969; Cross, 1982, 2006; Love, 1998), and even today it could be argued to not have one clear definition (e.g. Love, 1998; Filippetti, 2011; Kimbell, 2011).

Some of the descriptions of design given in earlier years rely on a strong emphasis on design's role in utilizing the scientific principles and technology in creating value (e.g. McCrory, 1966; Eder, 1966) while others seem to have taken a more humane approach and seen design as a way to imagine something new to create human satisfaction (Eder, 1966; Gregory, 1966; Motard, 1974). A strong emphasis seems to have also been given to design's nature as a process that creates something new (e.g. Simon, 1969; Duggan, 1970; Alexander, 1971). Some had also tried to solve these definition issues by creating broad and vague definitions that aim to explain design in as neutral and broad terms as possible (e.g. Middendorf, 1969).

A particularly extensive research made by Jones (1970) provides a summary of definitions given to design in the past, including such views of design as: determining the correct physical parts that form a structure; an end-result and goal-driven way to solve problems; decision making method in high intensity and risk contexts; 'the imaginative leap from present facts to future possibilities' (Love, 1998; 244); as well as an activity that is inherently creative and includes the creation of something useful that has not yet existed before. Likely as a result to this review, Jones' (1970) own definition sees design as 'the effect of designing is to initiate change in man made [sic] things' (n.a.). Similar research was later done by Love (1998) where he reviewed extant literature regarding design and summarized the main discourses and characteristics given to it. Table 1 builds on his (Love, 1998) definitions by broadening the list of contributors for some of the definitions.

Table 1: The definitions of design in design context (Adapted from Love, 1998)

Definition of design	Contributors to the definition
Design as a process	E.g. Eder, 1966; McCrory, 1966; Watts, 1966; Gregory, 1966; Cross, 1982
Design as transforming or processing information	E.g. Esherick, 1963; Jones, 1966
Design as a human activity	E.g. Eder, 1966; Gregory, 1966; Motard, 1974; Levin, 1966
Design as creativity and synthesis	E.g. Broadbent, 1966; Jones, 1966; Reswick, 1965; Lawson, 1979; March, 1976
Design as problem-solving, managing, learning and planning	E.g. Alexander, 1964; Asimow, 1962; Matchett, 1963; Lawson, 1979
Design as a scientific rational process	E.g. Broadbent, 1966; Eder, 1966; McCrory, 1966, Booker, 1964; Simon, 1969

As Table 1 shows us, several academics have contributed to the definition of design. However, six general umbrella definitions emerge, which see design as: a process; an act of information transformation and processing; human activity; creativity and synthesis; problem-solving; and scientific process. These six different points of view give a rather comprehensive idea of why design is considered such a complex phenomenon.

In the management context the meaning of design can also be considered complex, and even today design as a topic continues to raise interest in the management world (e.g. Bruce & Bessant, 2002; Beckman & Barry, 2007; Verganti, 2008; Filippetti, 2011; Carlgren, 2013; Seidel & Fixson, 2013). According to Brown (2008) and Person et al. (2012), when first exposed to the business world, design was often viewed as a way of styling a finished product make it more aesthetically pleasing (e.g. Brown, 2008; Person et al., 2012). In other words, it was mainly considered as a makeover to improve the attractiveness of an otherwise ready-made product (Brown, 2008; Person et al., 2012; Boland et al., 2008).

Whether the role of design in management has grown from this or not remains a relevant discussion today, with both opposing and supporting parties involved. In

some business contexts design seems to remain the same as it has been before. However, some criticize this view on design for the overly simplistic images it gives to design and design practices (e.g. Person et al., 2012; Brown, 2008; Verganti, 2008), which on some contexts has prompted changes to the way design is perceived in the management field. In these contexts, an increasingly popular view sees design as a vital strategic element for organizations (e.g. Johansson-Sköldberg et al., 2013; Kimbell, 2011; Boland et al., 2008; Lockwood, 2009; Johansson & Woodilla, 2009; Lam, 2017). Studies conducted by for example Design Management Institute (2015), Danish Business Authority (2003) and European Commissions' (2015) Innobarometer 2015 show that design has had a positive influence on companies' performance in terms of their revenue, innovation capabilities, and 'the economy as a whole' (Danish Business Authority, 2003: 34), providing arguments for the more strategic nature of design in organizations.

Based on the literature it seems that much of the appreciation of design derives from the value it is seen to give to innovation. For example, Lockwood (2009) states that 'innovation drives new business, and design drives innovation' (p.35). It could therefore be argued to be a central reason why design and more specifically design thinking can be considered important and interesting in the management context.

2.2. Design thinking, a complex phenomenon

The following sub-sections discuss the existing literature regarding the various design thinking discourses. As the author of this thesis I suggest design thinking to be viewed as a concept that can be categorized into four different sub-divisions based on the trends in the existing design and management literature: sensemaking, problem-solving, act of creation, and reflection. Finally, a concluding chapter which aims to provide a summarized theoretical background for this research is proposed.

2.2.1. Introduction

When starting to uncover the meaning of design thinking, it is beneficial to examine the words it comprises of. By default, design thinking is heavily intertwined with

design, as the discourse revolving the meaning of design (e.g. Simon, 1969; Rittel & Webber, 1973; Schön, 1983; Suh, 1990; Buchanan, 1992; Love, 1998; Lawson, 2006 [1980]; Cross, 2006; Krippendorff, 2006; Cross, 2011) is what seem to have given birth to design thinking as it is known today (Kimbell, 2011; Johansson-Sköldberg et al., 2013). This designerly thinking discourse, named after Cross' (1982) idea of designerly ways of knowing, has revolved around 'the academic construction of the professional designer's practice' (Johansson-Sköldberg et al., 2013: 123) and has aimed to offer theoretical reflections on how to characterize the non-verbal skills of designers. This idea of how designers do their work and how they think, is what design thinking aims to deliver (e.g. Johansson-Sköldberg et al., 2013; Cooper et al., 2009).

Due to the previously discussed complexity of design itself, it is no surprise that there also exist various accounts of what constitutes of design thinking. Since design and the role of designer have been the focus of many studies already from the 1960s onwards, the theoretical basis in design field from which design thinking draws from is strong. In the management context, however, a clear consensus on the theoretical background of design thinking is still not complete (e.g. Rylander, 2009b; Dorst, 2011; Kimbell, 2011; Hassi & Laakso, 2011a; Carlgren, 2013; Johansson-Sköldberg et al., 2013; Cabello, 2015), despite some of the contributions made towards this goal (e.g. Rowe, 1987; Cross, 2006; Johansson & Woodilla, 2009). The fragmented and complex nature of design thinking appears to persist.

Attempts to synthesize past literature and determine the definition of design thinking within the frames of management have mostly seemed to revolve around design thinking as a strategic tool and a process that adds value. For example, Johansson and Woodilla (2009) explored the relationships between strategy, innovation, and design thinking discourses, and found that all of them are highly entangled with each other, and in need of further synergistic dialogue. Kimbell (2011) took an extensive look at the past literature revolving around design thinking and developed three frameworks for it: design thinking as a cognitive style, design thinking as a general theory of design, and design thinking as an organizational resource. In their very practice-based literature review study, Hassi and Laakso (2011a) found out that in the context

of management discourse, design thinking consists of set of practices, cognitive approaches, as well as mindsets. Other comparisons between design thinking and management concepts have also been made (e.g. Rylander, 2009b).

One of the more comprehensive researches about existing literature regarding design thinking is done by Johansson-Sköldberg et al. (2013). They identified altogether eight design thinking discourses: five from the design field, and three from the managerial field. Each of these discourses appears to be spear-headed by a certain individual or a team of individuals, founders or originators, whose opinions have shaped the discourses to have their own individual focus on what is the core of design thinking (Johansson-Sköldberg et al., 2013). Tables 2 and 3 list these discourses.

Table 2: Designerly Thinking Discourses (Johansson-Sköldberg et al., 2013)

Table 1. Comparison of Five Discourses of Design Thinking

Founder	Background	Epistemology	Core Concept
Simon	Economics & political science	Rationalism	The science of the artificial
Schön	Philosophy & music	Pragmatism	Reflection in action
Buchanan	Art history	Postmodernism	Wicked problems
Lawson & Cross	Design & architecture	Practice perspective	Designerly ways of knowing
Krippendorff	Philosophy & semantics	Hermeneutics	Creating meaning

Table 3: Design Thinking Discourses in Management (Johansson-Sköldberg et al., 2013)

Table 2. Comparison of the Three Management Discourses of Design Thinking

Originator	Audience	Discourse Character	Academic Connections	Relation to Practice
IDEO design company (Tom Kelley & Tim Brown)	Company managers (potential customers)	IDEO success cases (written for managers)	Grounded in experience rather than research Connections to innovation research	Kelley: How 'we' (IDEO) do design thinking Brown: how anyone can use design thinking
Roger Martin	Educators (academics & consultants) Company managers	Success cases from production companies used to illustrate theory development (managerial thinking)	Grounded in cognitive science & management science Builds on planning theories ('wicked problems')	How successful production companies do design thinking How 'any' company (manager/individual) can do design thinking
Richard Boland & Fred Collopy	Academic researchers & educators	Short essays where established (management) scholars apply their theoretical perspective to the design area	Grounded in individual researchers' own theoretical perspectives Inspired by Gehry's architectural practice or contact with design	Design thinking as analogy & alternative

When comparing these discourses (Johansson-Sköldberg et al., 2013) they appear to share similarities in their approaches and key elements, while emphasizing slightly different sides of the design thinking concept. Based on these tables design thinking could be argued to be a concept with many various interpretations depending on the person and the context.

2.2.2. Seeing and understanding: Design thinking as sensemaking

The first synthesized definition of design thinking is sensemaking. Based on the discourse of *designerly thinking as a way of reasoning or making sense* (Johansson-Sköldberg et al., 2013), the core of this definitions considers designerly thinking as a unique way designer sees and understands things (Cross, 2006; Lawson, 2006). Cross (1982; 2006) considers the cognitive and behavioral processes of designers to be unique and the knowledge related to design to be completely separated from scientific and artistic forms of knowledge. In this way, the designers' way of making sense of things is argued to be completely separate from the way others do it.

When comparing this idea to Love's (1998) definitions of design, Cross' and Lawson's perspective of designerly thinking seems to share similarities with Love's definitions of design as transformation and processing of information, as well as a human activity; the personal activities of the designer of transforming and processing information could be argued to lead into a unique, designerly way of looking things.

This idea that employing design thinking enables a new way of thinking and looking at things could be considered very compelling. It shares many similarities with Martin's (2010) view on design thinking; his guiding principles for design thinking deal heavily with the concept of 'knowledge funnel' and using both halves of the brain when making strategic decisions (Martin, 2010; Johansson-Sköldberg et al., 2013). Martin's (2010) knowledge funnel balances constantly both analytical thinking as well as intuitive creativity in dynamic dialogue and interplay, a process which he calls design thinking. Martin (2010) sees abductive reasoning as a key element of design thinking; instead of the more traditionally established forms of reasoning, (*deduction*, the reasoning 'from general to the specific', and *induction*, the reasoning 'from specific

to the general') abductive reasoning looks towards the future and questions 'what could be' (Martin, 2010: 40-41) and makes a 'logical leap of the mind' (ibid). The importance of abductive thinking to design thinking is also supported by other researchers (e.g. Dorst, 2011).

Another research that supports the idea of design thinking as a new way of seeing things is by Boland et al. (2008). They suggest that a person with design attitude understands limitations differently than in traditional decision-making: conditions are to be respected, but also questioned. They also argue that a person with design attitude does not hesitate to imagine a situation where the limitations and conditions revolving their project could be something else, and through their work strive to make that change should it warrant the best results (Boland et al., 2008).

These researches suggest that being a designer means that a person has a certain designerly way of looking and understanding things. It also seems that this new and different way of looking at things can be very appealing to many managers: some researchers testify how design thinking has helped companies develop a new way of thinking and making sense of things (e.g. Dorst, 2011; Meyer, 2015; Liedtka, 2014).

2.2.3. Out-of-the-box: Design thinking as problem-solving

The second synthesized definition of design thinking focuses on problem-solving and ideation of solutions. Inspired originally by the work of Rittel and Webber (1973) and the concept of wicked problems, design thinking can be seen as a way to solve problems that do not have a single solution, and which require creativity in developing holistic answers (Rittel & Webber, 1973; Buchanan, 1992; Johansson-Sköldberg et al., 2013). In this context, design thinking is argued to utilize both analytical thinking as well as creative deduction to find new perspectives and solutions for these types of difficult problems (Buchanan, 1992; Holloway, 2009; Martin, 2010; Dorst, 2011; Lam, 2017; Shapira et al., 2017). This same viewpoint could be argued to be found directly from Love's (1998) design definitions; design as 'similar to problem-solving, managing, learning and planning' (p.53), and in design as 'creativity and synthesis' (p.53).

The view of design thinking as problem-solving appears to be one of the most common ones in the management context (e.g. Brown, 2008; Martin, 2010; Shapira et al., 2017; Lam, 2017). Brown (2008) talks about a circular process that IDEO employs in design thinking, which Kimbell (2011) states to be created wholly to ‘convert problems into opportunities’ (Kimbell, 2011: 294). It appears to be generally accepted in the literature that employing design can help companies to solve problems, create novel solutions, and innovate new product and service offerings. Design thinking as problem-solving also seems to be widely applicable: different articles talk about different ways design thinking has helped companies to solve problems related to internal processes, innovation, value-creation, and creativity (e.g. Liedtka, 2014; Brown, 2008; Volkova & Jakobson, 2016; Martin, 2010; Shapira et al., 2017).

2.2.4. From idea to execution: Design thinking as an act of creation

One of the most commonly associated meanings to design seems to be the idea of creating something, whether it is a physical item, a service model, or a conceptual framework. The idea that design is a field that creates something new, while other fields such as humanities, sciences and social sciences ‘deal with what already exists’ (Johansson-Sköldberg et al., 2013: 124) is based on the ideological view of Simon, particularly his work *The Sciences of the Artificial* (1969). To him, designing was first and foremost a process of creation (Simon, 1969; Johansson-Sköldberg et al., 2013). Simon even goes as far as to state that the word design includes ‘all conscious activities to create artefacts’ (Johansson-Sköldberg et al., 2013: 124), a statement which could be criticized to broaden the definition of design extensively. This perspective of design and design thinking is dubbed as designerly thinking as creation of artefacts by Johansson-Sköldberg et al. (2013).

The idea that design thinking is used to create something new seems to be echoed in many of the management discussions surrounding the phenomenon. Boland et al. (2008) argue that a person with a design attitude will view each new project as an

opportunity to create something amazing and something that has never been done in quite this way (Boland et al., 2008). They (ibid) also quote Simon (1969) and state that much like the role of designers, the role of managers is to operate within certain existing situations, and through their work transform those situations into more preferred ones (Boland et al., 2008); to move from problems to solutions, so to say. On the other hand, Brown (2008) sees design thinking as a process which creates something valuable in the end; a process which incorporates the abilities of a designer to observe and discover people's wishes and needs, matches these discoveries with what is technologically feasible to create, and involves the creation of a business strategy to convert this discovery into a market opportunity and customer value. This view of design thinking seems to be one of the most used when discussing the innovation capabilities of the concept.

It could be argued that Krippendorff's (2006) perspective to design and design thinking shares many similarities to Simon's (1969) core tenet; according to Krippendorff's view, designer's task is to deliver a specific meaning, and create a fitting artefact to mediate this meaning (Krippendorff, 2006; Johansson-Sköldberg et al., 2013; Verganti, 2008). Johansson-Sköldberg et al. (2013) call this sub-discourse designerly thinking as creation of meaning. According to this perspective, designers could be described as translators, bringing the immaterial meanings to live through physical artefacts (Johansson-Sköldberg et al., 2013). In the management practice, Boland et al. (2008) and the idea of 'design vocabulary' share similarities with this perspective. The idea that the meanings we design and give to things influence how we perceive and interact with them is shared both by Krippendorff (2006) and Boland et al. (2008). In their research, Boland et al. (2008) noted that individual design projects had their own vocabularies, which acted as guidelines, a set of values and the strategy related to that specific project. Their (Boland et al., 2008) research argues that in the design process what you say, also is; the chosen words determine how a certain phenomenon is viewed, and one of the challenges of designers is therefore to find out the right vocabulary for each specific project.

In the context of this thesis, these discourses are not seen as separate, but instead part of a bigger perspective which sees design thinking as an act of creation. After all,

the creation of meaning could be argued to be as a sub-section of the overall process of creation. Additionally, if following Simon's definition of design, creation of meaning could also be seen as a conscious act of creating an immaterial artefact. When compared to Love's (1998) perspectives of design, his concepts of 'designing is a process' and 'designing involves transforming or processing information' (Love, 1998: 52-53) appear similar to these two discourses.

2.2.5. Learning and adapting: Design thinking as reflection

The final definition of design thinking in the context of this thesis sees design thinking as an act of reflection. It draws much from a discourse of Johansson-Sköldberg et al. (2013) which is based on the work of Schön (1930-1997). This perspective states that the core of design work lies in a position where designer is at the crux between creating new and reflection-upon-the-creation; constantly developing and exploring new ways of creation, while simultaneously reflecting on the practice (Johansson-Sköldberg et al., 2013). According to Schön (1983), this constant cycle of action and reflection would improve the designer's skills and re-creation (Johansson-Sköldberg et al., 2013). It could be therefore seen that this categorization sees design thinking as a way to evaluate and analyze, as in a form of feedback.

Within this light, Schön's (1983) idea of designerly thinking seems to focus on the constant cycle of creation and reflection, emphasizing the reflection of reflection-in-action, specifically: why certain design decisions were made. Using Love's (1998) definitions of design, Schön's model could be seen to describe 'design as a process', a constant loop of creating, reflecting, and learning. Similar thinking model can be argued to be seen in the frameworks of Brown (2008), Martin (2010) and Boland et al. (2008). The IDEO model of circular process (inspiration, ideation, and implementation) emphasizes the constant reflection during the process (Brown, 2008); Martin's idea of moving from a mystery, to heuristic and finally to algorithm, also includes the idea that in all stages of the processes, the validity of the assumptions needs to be verified (Martin, 2010); finally, in the findings made by Boland et al. (2008), the path from a design brief to design outcome changes several times, and problems are solved many times in order to find the best fitting solution. In

all these cases, the assumption is that the design process remains in a fluid, pliable form that can be shifted and made changes to until the very end.

2.2.6. Interrelated and Interdependent: A circular process

All in all, while design thinking can be argued agreed to have many different sides, it also seems to have some common core elements which are often visible in studies revolving it: the use of multiple sources of information, the process of looking at things from different perspectives, and the skill to use both analysis and creative thinking. Based on the literature, these different sides seem to be emphasized differently based on the context they appear in. However, this thesis argues that all four of the previously discussed definitions of design thinking relate to one another and that talking about one of them without the others gives only a limited view of design thinking as a phenomenon. Therefore, in the context of this study, design thinking is presented as a circular process of thinking, acting, and reflecting. Figure 2 below demonstrates this process.

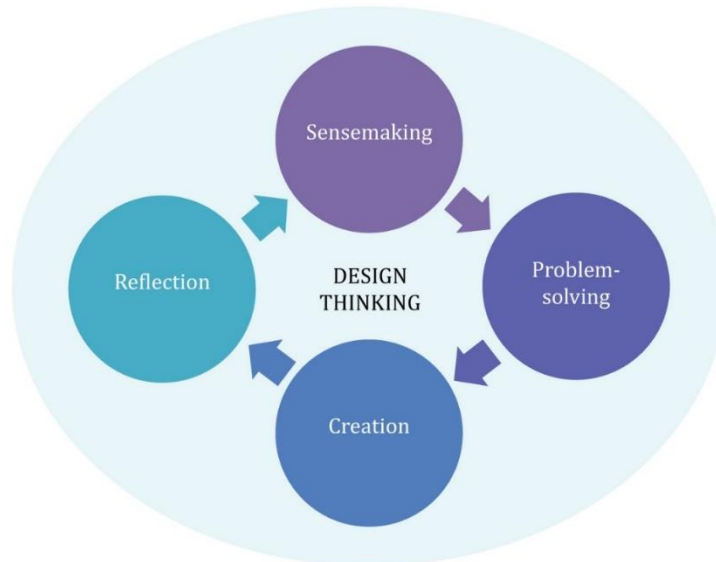


Figure 2: Design thinking as a circular process

In this circular process, the four definitions are argued to influence each other in a fluid and flexible way. Sensemaking, the way of seeing things and understanding them, influences the attitude in which problems are solved, linking the two definitions together. These decisions then influence the actions a person takes, and

the things they create, linking problem-solving and creation together. After these actions have been taken and things have been created, or even during that process, continuous reflection takes place, often in the form of iterations or continuous improvement. This naturally links the act of creation to the process of reflection. Finally, these reflections and the results gained will influence the way a person makes sense of things, and the flow of the process begins anew.

The aim of this circular process concept of design thinking is not to attempt to offer an ironclad step-by-step structure for design thinking, in which deviations are not allowed. Instead, it aims to showcase the fluidity and interrelated nature of the different core concepts of design thinking and that it may very well be difficult to create one individual solid understanding of what design thinking means. This way, it aims to provide some understanding to the complex nature of design thinking so it could be applied in the right contexts and bring the benefits it promises.

2.3. Design thinking in management practice

As established already, design thinking has been argued to create value for companies. In order for companies to harness the benefits of design thinking it cannot only stay as a conceptual value that guides the organization's actions on the high level; instead, it needs to be taken to the operational level and used in practice. This chapter reviews some of the extant literature on how design thinking has been applied in management practice and concrete actions that the literature suggests bring forth its benefits.

2.3.1. Traditional management vs. design thinking

Many published articles about design thinking seem to include a section which lists out the revolutionary new way of doing and thinking design thinking can bring along (e.g. Brown, 2008; Boland et al., 2008; Holloway, 2009; Johansson and Woodilla, 2009; Martin, 2010; Dorst, 2011; Meyer, 2015; etc.). This is understandable, since who would be interested in learning about design thinking if it did not bring along

anything new? Design thinking, or any new phenomenon for that matter, could be argued to be only as interesting as it is different from what organizations are used to.

2.3.1.1. Dominant mindset

As already discussed, the design thinking mindset or way of thinking are one of the key elements that circle the discussion on the phenomenon. Therefore, it is hardly a surprise that the mindset differences between traditional management and design thinking are discussed in many articles. Many of these articles appear quite unanimous regarding the differences between the two.

Dunne and Martin (2006) argue that the traditional management mindset puts a very strong emphasis on doing things right: both with individual assignments, as well as with the management of budgets and employees. Traditionally mistakes and constraints seem to be seen as things that should be avoided until the very end, which is why the traditional mode of thinking is deeply logical and calculative (Dunne & Martin, 2006). Liedtka (2011) has a very similar view on the matter: according to her, the fixed mindset of the traditional management style is heavily influenced by the fear of mistakes, and the need to do things in the right way to avoid them (Liedtka, 2011).

By comparison, the dominant mindset inspired by design thinking is argued to be more positive and even ambitious by nature; it encourages people to think that anything is possible and that the constraints on the way only make the journey better. The attitude and reason for operating is to not avoid mistakes, but to solve difficult, 'wicked' problems (Dunne & Marin, 2006). Liedtka supports this statement with her concept of growth mindset, which appears to be guided by the acceptance that not everything in business or life can be anticipated or prepared for, and that making mistakes is crucial for learning and developing new ideas and approaches (Liedtka, 2011). Therefore, this mindset is argued to be more forward-facing and courageous compared to the traditional management mindset.

2.3.1.2. Mode of working

As the mindsets are different, it is natural that the modes of working and the processes in work also differ between the traditional management style and design thinking. Lockwood (2009) compares the traditional management processes to travelling by train. His main argument is that the traditional stage-gate process model, which the traditional management style often follows, creates stiffness and bureaucracy within the organization, which often stifles the innovation capabilities of the organization (Lockwood, 2009). Dunne and Martin (2006) also state the stiffness in the way traditional firms operate, which extends all the way to fixed tasks, assignments, roles, and attitude. Liedtka (2011) describes this stiffness in terms of companies avoiding new, unfamiliar scenarios, as well as in resorting to familiar, proven to be good methods of action. According to her, this mechanic view of processes can also lead to a cold, superficial relationship towards customers, which results in weakened opportunities and analyzed, slow operations (Liedtka, 2011).

By comparison, Lockwood (2009), Dunne and Martin (2006), and Liedtka (2011) all seem to agree that by embracing design thinking activities, companies can move from stiff, bureaucratic stage-gate operations towards a freer, more proactive and fluid way of working. Lockwood (2009) compares design thinking processes to sailing, which offers a flexible model of working where the boat is 'tracking back and forth seeking the best wind' (ibid: 32), resulting in heightened innovation capabilities. Dunne and Martin (2006) describe the design thinking as collaborative and iterative way of working, with an abductive thinking adding a creative flavor to the thinking models. Finally, Liedtka (2011) argues that this type of an open and understanding way of working helps companies understand their customers more, build meaningful relationships with them, and create products and services that they will appreciate.

2.3.2. Design thinking practices and methods

The practical tools and methods used in design thinking is an area of literature that seems to raise many opinions: some researchers are very clear in their stand that design thinking should not be viewed as a mere toolbox that anyone can apply in any

situation (e.g. Meyer, 2015; Johansson-Sköldberg et al., 2013; Hassi & Laakso, 2011b). Instead, Meyer (2015) argues that using the practices related to design thinking require specific knowledge and skill, especially considering when to use them to gain the best advantage. Additionally, Hassi and Laakso (2011b) state that learning to use the tools in the most efficient way requires practice and time. All in all, it can be argued that while different tools and approaches help to make the idea of design thinking more tangible, the phenomenon itself is more than the sum of its parts.

However, to get this deeper and more concrete view of how design thinking can be applied, taking a look at some of the common design thinking tools and practices can be considered useful. The following sections are but crude categorizations made after reviewing the extant literature; in their paper, Chasanidou et al. (2015) refer to a study by Alves and Nunes (2013) which focused only on service design tools, yet where the researchers found altogether 164 methods and tools. It can therefore be said that while commonalities between different design thinking tools can be determined, listing all of them is simply not viable in the scope of this thesis.

2.3.2.1. Questioning the brief

Begin at the beginning: that seems to be the first thing many design thinkers do when they start working on a project. Some argue that often the problem described in a project brief is not the real, core problem of a project (e.g. Boland et al., 2008; Brown, 2008); instead, they often end up being symptoms of the real problem. Fixing only the symptoms is rarely a long-term solution, which is why real core issues need to be solved instead. Formulating a holistic view of the brief and project itself helps in this (e.g. Hassi & Laakso, 2011b; Holloway, 2009), and while familiarizing yourself with all the information for this takes time, perceiving everything within the context makes it easier to determine whether the right questions are being asked (Holloway, 2009).

2.3.2.2. Project plans: learn, create, test, and launch

It is sometimes said that what is well-planned is half-done. Based on literature, there exists several different design thinking project plans and models which map out the

various stages to the design process. Design Council (2018) in the UK developed a so-called Double-diamond model to map out the various stages of a design process: Discover, Define, Develop, and Deliver. Similarly, Brown (2008) introduces the Circular Design Process as the IDEO way of designing; Inspiration, Ideation and Implementation. Martin's idea of a knowledge funnel (2010) can also be considered a project plan, guiding the design process through the steps of mystery, heuristic and algorithm. Liedtka (2014) proposes a set of questions that guide the design process: what is, what if, what wows, and what works. The Double Diamond model by the UK Design Council (2018) is another example of this. Even Google, the IT multinational, offers its own view of a design thinking project plan, the Design Sprint (Google, 2016), with its four stages: Idea, Build, Launch, and Learn.

What can be noted from all the mentioned examples is that they all seem to include a stage of discovery or learning, which is used as the basis for ideation and idea generation. This stage then seems to be followed by a sort of analysis or selection of ideas, which are then implemented.

2.3.2.3. Familiarizing with environment

Companies who are distancing themselves too much of their customers are facing the potential danger of losing them (Richardson, 2012); by allowing the distance between them and their customers, companies lose the understanding of what the customers want and how they see their product or services. It is crucial to maintain a customer-focused view; 'user-centeredness' as it is called in many articles related to design thinking (e.g. Hassi & Laakso, 2011b; Brown, 2008; Liedtka, 2014).

Increasing the user-centeredness of a company seems to often start from observations (Brown, 2008) and ethnographic research (e.g. Hassi & Laakso, 2011b). By observing the day-to-day actions of the users, as well as by conducting field research and interviews, popular techniques of ethnography (Harvey and Myers, 1995), design thinkers can gather unique findings and data (Brown, 2008). These are some of the crucial tools to establish the required 360° understanding of a problem and its context (Holloway, 2009). To gain this complete vision and understanding of

the project context, user's needs and desires, as well as their environment, social factors and overall market adjacencies and emerging trends need to be clear to the design thinker (Holloway, 2009).

2.3.2.4. Mapping the overall system

In order to gain the full, 360° understanding of a problem and its context (Holloway, 2009), understanding customers and their environment is only one part of the equation. The companies need to be aware of all the parts that formulate the customer experience in order to create meaningful experiences and long-lasting customer relationships (Bitner et al., 2008). This is why tools such as customer journey (e.g. Liedtka, 2014; Chasanidou et al., 2015) and stakeholder mapping (Stickdorn & Schneider, 2010; Chasanidou et al., 2015), service blueprints (Shostack, 1984; Bitner et al., 2008), value chain analysis (Liedtka, 2014), personas (Junior and Filgueiras, 2005; Chasanidou et al., 2015), and business model canvases (Osterwalder & Pigneur, 2010) are helpful tools. All these tools seem to help companies understand their products or services as a system of interdependent elements, which need to be aligned and managed to improve the customer experience (Chasanidou et al., 2015; Liedtka, 2014). These tools are argued to make it easier to pinpoint and focus on problem areas and improve on them within the holistic contexts of the customer experience.

2.3.2.5. Broadening thinking: adoption of many perspectives

When the overall understanding of the context of the project has been reached, often the focus moves on to ideation and idea generation (e.g. Brown, 2008). In this phase, common design thinking practices include brainstorming and mind mapping (Brown, 2008), as well as framing (e.g. Meyer, 2015; Dorst, 2011; Hassi & Laakso, 2011b). Framing acts as a way to think outside the box and to run simulations of possible scenarios in new contexts (Dorst, 2011). Reflective reframing (Hassi & Laakso, 2011b) is argued to be a technique to rephrase problems and view them from various points of views and challenge the status quos and current problems.

In general, framing seems to be used to find creative solutions to problems. Utilizing these techniques requires the combination of both divergent and convergent thinking approaches: both synthesis and analysis, abductive thinking as well as inductive and deductive thinking (Martin, 2010; Hassi & Laakso, 2011b). This is argued to result in integrative thinking that enables the use of both logic and creativity (Martin, 2010; Brown, 2008) which not only allows design thinkers to develop freely their creative ideas, but also use logical and analytical skills to evaluate and improve them.

2.3.2.6. Visualizing ideas

When ideas are born, communicating them becomes crucial in order to develop them further. Visualizations are considered an important tool which support communication (e.g. Boland et al., 2008; Brown, 2008; Liedtka, 2014; Meyer, 2015; Holloway, 2009; Chasanidou et al., 2015). Sketching, drawing, and visual thinking (Hassi & Laakso, 2011b) are all argued to help bring ideas and possibilities into life and communicate them in an engaging and expressive way. Visualizations seem to also be seen as helpful tools for discussing about opinions and worries, as they help to spark creativity and see things from new perspectives (Chasanidou et al., 2015).

2.3.2.7. Prototyping

According to Liedtka (2011), 'the best data in an uncertain environment comes from real world trials, not extrapolation of history' (p.18). This seems to be one of the core ideas of why prototyping is seen as so important in design thinking principles. Whether it is rapid prototyping (Brown, 2008; Chasanidou et al., 2015), creating and testing models (Boland et al.; 2008; Liedtka, 2011), assumption testing (Liedtka, 2011), Shrek models (Boland et al., 2008), mock-ups (Meyer, 2015), or throw-away prototypes (Holloway, 2009), the idea of testing your idea by making it concrete appears as one of the most cited design thinking practices. Prototypes help make the theoretical knowledge tacit (Holloway, 2009), often making communication about the project easier.

2.3.2.8. Constant improvement and fast failing

It is argued that the design thinking mindset requires openness and fearlessness; constraints should be seen exciting (Boland et al., 2008) and challenges as ways to learn new things and test assumptions. To keep this attitude as well as making progress in developing the project further, constant iterations, fast failures, and reflections in action are required (Holloway, 2009; Brown, 2008; Hassi & Laakso, 2011b). The idea of constantly testing and validating the ideas that are born throughout the project is argued to be one of the guiding forces of design thinking (Brown, 2008), as well as one of the core principles that help to nurture creativity within an organization (Catmull & Wallace, 2014). To create something new, failures are inevitable; however, reflection of these failures is argued to be what makes those new things successes later on (Brown, 2008; Hassi & Laakso, 2011b).

2.3.2.9. Collaboration

In his paper for Harvard Business Review, Brown (2008) talks about Thomas Edison, and states that ‘he [Edison] broke the mold of the “lone genius inventor” by creating a team-based approach to innovation’ (p.86). In general, the idea of working and creating together appears to be crucial to design thinking (e.g. Brown, 2008; Meyer, 2015; Liedtka, 2014; Chasanidou et al., 2015). Multidisciplinary teams with diverse backgrounds are argued to enable the creation of novel innovations and ideas in the design thinking setting (Dunne & Martin, 2006; Hassi & Laakso, 2011b; Chasanidou et al., 2015). Different workshops are mentioned as an example of great platforms where this kind of diverse creativity can manifest in a tangible form (Brown, 2008; Meyer, 2015).

However, collaboration is to not be limited within design teams alone: stakeholder involvement (Hassi & Laakso, 2011b; Dunne & Martin, 2006) and customer co-creation (Liedtka, 2014) are listed as methods that enable designers to stay close to the users, to develop solutions that best match their needs, and gain new insights that otherwise would have been missed. Stakeholder involvement may also help companies to reduce risk and costs in the future, since ‘the surest way to de-risk a

new offering is to involve your value chain partners in its creation from the start' (Liedtka, 2011: 18). Finally, it could be argued that involving different parties in development process may also be a way for the company to show commitment towards the them.

2.4. Challenges and problems of design thinking

Despite the amount of interest, attention, and 'hype' given to design thinking recently, many worries regarding and even dismissals towards it have been expressed over the years as well. These discussions vary from provocative and sharp blog statements (e.g. Vinsel, 2017) to well-argued and full research articles (e.g. Badke-Schaub et al. 2010; Carlgren et al., 2016; Rodgers et al., 2017), with articles that stand somewhere in the middle (e.g. Kupp et al., 2017; Nussbaum, 2011; Ladner, 2009). This chapter discusses some of these topics of criticism that design thinking has faced.

2.4.1. Implementation issues

Kupp et al. (2017) argue that there often exists a contrast in between how design thinking is understood in theory and what happens when it is applied. Many seem to agree that when first applied, design thinking can often clash with the established processes and ways of working (e.g. Nussbaum, 2011; Carlgren et al., 2016; Kupp et al., 2017). Carlgren et al. (2016) found that companies found it difficult to prioritize design thinking, and that some of the ways of working, such as the iterative work style and questioning of the brief, were found difficult to execute since they often were contrary to the prevailing logic and processes in the organization. Similarly, Nussbaum (2011) and Kupp et al. (2017) also found some challenges related to disconnections between design thinking and the current, traditional business processes. Additionally, the hierarchical and conventional organizations of teams were also found to conflict with the implementation of design thinking (Nussbaum, 2011; Kupp et al., 2017). Some other factors Kupp et al. (2017) found to challenge the implementation of design thinking include the specialized skillsets and mindsets of people, as well as the 'human speed bumps' (Kupp et al., 2017) in the form of regulatory parties in the organization, such as legal and compliance coordinators.

According to Carlgren et al. (2016), the concepts and ideas that resulted from the use of design thinking were also found to be difficult to implement. They (ibid) identified several issues: the insights gained using the design thinking methods did not match or even conflicted with the scope of their planned products; the holistic nature of proposed concepts made delegating responsibilities challenging; and finally, the rigidness of certain functions in an organization limited the design thinking insights only into incremental innovation ideas. Nussbaum (2011) argues that companies 'turning it [design thinking] into a linear, gated, by-the-book methodology' (Nussbaum, 2011) is one of the core problems why the results promised by design thinking in terms of innovation and creativity are not fulfilled. According to Carlgren et al. (2016), many companies tended to kill design thinking in the day-to-day operations of the companies in favor of prioritizing other, more easily measurable and less-resource intensive activities. Many employees also started to see design thinking as an additional workload, which lowered their motivation towards it (Carlgren et al., 2016).

2.4.2. Contrasting cultures of working

It is somewhat universally known that change is not easy, and that human nature is prone to resist it. It is therefore not surprising that conflicting ways of working can result in challenges regarding design thinking. This seems to be especially important in terms of the culture of the organization; organizations with very risk-averse company cultures may find it difficult to do rapid hypotheses-testing and embrace the 'fail fast' mentality that functioning design thinking requires (Carlgren et al., 2016; Kupp et al., 2017), especially in certain industries where mistakes and risks are highly dangerous, such as in healthcare (Carlgren et al., 2016).

Another challenging company culture was found in very consensus-driven and polite companies. Employees in these organizations seemed to find some of the design thinking methods difficult to follow as they did not want to disagree with their managers or team mates and felt uncomfortable testing and trying different things with a project unless they had received their manager's permission for it (Carlgren et

al., 2016). Some interviewed employees seemed to have also faced problems in getting other employees to accept the design thinking practices; people had not taken design thinking seriously, and some of the practices related to it were seen nonsensical (Rauth et al., 2014; Carlgren et al., 2016).

These type of differences in culture seem to also be found in the communication regarding design thinking. Carlgren et al. (2016) learned that some employees seemed to have found it challenging to present and argue for an idea based on the subjective data and human-oriented values design thinking promotes. The methods of communication also seemed to raise issues, as other forms of visual communication than PowerPoint presentations were deemed inadequate and not informative enough (Carlgren et al., 2016). Similarly, communication regarding technical requirements seemed to be challenging: according to Carlgren et al. (2016), managers had required information about when and how to support the projects, but due to the ambiguity of the design thinking processes these types of plans seemed to be difficult to make.

2.4.3. Shifts in power dynamics

It is often stated that people fear that which they do not know. This was also one of the challenges that Carlgren et al. (2016) distinguished from their research; in some companies both employees and managers seemed worried about how design thinking would shift the power dynamics in the organization and how their own work might change. This was argued to result in suspicion towards design thinking, further enhanced by feelings that design thinking practices were criticizing the existing processes and ways of working (Carlgren et al., 2016); after all, if something can be improved, it could be argued to mean that there is room for improvement. The democratic effects of design thinking were also considered problematic; since design thinking requires lower, team-level decision making in rapidly shifting situations (e.g. Dunne & Martin, 2006), some of the power moves away from management and is given to teams, resulting in power shifts in the organizations (Carlgren et al., 2016).

Ladner (2009) also addressed the power dynamics issues regarding design thinking by stating that the real problem that defers companies' creative and innovative

solutions from forming is not about creativity, but rather about power. Ladner (2009) argues that neither employees nor consumers are 'granted a meaningful stake in the creative process' (Ladner, 2009) since they are treated as people to be 'incented' and to have their needs met. Ladner (2009) also argues that the main reason design thinking causes challenges for organizations is that they are not lacking in creative innovations, but instead profitable ways to develop them; the monetary constraints and the management's need to control costs were argued to kill projects so early that the possibilities of innovations are not seen, or believed in. The organizations' problematic focus on monetary results is also supported by e.g. Kupp et al. (2017).

2.4.4. Proving the value of design thinking

In the study made by Carlgren et al. (2016), many employees felt that the use of design thinking in their organization was questioned by skeptical managers, who requested proof of the value that design thinking would bring, as well as pressured the teams to show quick results. This seemed to be especially challenging in fields where product launches take a long time and where the value of products is measured only with their return-on-investment (ROI) (Carlgren et al. 2016). The traceability of a product's value was also mentioned as a key challenge (Rauth et al., 2014; Carlgren et al., 2016); the fact that the contributions of design thinking in the beginning of a product development are not traceable when the product is launched. An intense focus on companies' key performance indicators (KPI) also led to the shattering of design thinking into small pieces and lowered the employees' overall understanding of design thinking greatly (Carlgren et al., 2016). Similar challenges related to measuring the value of design activities have also been found in the studies of for example Lyke-Ho-Gland (2018) and Rauth et al. (2014). In general, it seems that heavy pressures on justifying the use of design thinking on short-term ended up influencing and lowering the performance of design thinking teams and the companies' willingness to invest in the developed concepts.

2.4.5. Skills are difficult to learn

Another topic of concern, mainly discussed by Carlgren et al. (2016), found design skills being difficult to learn. Some of the companies that they researched struggled in employing design thinking methods in practical level due to difficulties in using the right methods at the right time. In these companies, practices such as visualizations, were found to be useful but difficult to learn and use in the daily operations (Carlgren et al., 2016). Some of the cognitive practices also seemed to be difficult to employ: synthesizing large amounts of data, recognizing the difference between a good and a bad insight, as well as knowing when to stop iterating appeared challenging for some interviewees (Carlgren et al., 2016). Despite training and various guidance, difficulties in learning to adopt the design thinking mindset and connecting it to people's own daily work still emerged (Carlgren et al., 2016). These challenges in learning to use design thinking and integrating people with different skill sets are very interesting, as Carlgren et al. (2016) state that there does not exist previous literature that would address the topic. On the other hand, since no supporting research relating to the learning challenges of design thinking skills was found, the findings of Carlgren et al. (2016) should also be evaluated critically and not taken at pure face value.

2.5. Theoretical standpoint for this study

Reviewing extant literature gives an idea of what is currently known on this topic and what remains unknown. Based on the extant literature and the earlier established research questions, Figure 3 provides a view of the theoretical standpoint of this study. The figure maps visually both some of the previously reviewed discourses of design thinking (existing literature), as well as the topics which this thesis aims to provide further insights on with its research (further investigation).

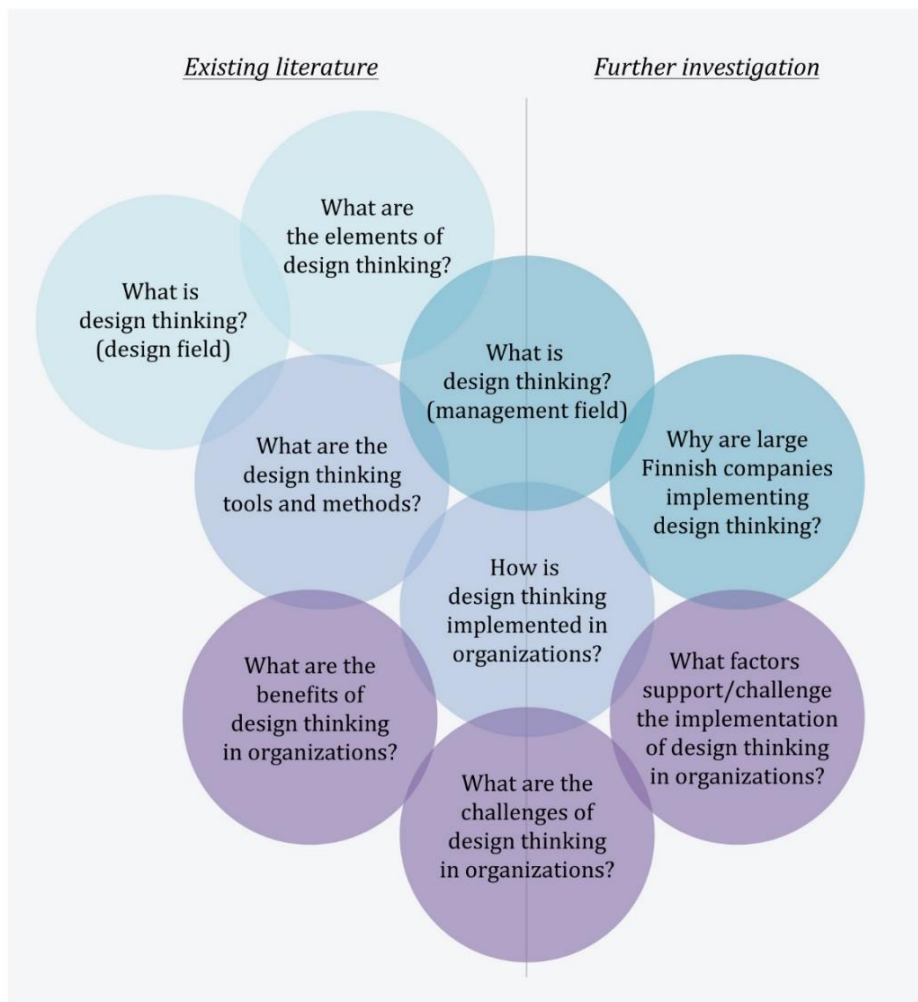


Figure 3: The theoretical standpoint for this study

Overall, literature regarding the definition and elements of design thinking appears to be quite vast with many researches and studies both supporting and conflicting with each other to some extents. As discussed previously, in terms of what design thinking is and how it is defined, theory on the design field is quite in-depth and complete. However, on the management field, theories regarding the definition of design thinking could still be seen to lack similar depth (e.g. Rylander, 2009b; Dorst, 2011; Kimbell, 2011; Hassi & Laakso, 2011a; Carlgren, 2013; Johansson-Sköldberg et al., 2013; Cabello, 2015) and could be argued to benefit from further studies. It is therefore an area to which this thesis aims to provide further insights on by examining how Finnish companies view design thinking and why they use it.

As established, there seems to exist several studies regarding the organizational influences of design thinking (e.g. Brown, 2008; Boland et al., 2008; Holloway, 2009;

Lockwood, 2009; Martin, 2010; Dorst, 2011; Liedtka, 2011; Hassi & Laakso, 2011b; Danish Design Center, 2015; Meyer, 2015). However, literature regarding how the implementation process of design thinking occurs and progresses in practice appears sparser. Therefore, one of the key points for this study is to investigate how design thinking is a part of a Finnish large organization: how has it been implemented.

As a part of this implementation process, I am also interested in identifying some of the factors that challenge and support the overall implementation process in these companies. In terms of extant literature, this also seems to be a valid point of interest; while there already exists some literature regarding the challenges of design thinking (e.g. Ladner, 2009; Nussbaum, 2011; Rauth et al., 2014; Carlgren et al., 2016; Kupp et al., 2017), it can still be considered a relatively unmapped area of research (e.g. Carlgren et al., 2016; Dunne & Martin, 2006). In terms of what kind of supporting factors could help to overcome these challenges, existing literature was very sparse and limited, which would make it a valuable area for future research.

These arguments form the starting point for this study. As the results and findings of this study are built from the data and form the theory on their own, it could be argued that this study has elements of grounded theory approach to it (e.g. Eriksson & Kovalainen, 2008; Strauss & Corbin, 1994; Stigliani & Ravasi, 2012).

3. METHODOLOGY

*“The alternative to good design is always bad design.
There is no such thing as no design.”
–Adam Judge (2011)*

Choosing the right kind of research approach increases the methodological fit, the internal consistency between the various research elements, of the research, and through that supports and improves the overall quality of the research (Edmondson & McManus, 2007). This chapter provides an overview of the decision-making processes regarding the chosen methodology, explains the steps that were taken in the research and analysis, as well as concludes with discussions regarding the trustworthiness and ethical nature of this study.

3.1. Research philosophy

As a whole, design thinking appears to be considered a phenomenon that is subjectively experienced and understood by people; a concept that is shaped by the understanding of individuals. Because of this, constructivism will be the ontological point of view (i.e. the understanding of ‘what is real’ and what is ‘the nature of reality’, according to Fletcher (2017: 182)) guiding this study. As an ontological perspective, constructivism ‘assumes that the reality for a knower, such as you, is an output of social and cognitive processes’ (Eriksson & Kovalainen, 2011). In other words, constructivism considers that a phenomenon exists in a unique way to everyone, and that the existing reality depends on the interpretations of individuals and groups (Eriksson & Kovalainen, 2011; Blaikie, 1993). Since ‘constructivists challenge the notion that research is conducted by impartial, detached, value-neutral subjects, who seek to uncover clearly discernable objects or phenomena’ (Mir & Watson, 2000: 941), it can be argued to be an overall good fit for research on this topic.

Based on the subjective nature of the phenomenon, determining the absolute truth and meaning for design thinking may seem unlikely, and it could even be questioned whether it would be beneficial for it to gain such objective and singular definition. Therefore, the epistemological point of view (i.e. how we define ‘our knowledge of

reality' (Fletcher, 2017: 182)) this thesis follows is interpretive, which focuses on subjective and shared meanings of phenomena (Eriksson & Kovalainen, 2008). In other words, this means that a researcher can uncover an individual's understandings of design thinking and other phenomena via social constructs, for example shared meanings or language (Eriksson & Kovalainen, 2008). It is therefore fitting for the explorative aims of this thesis, which are to find insights and understandings of how Finnish companies understand design thinking, why it is being used, and how has the use of design thinking been implemented in the organization, and through these enrich the theoretical discussions related to design thinking.

As a researcher, I utilized inductive research approach in this study, as my goal was to offer new insights and develop new theoretical concepts based on the empirical data collected in this study. From research design perspective, inductive approach can be considered a good fit for qualitative research since it focuses on uncovering and understanding the central topic very closely, as well as requires flexibility in the research design (Saunders et al., 2009).

3.2. Qualitative research design

Because the challenges regarding the implementation of design thinking in organizational settings still remain a rather unstudied area of research, especially in the context of Finland, it can be described as a relatively unstudied phenomenon, which qualitative research is a good fit for (Eisenhardt, 1989; Edmondson & McManus, 2007; Carlgren, 2013). Qualitative research is also an appropriate form of study when objects and subjects are studied in their natural settings with the aim of making sense of various phenomena and the meanings people give to them (Denzin & Lincoln, 2000). According to Broussine (2011), 'the research of social systems can be enhanced by giving attention to the rich and multifaceted dimensions of human experience' (p.21), which in the case of studying design thinking and its application in organizations, also supports the use of qualitative research methods. Finally, the theory-laden approach of critical realism that combines and understands both positivistic and constructionistic positions can also be considered a good fit for qualitative research (Fletcher, 2017).

3.3. Context of study

The chosen research context was large Finnish companies headquartered in the capital region of Helsinki who openly stated using design thinking in their actions. Since the capital region of Finland could be argued to be the center of Finnish business environment, many companies are likely to have their headquarters or large business units located in this area. This chosen study context had at least two relevant benefits for this study. First, it could be argued that this headquarter-centricity made it more likely for me as the author of this thesis to gain access to the right people in the organizations. Secondly, as the capital region arguably hosts the most businesses in Finland, it offers a very heterogeneous pool of companies to choose from and provided me as the author the chance to contact and investigate companies of different types, in different industries, with different approaches to design thinking.

3.4. Methodological guidelines: Case study research

Since the aim of this study is to find out how large Finnish companies are using design thinking, methods that are a good fit for organizational research are used. Edmondson and McManus (2007) define field research as 'studies that rely on the collection of original data, qualitative or quantitative, in real organizations' (p.1155). More specifically however, the goal of this thesis is to focus on design thinking and the unit of the organization employing design thinking, whereas their influence on the overall organization remains on a secondary focus. Case study research, as a form of field research, is a methodology where studies 'focus on a particular issue, feature or unit of analysis' (Noor, 2008: 1602) and is useful when the desire is to 'understand some particular problem or situation in great-depth' (Noor, 2008: 1603). Case study research also applies well in this research design since design thinking in Finland is still a relatively unmapped area of research and since case studies, as a research methodology, focus on producing holistic yet detailed view and insights about a specific phenomenon (Noor, 2008; Eriksson & Kovalainen, 2008).

Case studies also focus on the understanding the dynamics in a given context, either only in one or in several cases (Eisenhardt, 1989). In this thesis, the case study approach is appropriate since each of the companies' experiences with design thinking offer a chance for individual cases. Thus, in this study one case constitutes of one company's approaches, meanings, and practices related to design thinking. Therefore, this thesis follows an extensive case study research model, in which the goal is to look for common properties and patterns in the data across cases to expand the existing theory and literature on design thinking (Eriksson & Kovalainen, 2008). Multiple case design, where each case aims to be a replication of the others (Noor, 2008), is used in attempt to allow common themes and patterns to emerge.

3.5. Building the cases

In terms of choosing the case companies, purposive sampling was used. The reasoning for purposive sampling was that while it may be used within the companies and in their operations, external communication and marketing regarding design thinking is not yet very visible among Finnish companies. By utilizing purposive sampling, I was able to choose companies I know utilize design thinking. Choosing case studies based on practicality and ease of access is supported by Eriksson and Kovalainen (2011) and seen fitting in the scope and context of this thesis. Further support is given by Yin (2014), who argues that extensive case study research requires the researcher to choose each of the studied cases carefully for the cases to be comparable. In this study, all case companies are considered large Finnish companies: they employ over 10,000 people, operate internationally, and are headquartered in Finland.

The amount of case companies for this research was decided to be three, which allows the scope of this thesis remain within control while also providing the possibility for a fair share of insights to be drawn from the cases. Three cases also allows for comparisons to be made between the various cases, and to gain a broader view of how design thinking is seen and understood in large Finnish companies. Each of these cases was originally intended to consist of three extensive qualitative interviews each with different interviewee. This decision was made to allow me to

optimize the extensiveness of the study within the available resources allocated to this thesis process. Personal attributes of the interviewees such as age, gender, and nationality, were not considered when selecting the interviewees in order to not limit the possible pool of interviewees, which in the case of some the companies was rather limited.

During the research phase of this thesis, some changes occurred: one additional interview was made for one of the cases and one of the interviews included two interviewees at the same time. Due to these changes, the final number of interviews rose to ten, during which I interviewed a total of eleven people working within these case companies. See table 4 below for more details.

Table 4: Case overviews

Case (industry)	No. of employees	No. of interviews	Positions of the interviewees
Banking & Finance	>10,000	4 (3 face-to-face)	Department head of design, Design lead (2), Service designer
Retail	>20,000	3 (3 face-to-face)	Department head of design, Design lead (2)
IT & Technology	>10,000	3 (2 face-to-face)	Head of a design unit (3), Design lead (1)

Most of the interviewees were either department heads, managers (smaller unit and/or team leaders), or other senior-level employees in their organizations. The time each of the interviewees had worked in their respective companies varied from a few months to several years. A large majority of the interviewees were male: out of the total of 11 people, only two were female. Eight of the interviews were conducted in Finnish, while three were done in English. Majority of the interviews were conducted face-to-face, with only two being done remotely via phone or Skype. All of the interviews were conducted during the spring of 2018.

3.6. Data collection

According to Eisenhardt (1989), the data collection methods for case studies include for example ‘archives, interviews, questionnaires, and observations’ (p.534). In the

case of this thesis, the main methods of data collection were interviews and observations.

As with the studies made by Carlgren et al. (2014; 2016), the main form of data collection in this thesis was through qualitative interviews that aimed to study the perceptions of individuals. Semi-structured interviews were chosen as the main method of data collection since 'they are well suited for the exploration of the perceptions and opinions of respondents regarding complex and sometimes sensitive issues and enable probing for more information and clarification of answers' (Barriball & While, 1994: 330). In other words, they offer a chance to explore specific topics with interviewees, and still maintain a comparable factor among the various interviews (Carlgren et al., 2016). Additionally, based on the literature that was reviewed previously, this thesis assumed each interviewee to possibly have a slightly different understanding and perspective on design thinking, for which semi-structured interviews are a good fit as the researcher 'acknowledges that not every word has the same meaning to every respondent and not every respondent uses the same vocabulary' (Barriball & While, 1994: 330, referencing Treece & Treece, 1986). Finally, semi-structured interviews have the advantage that while the materials in the interview guide are comprehensive and systematic to certain extent, the interview can be carried out in a more casual and conversational manner compared to structured interviews (Eriksson & Kovalainen, 2008).

The aim of the interviews was to discover how the interviewee understands design thinking, for what reasons and in what ways design thinking has been applied in their organization, and what kind of results and challenges has resulted from the implementation of design thinking. The data from the interview was collected in the form of audio recordings and written notes either in Finnish or English, depending on the native language of the interviewee.

Elements falling under the branch of ethnographic and hermeneutic research, including observations and deciphering meanings were also used. The purpose of these methods was to gain the most accurate possible interpretation of interviewees' perceptions and experiences related to design thinking during the interviews (Harvey

& Meyers, 1995; Eriksson & Kovalainen, 2008). Observations were obtrusive by nature, where the researcher had a non-participant role. These observations were recorded in the form of written notes and visualizations and used to further support the data gathered from the interviews.

The data was transcribed in the language it was originally gathered, word-by-word to ensure it remained as specific and data-rich as possible. An online tool *oTranscribe* was used to make the transcribing of the interviews easier. All the findings and insights drawn from the data will be discussed in English within this thesis.

3.7. Thematic Analysis of data

‘Recommendations for executing case studies are usually very detailed when it comes to explaining how to collect data, but tend to be much more vague about how to theorize from these data’, Ravasi (2017: 241) states in his paper. Indeed, there appears to be no single universal way of analyzing the data in a case study research. However, a method that can be considered fitting in the context of this thesis is thematic analysis. It is especially used in the field of psychology, even though it is one of the most versatile and ‘core skills’ of qualitative analysis methods in general (Braun & Clarke, 2006: 78). It is defined by Braun and Clarke (2006) as a way to identify, analyze, and report patterns or themes within data.

In their article, Braun and Clarke (2006) argue thematic analysis to be a rather poorly branded concept which some researchers have appeared to be have used without even realizing it. The thematic analysis method developed by Braun and Clarke (2006) includes six phases, which are used as the analysis framework for this thesis. These individual steps, as well as extracts of the analysis process, are discussed in following sections.

3.7.1. Definitions

In the light of the chosen analysis method, the meanings of a few key terms relevant for the analysis are established in more detail. As the thematic analysis of this thesis

follows closely the framework suggested by Braun and Clarke (2006), many of these key terms also align closely with their approach.

Theme – A theme is considered as a data-grounded finding, consisting of a ‘patterned response or meaning within the data set’ (ibid, p.82) which can be considered highly relevant and important for the research questions of this thesis.

Sub-theme – A sub-theme can essentially be considered a theme within a theme. In the light of this thesis, they are used in particular to give further shape, structure, and texture to the more complex and larger themes.

Category – A way of grouping sub-themes systematically into similar cohorts. Used as a mechanism to bring more structure and systematic nature to the analysis at the final stages of the data analysis.

Code – A code is the foundation of data analysis. Codes consist of either individual or several data extracts found relevant in the analysis, and give them a new, aggregated coded meaning. Codes are organized and compiled into sub-themes, and later on into full themes.

Data extract – A data extract is an unedited extract of data which is taken directly from the data source; in the light of this thesis, these extracts are quotes taken directly from the transcribed interviews. The extracts represent the gathered data in the purest form and are used as the starting point for formulating the relevant codes for the analysis.

3.7.2. The phases of thematic analysis

In their paper, Braun and Clarke (2006) provide a clear step-by-step process for conducting thematic analysis. Drawing guidance from the thesis work of Karvonen (2018), this chapter discusses the phases of analysis individually while providing concrete examples of the way the analysis progressed in each of the phases. This

concrete documentation provides further credibility to the methodology of this thesis as well as hopefully provides possible future researchers a clear understanding of how the analysis was carried out.

As my research is geared towards more exploratory ground, the data and insights gathered from my three cases were all analyzed together. This choice enabled me to form a concrete, data-rich analysis in which similar findings from the different case companies supported and helped to validate one another. As a result, I was able to draw interesting, cohesive findings regarding the design thinking implementation processes and challenges of Finnish companies.

3.7.2.1. Phase 1: Familiarizing yourself with data

All the conducted interviews were transcribed word-by-word, and the produced transcriptions were re-read to gain a more objective and deeper understanding. During this phase the original interview notes written during the interviews were also re-read to accompany the fully transcribed data. Initial notes and ideas regarding the analysis were also written down during this phase.

3.7.2.2. Phase 2: Generating initial codes

After the familiarization phase, I started to work on the transcribed data. This phase was done in a few phases: first, data extracts which appeared to be particularly rich and relevant to the research questions were copied from the original transcripts into a new document, where I started to group similar extracts together. After the initial iteration round and mergers of similar extracts from all the different cases, a total of 218 codes, consisting of one or more relevant data extracts, were discovered. Some data extracts were considered to be relevant for multiple codes, and therefore appeared several times in the data set.

During this phase of the analysis, information related to the interviewees' age, sex, as well as professional background were kept in order to give a fuller contextual surroundings and credibility to the data. Extracts were color-coded in order to

distinguish between the interviewees and to give a broader overall view to the data set. Table 5 below shows some of the initial codes created in this phase of the analysis.

Table 5: Thematic analysis – Phase 2: Generating initial codes.

218 preliminary codes were identified, consisting of either one or more data extracts per code.

Initial code	Data extracts
Shifts and changes in industries demand actions from companies	<p>--- [our company's CEO] saw that our industry is heading towards a time of renewals and change and that we need to have new kind of expertise in the company --</p> <p>--- and since the world is changing so rapidly we need to be better at trying out new things so we can understand what kind of things work ---</p> <p>--- I think that everywhere on the background there are silent signals that our industry will change in one way or another during the next 5 to 10 years ---</p> <p>--- the ugly truth is that global competition already exists and is accelerating all the time, and while previously we've been protected by various regulations and national factors, everything is scalable now and these factors do not matter anymore [---] when the current structures that have been built crumble at some point, it's a whole new game that starts ---</p> <p>--- it's better to invest and diversify the risks before 'shit hits the fan' ---</p> <p>--- there's been an amazing equalization on the market, leveling of the market [--] you can't compete on technology anymore, anybody can provide a cloud service, everybody can make a mobile app ----</p>
Selling skills	<p>-- you probably need to give quite many selling pitches in order to move things forwards –</p> <p>--- Internal selling skills, yes. Projects need to be sold within the company in order to execute them ---</p> <p>--- we recently had a meeting with managers where we pitched our organization to them, so to speak, in 'hey, we can help you' kind of way ---</p> <p>--- I was able to sell to upper management the idea that in order for us to invest in and improve our customer experience we have to invest in our design expertise and dare to invest in it, and so we did ---</p> <p>--- And it took me quite a long time, possibly over a year, one and a half to finally make the leadership understand that design is more than that [making things look pretty or creating brand guidelines] ---</p>
Raising design thinking awareness internally	<p>--- it [raising the awareness of the whole organization] is a bloody large PR effort, because we obviously want to show what we are doing and what benefit it has via action ---</p> <p>-- And then, together with internal communication, simply raising the awareness internally –</p> <p>--- just start on implementing, we start to talk about it out loud, and raising the awareness for anyone in the company who is interested to hear, we do it happily and share what things like service design and UX mean ---</p> <p>--- We've harnessed some of the people in our internal communications to help us think how we can communicate internally that we exist, what we are doing and why we are in the company, what benefits do we bring ---</p> <p>--- other than talking to them, talking to them and explaining to them over and over of why they should do it that way, I don't see really any other way [to change the mindset in the organization] ---</p>

3.7.2.3. Phase 3: Searching for themes

After the initial codes were mapped, the first versions of over-arching themes followed loosely the original interview guide used in the interviews. Most of the codes started to take shape under 5 different topics: relating to the meaning of design thinking, relating to the reasons why design thinking should be applied by companies, actual concrete examples of how design thinking had been implemented in the organizations, factors that supported this implementation process, as well as factors that slowed down or challenged the implementation process of design thinking. Within these five broad topics, which acted as the basis for the final themes, a total of 79 subthemes were identified. These subthemes were developed to create meaningful entities of the codes identified earlier and started to form the basis for the initial results and findings of this study. All the initially created codes were included in these subthemes. Table 6 below shows the thematic mapping of the initial sub-themes relating to the theme of challenging factors of design thinking implementation.

Table 6: Thematic analysis – Phase 3: Searching for themes.

Initially the Challenging factors in implementing design thinking theme had 14 sub-themes.

Theme	Sub-themes	Codes
Challenging factors in implementing design thinking	Challenges of change	Change is scary Change is difficult Change is slow Managing change is difficult There will always be challenges
	Design thinking as a trend	Design thinking mania might lead to unprofessional work
	Value of design thinking is not understood	Role and meaning of design is not understood Design is not seen as worthy investment Design at strategic level is questioned
	Education issues	Design thinking needs to be proven
	Employee challenges	Implementation of DT requires pro-active work Work fatigue Designer's identity at risk Finding skillful people
	Lack of design leader	Lack of design strategy Lack of responsible person Lack of official mandate No-one is measuring the change Lack of tools / knowledge Lack of common direction
	Challenges with organizational structure	Design needs to be collective activity The size and silos' of the company Power is divided among many product owners Bureaucracy
	Ineffective implementation	Design education is slow and a drop-in-the-ocean Management needs to support design thinking implementation Design thinking remains only on company jargon level
	Challenges of B2B business	Customers are not the users Customers' attitudes have a large influence

	Mindset issues	Refusal to change old ways of working Pride of other employees Envy of other employees Dismissive attitude
	Contrast with existing ways of working	Development is lead by solutions, not goals Ambiguity of DT vs. process-driven nature of large companies Incompatible with some existing processes Technology-focus
	Education issues	Understanding design thinking takes time DT can be misunderstood easily
	Growth challenges	Scaling up design actions Prioritization challenges of in-house designers Finding balance between developing new and supporting old Danger of losing the spirit of design
	Working with design can be difficult	Design is difficult to measure Finding balance between customer-centric services and good business can be challenging

3.7.2.4. Phase 4: Reviewing themes

After the initial mapping and search for themes and subthemes was finished, these themes were iteratively reviewed and analyzed in a collective manner. Some themes, sub-themes and codes took new forms, whilst others were removed completely to decrease overlap. This part of the analysis was critically reviewed by both myself and my supervisor multiple times to make sure the final themes, sub-themes and codes were the best representation of the collected data.

At the end of these iterations, 6 main themes were identified: Awakening phase; Dating phase; Honeymoon phase; Maturing phase; Supporting factors in implementing design thinking; and finally, Challenging factors in implementing design thinking. These six overarching themes consisted of a total of 35 sub-themes, each existing only under one of the main six themes. These 35 sub-themes were additionally categorized into three different groups (people, organization, approach) to give the analysis more systematic form. See Table 7 below for an example of the final mapping for theme of Challenging factors in implementing design thinking.

Table 7: Thematic analysis – Phase 4: Reviewing themes.

After reviewing, condensing, and removing overlapping themes in an iterative fashion, 8 sub-themes for Challenging factors in implementing design thinking remained.

Theme	Category	Subthemes
Challenging factors in implementing design thinking	Approach	Ineffective implementation
		Challenges of change
		Challenges of design thinking

		Credibility issues
	People	Employee challenges
		Lack of design leader
		Mindset issues
	Organization	Organizational challenges

These six final themes were organized in a form of a process graph, to bring the most depth to the nature of the design thinking implementation process as observed from these three cases. In this process graph, shown below in Figure 4, the six distinguished themes all influence each other.

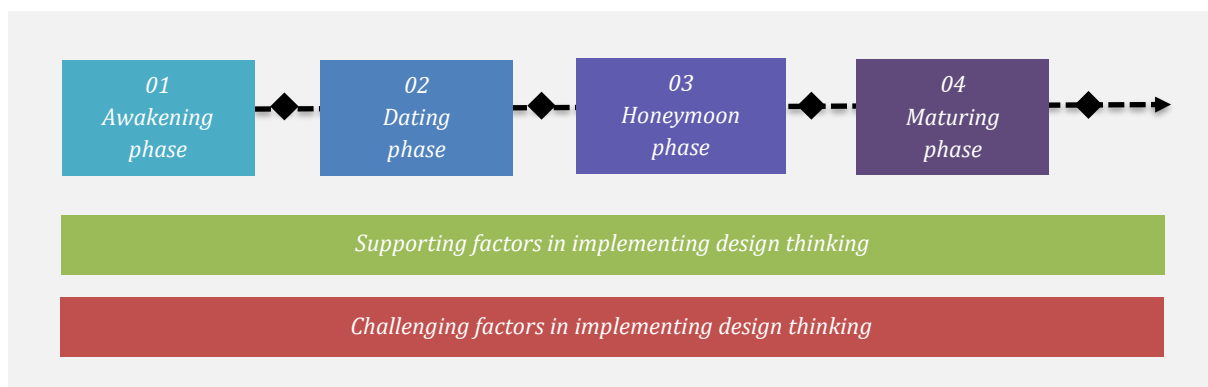


Figure 4: Six main themes of the analysis in the form of a process graph

When analyzing the data, the four different implementation phases of design thinking as well as the challenges and supporting factors of this change started to clearly emerge and form an implementation process for design thinking. However, these phases are connected to each other by stages I call gateways (shown as black diamonds in Figure 4). These gateways were added after the main analysis to complement the process-like nature of the findings by showing the differences between the four phases and representing the required change the organization needs to commit to in order to advance on the next phase of the implementation. The meaning and importance of each of these gateways is discussed together with its preceding implementation phase in the *Empirical findings* chapter of this thesis.

3.7.2.5. Phase 5: Defining and naming themes

To make sure that the data and the findings derived from it would be as easily understandable as possible, each of the themes, sub-themes, as well as codes was

individually named. The naming convention that was used aimed to offer a collective understanding of the analysis: making sure that all themes and sub-themes would be easily understood and seen as connected to each other, as well as making sure that each theme, sub-theme and code conveyed the core understandings of the extracted data. Defining and naming the themes and sub-themes was carried out iteratively throughout the analysis and helped to drive the analysis towards completion.

3.7.2.6. Phase 6: Producing the report

The main findings from this analysis are shown and discussed in detail in the *Empirical Findings* chapter of this thesis. Vivid data extracts, as well as the complete quote tables regarding these findings, can be accessed in the Appendices of this thesis. These findings and their significance to the broader context of this thesis, the literature surrounding it, as well as possible literature in the future, will be discussed in more depth in the *Discussions* chapter of this thesis. Finally, a brief but concise form of these insights and their significance will also make an appearance in the *Conclusion* chapter at the very end of this thesis.

3.8. Trustworthiness of study

At this point, the methods of research and data analysis have been discussed in detail and length in order to provide the reader with as transparent view of the research as possible. As the author, I have aimed to provide a clear reading also from the narrative and visual point of views, both to improve the reading experience as well as the communicational goals of this thesis. Before moving to discuss the actual findings of this study, the next two chapters briefly discuss the trustworthiness and the ethical considerations of this study.

Guba (1981) determines four aspects which can be used to measure the trustworthiness of qualitative studies; credibility, transferability, dependability, and confirmability. These four aspects were decided to be used as the measurement of the trustworthiness of this study due to their wide use in academic research and applicability.

In order to ensure credibility (making sure the interpretations I have made agree with the subjects' opinions) for the research, I engaged in many discussion and debriefing meetings with my supervisor, as well as brainstormed and discussed my findings and analysis with my peers. In terms of transferability (whether the results can be transferred to different contexts), on the other hand, purposive sampling was used in order to gain as many insights from the chosen case companies as possible, foregoing the representative and generalizable options as they were not part of the research design. Dependability (making sure the researcher is careful and consistent) was ensured by documenting all the steps of the research in a detailed manner, creating a clear audit trail for the study in order to provide a clear, transparent, and open research context for anyone interested in a similar study. Finally, to ensure confirmability (making sure that the interpretations are logical and nonprejudiced) constant reflection regarding the purposes, intentions, and motivations of the study were carried out throughout the research process (Read more in chapter 3.9). As a conclusion, this study can be argued to be trustworthy in the relevant contexts of other studies following qualitative research model.

3.9. Ethical considerations

It is said that 'all research is premised upon a variety of assumptions, which good researchers make transparent in their work' (Mir & Watson, 2000: 941). Therefore, in this section I will self-reflect on my own assumptions towards this study, and review some of the ethical considerations that might influence both the outcomes as well as the processes of creating this thesis. By consciously reflecting on these considerations I aim to reduce their influence on this study, although some bias may still remain.

One of the main ethical considerations for this thesis is my own personal interest and study background on the topic of design thinking. Since the idea for this thesis topic came from my personal interest towards design thinking, it is possible that my investment in the topic may create slight bias in the study, especially as one of the key elements to this topic includes the challenges design thinking has posed. In order to counter this, literature regarding the challenges and problems of design thinking as

well as the findings related to these topics are acknowledged, analyzed, and discussed critically within this thesis. However, as the topic of design thinking seems to be subjectively experienced and discussed in extant literature, this thesis is also the manifestation of my subjective understanding and stance towards design thinking, which should be kept in mind when reading further.

Second, the context of this study may pose some ethical considerations for this study. Since the chosen case companies for the study are not randomly sampled, but instead chosen based on my connections and information regarding the companies' activities, some bias on the nature of these companies may be present. While there does not exist a specific pool of large Finnish companies utilizing design thinking, as far as I am aware of, the chosen sample might still offer a slightly biased insights of how design thinking is perceived and occurs in large Finnish businesses. However, thanks to the purposive sampling this thesis was able to gain insights from different industries and companies who are in different phases of implementing design thinking, which could be argued to provide interesting data and findings to the academic discussion on design thinking. Had the sampling been done randomly, such rich and varied insights could have possibly been missed out. Additionally, since the aim of this thesis is not to provide a standardized model or findings, but instead explore and provide further ground for research, the purposive sampling does not harm the research design of this study or the findings drawn from it.

Another ethical consideration relates to semi-structured interviews as the chosen research method. As the interviewees represent their companies in this research, some bias of opinion may be inevitable. The interviewees, both in managerial and non-managerial positions, might have been unwilling to share some insights and opinions should they feel that they would give an untoward impression of their company, despite the protection of confidentiality. For example, they might not have been willing to share some of the most difficult challenges or biggest failures related to design thinking in fear of inflicting harm on their company's image. This possible omission of data can to some extent be considered inevitable in studies relying on interview data. However, to improve the interviewee experience and the ethical status of this study, each of the interviewees had the option to opt out of the study at

any given point and were instructed in the beginning of the interview to only discuss subjects they felt comfortable with. To further increase the trustworthiness of the study as well as to improve the psychological safety of the respondents, the data for this research was stored in a password protected, external hard-drive accessible only by myself and shared only to limited extent with the supervisor of this study. Overall, I would argue that I did my best in ensuring a safe, pleasant, and trustworthy interview environment and data handling process for my interviewees, following the typical ethical standards for these types of studies.

Finally, the last ethical consideration towards this study relates to the evaluation of qualitative research methods as the primary research method guiding this study. Qualitative research can be argued to have slightly less grounded and defined approaches as compared to many of the quantitative research methods. As such, there are some concerns which can be raised regarding qualitative research as a whole, and therefore the way this thesis research has also been conducted. However, since the topic of this thesis is design thinking, a phenomenon with a complex theoretical background, using a research model that aims to make sense of the phenomenon and explore the different ways it has been used in companies can be argued to be a good fit for it. As the theories revolving design thinking can be argued to be incomplete, research that aims to further explore and build that theory can be argued to be valuable for the academic discussion.

4. EMPIRICAL FINDINGS

*“Good design is finding a solution to a problem.
Great design is finding the simplest solution to the same problem.”
–Nicholas Petersen (2013)*

This chapter discusses the empirical findings in-depth through the identified six themes of design thinking implementation process: Awakening phase; Dating phase; Honeymoon phase; Maturing phase; Supporting factors in implementing design thinking; and finally, Challenging factors in implementing design thinking. Each of these themes, their relevant sub-subthemes, as well as the added Gateway stages are discussed individually in next pages. Together, they compile a model for design thinking implementation process in large Finnish companies; see Figure 5.

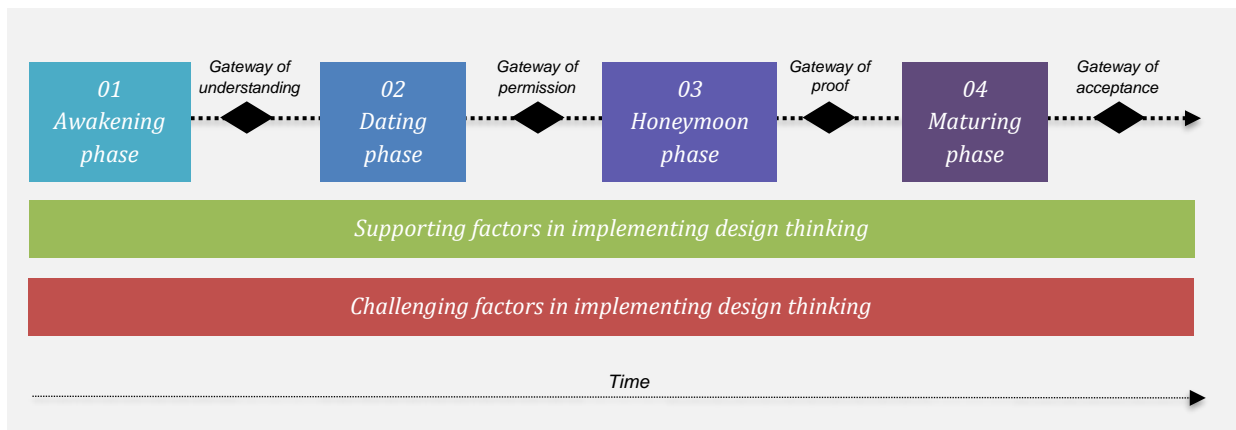


Figure 5: Design thinking implementation process in large Finnish companies

The findings related to these six themes are continuously accompanied with references to the vivid data extract example (quotes) tables, which due to their long length can be accessed in *Appendix 1: Empirical Findings – Vivid Data Extracts*. These tables include a comprehensive list of interview quotes, which demonstrate the reasonings behind the analysis. In the following chapters, in-text citations to these tables and the specific quotes are made; below is a short description of the in-text citation guidelines of this study.

The citation guides can look for example like one of these: c.f. INT#1; or, cf. INT#3:2 transl. In these codes, cf. stands for ‘compare to the reference in the quote table’.

INT#1 stands for a specific interviewee within the relevant theme. For privacy protection reasons, the interviewee numbers are not consistent across different themes and quote tables. Identification regarding the companies are also foregone for this same reason. INT#3:2 refers to a second quote from interviewee number three within the context of a specific theme. The abbreviation “transl.” indicates that this quote has been translated from Finnish into English.

4.1. Awakening phase: What is design thinking?

As was already established in the literature review, the definition of design thinking remains unclear. However, in order to implement it in an organization or study the implementation process of design thinking in said organizations, these organizations could be argued to have some level of shared understanding of the phenomenon. This is why before discussing the implementation processes and methods, I asked each of the interviewees to describe how they personally understood and viewed design thinking, as well as their opinions regarding what elements are key to it. Based on their insights, only after understanding design thinking and experiencing the design awakening, could the implementation process start to take place. This is why the first theme of these findings was named Awakening phase.

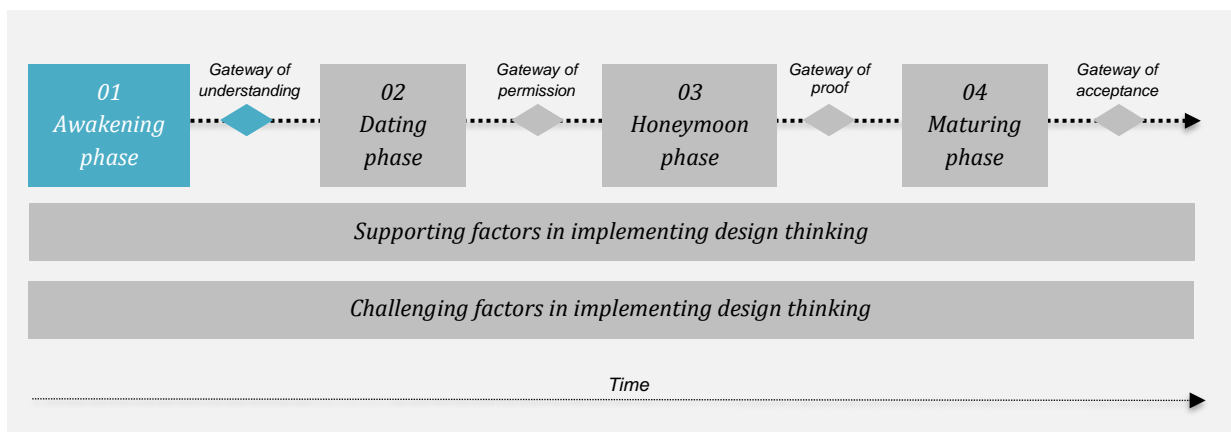


Figure 6: Awakening phase and the Gateway of understanding

In mapping the perceptions of the interviewees regarding the Awakening phase, two main themes emerged: *how is design thinking defined as*, as well as *what elements are associated with design thinking*. In both of these themes, sub-themes fell into three categories based on similar thematical focuses the interviewees gave on design

thinking: *cognitive*, *action*, and *complex*. These themes and sub-themes are further discussed in the sections below.

4.1.1. How is design thinking defined?

Cognitive – A way of thinking and finding solutions

When asked to describe what design thinking meant to people, majority of the interviewees mentioned one or both of two things: a way of thinking or a way to find new solutions to problems. Some of the interviewees found the meaning to be clear in the name of the term: “The word has its meaning. I mean, thinking is always thinking.” (cf. Table 8, INT#2) or “design thinking is a way of thinking. Hehe, *thinking*.” (cf. INT#1). Similarly, “creative problem solving” (cf. INT#5) and the idea of creating new, novel solutions (cf. INT#4) were dominant ways in which many of the interviewees seemed to define design thinking. Most interviewees seemed to therefore define design thinking as a mindset to approach problem-solving and decision-making.

Action – A process for developing business and the ways of working

Other, more practice-oriented definitions the interviewees gave to design thinking included a process-approach and a way to develop business. In terms of the process-view, some of the more established models for design thinking process, such as the Double Diamond, were cited (cf. INT#6, INT#4:2). Design thinking was also seen as a way to bring together the human-centered approach and business development (cf. INT#2:2). Finally, some interviewees also defined design thinking based on what it is not in their eyes: a set of determined methods and methodologies (cf. INT#1:2, INT#3:2). These interviewees felt that by defining design thinking as a specific method or methodology, it diminished its approach as well as undermined its importance. According to the interviewees it can therefore be concluded that while design thinking is to some extent seen as a process and a way to develop things, it should not be limited to a single approach or method.

Complex – An ambiguous term used for marketing purposes

Finally, some of the interviewees also gave more complex definitions for design thinking. One of those was defining design thinking as something with several

definitions (cf. INT#3:3), which some of the interviewees felt many people fail to understand the meaning of (cf. INT#7). Some others felt that the term of design thinking is something of a marketing term (cf. INT#8, INT#8:2) for something that works and is interesting even for managers to learn about. In both of these cases, the exact definition of design thinking was not explicitly communicated, but instead seemed to be evaded with other examples.

As a conclusion, based on the interview data, interviewees seemed to define design thinking either as a way of thinking with which to approach various decision-making and problem-solving situations, a process or way of working for development, or as a non-defined, complex phenomenon. To gain more insights on these, the next section discusses the core elements the interviewees associated with design thinking.

4.1.2. What are the elements of design thinking?

Cognitive – Human-centric, empathetic, and multi-disciplinary

When asked about the specific elements associated with design thinking, one answer was mentioned by nearly all interviewees: human- or customer-centeredness. Many considered this to be one of the keywords for design thinking (e.g. cf. INT#5:2, INT#3:4) Another element that several interviewees mentioned was empathy and its importance to design thinking (e.g. cf. INT#6:2, INT#3:7). Other factors which were mentioned often included multidisciplinary (e.g. cf. INT#5:3, INT#9) as well as being open and brave (e.g. cf. INT#4:3, INT#3:5). Together they form a quite cohesive look of the core elements of design thinking: understanding and taking customers and their needs into consideration, whilst maintaining a holistic and open approach.

Action – Flexible, iterative, and co-creative way of working

In terms of specific elements related to the work of design thinking, two main categories rose to the top. Some interviewees considered flexible way of working as a core element for design thinking (cf. INT#4:3), including “*prototyping and iterating on your work. Not falling in love with your first solution.*” (cf. INT#4:4). Another prominent category was co-creation and working together with people (cf. INT#5:4, INT#3:7). Based on these impressions, it can be concluded that design thinking is

seen to include elements that enable an agile, iterative and collaborative way of working.

Complex – Being a part of something bigger, doing things in many ways, a hype

Finally, some elements related to design thinking are perhaps more complex to explain. Some interviewees considered design thinking to be part of something bigger than simply what it is itself: whether that is a part of a design paradigm of ‘design thinking, design doing, and design being’ (cf. INT#1:3) or combining several fields, ‘business, technology, and the customers’ in its approach (cf. INT#5:5). Other interviewees mentioned that an inherent feature of design thinking is the freedom to choose the practical approaches, and not follow a specified pattern (cf. INT#3:8, INT#8:4). Finally, many of the interviewees felt that the term design thinking has an element of hype and buzz word to it, both in the positive and the negative sense of the words (cf. INT#7:2, INT#10, INT#3:9). It could therefore be concluded that design thinking was seen to have elements that connect it with other concepts, allowing a freedom of approach to those who deal with it, as well as maintaining a questionable buzz word status in the general discussion.

4.1.3. Gateway of Understanding

As shown in the process graph for design thinking implementation earlier, before a company can move from Awakening phase to Dating phase, the Gateway of understanding must be passed. This means that based on the collected data, a person within the organization needs to not only learn about what design thinking is, but they also need to form a cohesive understanding of it and find it interesting and potentially useful for their organization. In other words, it seems that a person within an organization must wake up to the idea of design thinking and feel passionately enough about it to take it up in discussions regarding its implementation. In terms of the future success of this implementation, it seems that the more power and influence this initial individual has in the organization, the easier it will be to start implementing in a wider scale.

In the case that this does not happen, and after learning about design thinking an individual decides against it or does not understand the concept clearly enough, no further design thinking implementation will likely occur. Only when an individual in the organization has learned about design thinking, understood its meaning, and sees the potential in, will the implementation move past the first gateway into the Dating phase.

4.2. Dating phase: Why should our company implement design thinking?

After the discussions regarding what design thinking means and what kind of elements are typical for it, the next topics I discussed with the interviewees related to how design thinking had initially started and who had been the one to introduce it in the organization. These discussions ultimately led to the different reasons and motivations for why companies decided to start the implementation of design thinking; what were the benefits the organization could gain from it. In my analysis, I named this phase of the design thinking implementation as the Dating phase. This phase is largely defined by the matchmaking that happens in it: finding out whether design thinking could be a match for the organization and bring value to it.

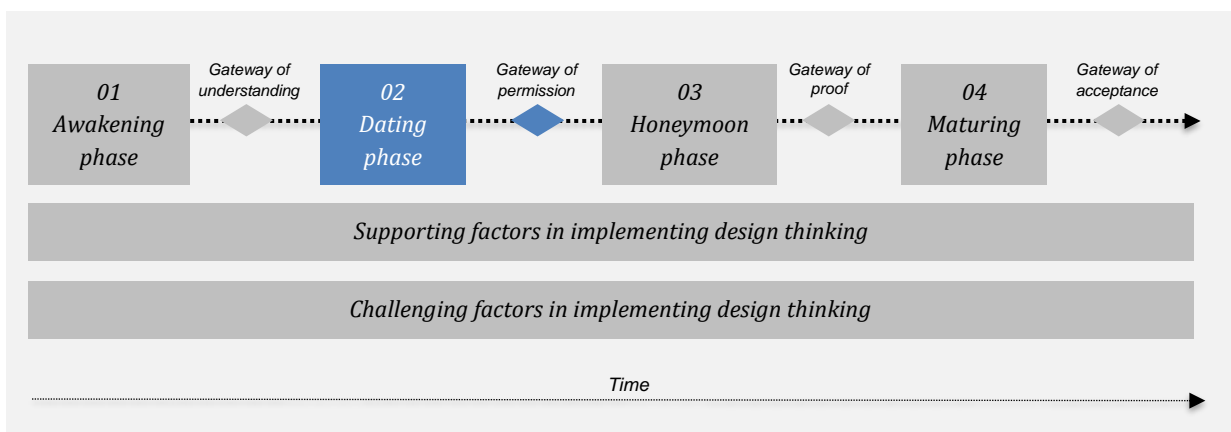


Figure 7: Dating phase and the Gateway of permission

In mapping the data from the interviewees' answers and impressions for this phase, four main sub-themes (*Internal motivations, To gain competitive advantage, Organic reasons, and External influences*) emerged which can all be considered to fall under the category of Organization, since based on the interviewees' impressions, these sub-

themes consisted of organization-centric reasons or influences regarding the use of design thinking. More specifically, these sub-themes help to explain why design thinking could be used from the point of view of the organization.

4.2.1. Internal motivations

Based on the interviews, there were many reasons for why design thinking should be implemented in an organization. One of the interviewees considered design thinking to complement their core business model (cf. Table 9, INT#1), whereas another felt that the design thinking mindset and methods complemented some of their processes with their clients (cf. INT#2). Some interviewees mentioned that design thinking had slipped into the organization due to things such as digitalization (e.g. cf. INT#3, INT#3:2, INT#4), branding guidelines (cf. INT#2:2), or agile development methods (cf. INT#5, INT#1:3). Other internal motivators for implementing design thinking included the 'because we can afford it' mentality (cf. INT#1:4) and the wish to create a unified omnichannel customer experience (cf. INT#3:3). In general, it could be concluded that most of these internal motivations relate to ease of adoption, as well as to a more holistic approach on the companies' relations with their customers.

4.2.2. To gain competitive advantage

Another cohort of reasons to apply design thinking related to creating a competitive advantage for the organization. Some of the interviewees felt that design thinking helps companies to go through business renewal (cf. INT#6, INT#7), while others found it helpful in improving the organization; making processes better (cf. INT#6:2, INT#8, INT#1:5), producing better business results (cf. INT#9, INT#7:2), and improving the innovation capabilities of the organization (cf. INT#6:3, INT#10). Finally, another reason for implementing design thinking was found to be the desire to differentiate from competitors with customer experience (cf. INT#3:4, INT#2:3). All in all, it could be said that most of the motivations for gaining competitive advantage involve improved performance, as well as helping to overcome change in a better way.

4.2.3. Organic reasons

The organic reasons for adopting design thinking were some of the more interesting insights that emerged from the data. One of the interviewees felt very strongly that doing design thinking is pure common sense (cf. INT#7:3), and that “anything else is just madness” (cf. INT#7:4). Many others also considered it to be the natural, start-up styled way of working (cf. INT#6:4, INT#10:2, INT#3:5). Finally, one interviewee considered that the way design thinking had emerged in their organization had not been planned, but it was more of a thing that merely happened organically; “*There was no conscious decision that we made, like ‘now, let us put design thinking into these projects and let’s wait what comes out of it’, but it was kind of... organic.*” (cf. INT#6:5). Based on these reasons, it could be said that design thinking may also be implemented for implicit, not only explicit, reasons.

4.2.4. External influences

Finally, some of the reasons for implementing design thinking referred to reasons beyond the company’s own immediate influence. One of the most common reasons the interviewees mentioned was to implement design thinking in order survive on the market (cf. INT#6:6, INT#2:4, INT#7:5, INT#2:5). Another common reason was the continuously shifting nature of the markets, which are forcing companies to react and renew themselves (cf. INT#3:6, INT#1:6). Relating to this, some of the interviewees felt that merely being technologically advanced is no longer enough to sustain a competitive position in the market (cf. INT#2:6, INT#8:2). As a whole, the pressure from competitors was considered another reason to implement design thinking (cf. INT#4:2). Finally, some interviewees felt that the existence of encouraging examples and benchmarks have also encouraged and motivated more companies to implement design thinking into their own business (cf. INT#3:7, INT#8:3). All in all, it could be argued that the rapidly changing business environment and the pressure from competition are forcing companies to look for alternative options for creating value, for which design thinking appears to be one option.

As a conclusion, it can be argued that there exist different as well as mutually complementary reasons for employing design thinking. However, acknowledging these motivations and the potential benefits of design thinking is usually not enough to; it seems that real life applications are required to further concretize and ensure the advancement of the design implementation in the organization. It would seem that in order for this to happen, the Gateway of Permission needs to be passed.

4.2.5. Gateway of Permission

As mentioned earlier, the Dating phase of the design thinking implementation process is about determining whether design thinking could be a potential match for the organization. As listed previously, there seem to be several reasons for why this could be. At the Dating phase, the individual has most likely gotten excited about design thinking and has perhaps started to implement it in their own, daily work. However, it is unlikely that these sporadic, trial uses of design thinking will make it to the wider knowledge of the organization unless the organization is able to pass through the Gateway of Permission.

Based on the conducted interviews, it would seem that in order for design thinking to move beyond an individual-led activity and in order for it to spread further in the organization, design thinking as an idea needs to be sold in to the organization. More specifically, it should be sold to a person in the organization who has as much decision-making power, resources, and influence as possible. It would seem that in order for design thinking to be implemented smoothly and to move into the Honeymoon phase, this supporter of design thinking (e.g. a product or project owner, manager of a function or a team, or even a C-suite director) needs to give their blessing and permission to the practice of design thinking; in other words, legitimize in some way the use of design thinking in some projects or cases. This selling of the design thinking seems to be one of the more crucial stages of the design thinking implementation, and the specific challenging and supporting factors for it will be discussed in more detail in the later sections.

Should this sales pitch of design thinking fail or should the implementation of design thinking stop at the Gateway of Permission, design thinking is likely to remain as a small, sporadic, and individual-led activity, utilized and adopted in some projects and cases. However, it is unlikely to become a company-wide activity or provide business-wide value and benefits.

4.3. Honeymoon phase: How do we implement design thinking in our organization?

It seems that after passing the Gateway of Permission, the ‘happy phase’ of design thinking implementation begins. In Honeymoon phase design thinking seems to have been acknowledged to some extent by an influencer (a design advocate with a platform of some extent) in the organization. This seems to be the phase when different kinds of implementation activities, events, and communication to the rest of the organization start. Based on the interviews, this phase appears to be very hectic in the organization as many things are happening and the rest of the organization is likely interested in the ongoing design actions. This also seems to be a phase of a lot of hard, nitty-gritty design groundwork: it seems that usually by this phase in latest the first designers are hired into the organization to do the practical legwork of this change, and design manages to infiltrate to its first projects. Based on the data this phase seems to pave most of the way for a fully design-embedded organization.

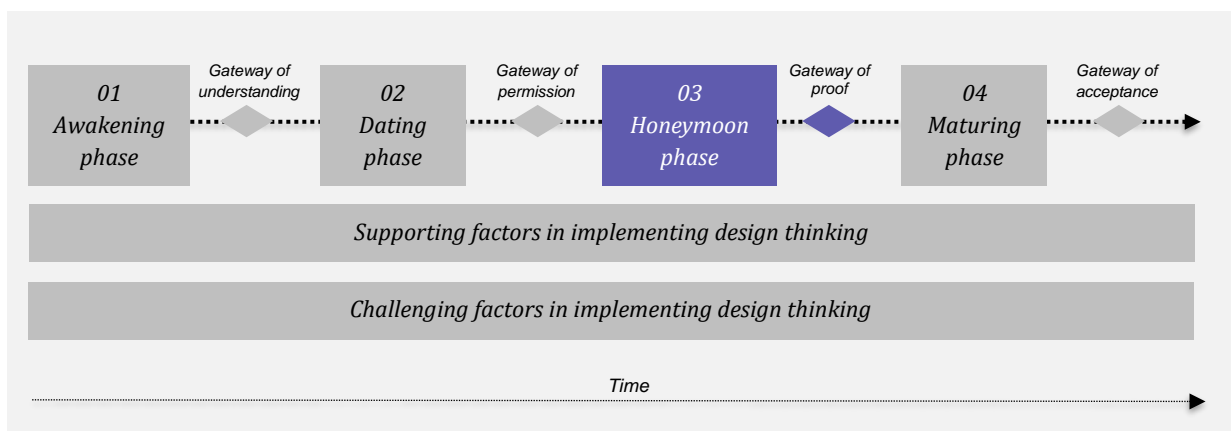


Figure 8: Honeymoon phase and the Gateway of proof

In mapping the data from the interviews for this phase, six sub-themes emerged. Out of these sub-themes, the first three (*Raising awareness internally in the organization,*

Establishing design guidelines, and Initial measurements for ROI of design) could be considered to fall under the Approach category: meaning they discuss the various ways and approaches the interviewees described had been taken in their organizations regarding the design thinking implementation. The other three sub-themes (*Design as an organizational function, Design as part of the development processes, and Reception of the organization*) could be seen to fall under the Organization category, since they deal with design's role within the organization, as well as the organization's reception towards these implementation activities.

4.3.1. Raising awareness internally in the organization

There were several ways the interviewees felt awareness of design thinking had been raised in the organizations. One of these actions on raising awareness was the idea of targeting management teams and horizontal functions specifically in the organization (cf. Table 10, INT#1). Several different methods of raising awareness on the practical meaning of design were listed, including Design Sprints (cf. INT#2), hackathons (cf. INT#3), customer safaris (cf. INT#4), as well as designers' support at customer touch-points (cf. INT#5). Various education methods, such as design introductions to new employees (cf. INT#5:2), e-learning options (e.g. cf. INT#1:2, INT#3:2), design courses (cf. INT#6), as well as targeted, individual trainings for different functions (cf. INT#7, INT#8, INT#3:3) were often described to go hand-in-hand with the design awareness methods. Internal events, such as company-wide 'Design Day' events (cf. INT#4:2, INT#8:2) as well as executive education conferences (cf. INT#3:4) were also seen a good way to raise awareness inside the organization. Finally, various communication methods were raised as good ways to increase the awareness of design thinking; things such as talking about design thinking in the organization (cf. INT#1:3, INT#8:3, INT#5:4), attending external conferences regarding design thinking (cf. INT#1:4), as well as having design ambassadors to keep the noise up (cf. INT#1:5, INT#6:2, INT#1:6) emerged from the interviews. Another interesting finding from the data was that in these communications, design thinking as a term was not used very much (cf. INT#7:2, INT#9, INT#8:3) and terms such as service design or UX design were used to convey similar meaning to it. All in all, it seems that the interviewees felt there to be various ways the awareness of design thinking had

been raised in the organizations, and that the best approach includes a mixture of all these different approaches.

4.3.2. Establishing design guidelines

Based on the interviews, it seems that another big sub-theme of the *Honeymoon phase* relates to establishing the guidelines for design activities. There were a few key elements that emerged from the data. Some of the interviewees mentioned the need to determine the right direction for design activities (cf. INT#10, INT#8:4) and the purpose of design in the organization (cf. INT#1:7, INT#8:5). One of the interviewees highlighted the importance of establishing the design language (cf. INT#10:2) and signature experiences of the company (cf. INT#10:3). Some interesting topics also emerged regarding the roles of sub-contractor designers and in-house designers and the roles and changes that need to be gone through with them (cf. INT#10:4, INT#10:5, INT#1:8, INT#10:6). Finally, many of the interviewees mentioned the Danish Design Center's (2015) Design Ladder as a referencing point they used in determining the role of design in their organization (cf. INT#8:6, INT#3:5, INT#4:3). As a whole it could be said that while there seemed to be some company-specific differences, most of the interviewees agree that establishing the direction and purpose of design activities is important for the implementation of design thinking.

4.3.3. Initial measurements for ROI of design

Finally, the last sub-theme falling under the *Approach* category deals with measuring the impact of design activities. Based on the interviews, it seems that this a topic that all of the interviewees found important. Some of the different ways the ROI of design was found to be measured at the earlier stages of design thinking process were found to be the service design percentage of projects (e.g. cf. INT#7:3, INT#8:7), developer-to-designer ratio (cf. INT#5:5, INT#6:3), the growth of customer loyalty and retention (e.g. cf. INT#8:8, INT#1:9), as well as the growth of overall customer satisfaction and Net Promoter Score (e.g. cf. INT#4:5, INT#6:5, INT#10:7). Overall, many of the interviewees felt that measuring the ROI of design is challenging and finding the right measuring tools had not been easy, although their importance to the company-wide implementation of design thinking are crucial.

4.3.4. Design as an organizational function

In terms of how design as an organizational function is perceived in the early stages of design thinking implementation, a couple of findings emerged from the data. In general, design does not seem to be very known by the rest of the organization in the beginning of the implementation process (cf. INT#1:10), which can be considered to be quite normal. In terms of how the design functions themselves were organized in the organization, there were some differences between the case companies. One company had organized their designers so different sections of the organization had their own designers and design teams (cf. INT#6:6), whereas the other two companies had a more centralized, horizontal design function in place (cf. INT#8:10).

4.3.5. Design as part of the development processes

In terms of how design is influencing the development processes of the organization in the beginning stages of the implementation, a few findings emerged from the data. In general, design was seen to bring customer-focus and its benefits into the development process in some of the projects (INT#8:11), as well as helping the development team to develop better products and services which are valuable to the customers (INT#2:2). Other interviewees mentioned that using design methods in some of the projects allowed the development process to be more agile and flexible (INT#1:11), as well as that design could have more input to offer than just insight regarding look and feel of the products and services (INT#6:7). In general, based on the interviews it would seem that in the early stages of the implementation process, design's influence on the development is still quite project-based, and it could offer a lot more for a lot of projects.

4.3.6. Reception of the organization

Finally, when studying the receptions of the organizations to design thinking, yet again some interesting findings emerged from the interview data. The first of them relates to the role of the design in terms of company strategy; based on the interviews, it would seem that in many cases, the words design thinking or service design are mentioned in the strategy updates of various management teams (cf.

INT#8:12, INT#5:6). On a more grassroots level, it would seem that at this stage of the implementation, most of the organization are curious about design thinking (INT#1:12, INT#8:13). Some interviewees also said that they have felt that the rest of the organization has shown them some support in their design actions (cf. INT#8:14), and that there has not been much of active opposition from the rest of the organization (cf. INT#1:13, INT#10:8). As a whole it could therefore be said that the reception of the organization to design thinking in the early stage of implementation seems to be mainly positive.

4.3.7. Gateway of proof

As has been discussed and shown, the Honeymoon phase of the design thinking implementation seems to be mostly positive while also hard-working phase of the implementation process. Since everything about design thinking is quite new, people tend to have a politely curious interest towards it. However, it seems that this interest will not be able to carry the implementation process, unless design thinking is able to pass through the Gateway of proof in the organization.

The Gateway of proof is the time period of the organization when design activities and projects which have utilized design approaches need to be able to show, in measurable ways, that they have added value to the organization. In terms of when do companies face this gateway, there seems to be some individual differences depending on how influential the first 'design ambassador' is. However, the Gateway of proof is something that all companies wishing to transform their business into design-driven will likely have to face; at some point design will likely need to prove to the higher management that it is a valuable way of developing and managing business, and that going through a larger-scale design transformation in the organization is worth the effort. Based on the data, this seems to be the stage when measuring the ROI of design becomes crucial. It seems that only by demonstrating the concrete benefits and value it brings will the design transformation be able to continue and mature into a more integral and embedded part of the organization.

Should the organization fail to pass this gateway, design thinking and the design activities will most likely not be taken seriously as a company-wide mindset and a guidelining organizational activity. Instead, it seems likely that it will remain in the practices of the people in the organization who already know about it, and produce some benefits from individual projects, but most likely will not grow to be something the whole organization knows about or benefits from.

4.4. Maturing phase: How is design thinking an embedded part of our organization?

The last phase of the design thinking implementation process, Maturing phase, is the one which would seem to be the closest to a fully design-embedded organization, but which at the same time has the least information based on the data of this study. Based on the interviews, after passing both the Honeymoon phase as well as the Gateway of Proof, design thinking would appear to be on a quite solid ground on the organization. The findings give indications that this phase seems to focus on the hard work of slowly pushing design thinking into all parts of the organization in a systematic manner.

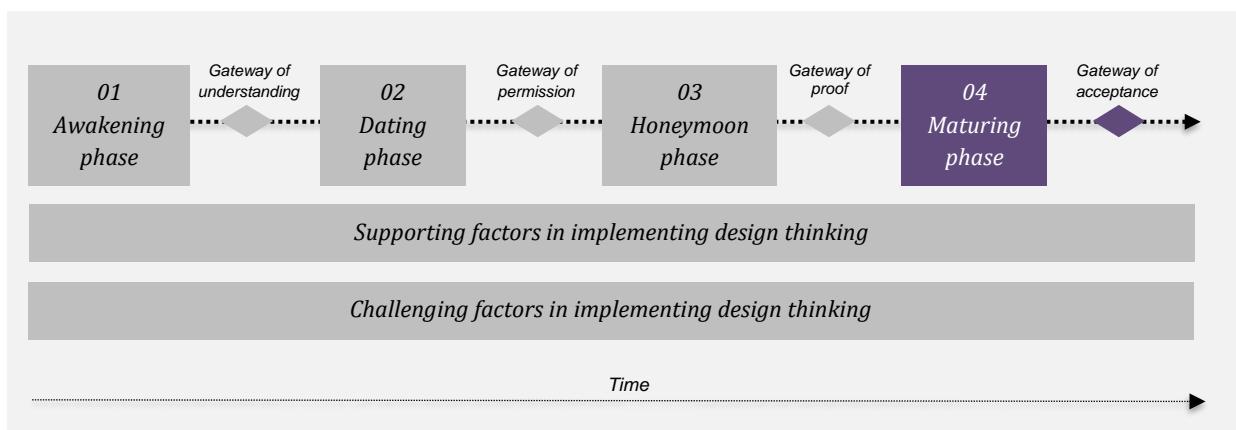


Figure 9: Maturing phase and the ateway of acceptance

In mapping the data from the interviews for this phase of the implementation process, five significant sub-themes emerged. Out of these sub-theme, the first two (*More systematic measurements for ROI of design* and *Design is executed at three levels*) could be considered to fall under the category of Approach, since they further discuss the approaches the interviewees tell had been taken in their companies regarding the

design thinking implementation. The other three sub-themes (*Unified design organization*, *Design expands from development to business*, and *Appreciation of the organization*) could be argued to fall under the Organization category, since they deal with topics more closely related to organizational structures.

4.4.1. More systematic measurements for ROI of design

As discussed previously, it can be argued that measuring the impact of design is very important for the successful implementation of design thinking. Therefore, it is not surprising that as the implementation process goes further, the requirements for further measurements for design's impact seem to increase as well. Based on the interviews, some of the measurements that have been used in the more mature phases of design thinking implementation include measuring the speed of a feature development in a design project (cf. Table 11, INT#1, INT#2), the design value index (cf. INT#1:2), as well as whether the sales have increased (cf. INT#3, INT#4, INT#5, INT#6). Besides these measurements, some interviewees also consider measuring the employee satisfaction (cf. INT#3:2) and employees' overall interest in design (cf. INT#4:2) as possible measurements to demonstrate the value of design. Overall, most the interviewees agreed that many of the benefits of design thinking can only be seen on long-term (cf. INT#3:3, INT#5:2, INT#6:2). It could therefore be said that at the maturing point of the design implementation process, the ROIs also seem to shift towards a more long-term focus.

4.4.2. Design is executed at three levels

When thinking about how the actual design work changes in an organization going through this type of transformation, there were some interesting findings that emerged from the data. It seems that on the maturing phase of design thinking implementation, design work can be divided into three levels which are all built upon each other: strategic design (cf. INT#1:3, INT#2:2, INT#7), tactical design (cf. INT#1:4, INT#7:2), and operational design (cf. INT#1:5). Overall, based on the interviews all these levels require different types of competence areas, but are all equally important in enabling a wide-scale and in-depth design work.

4.4.3. Unified design organization

When talking about what the design organization looks like in the *Maturing phase* of the implementation process, there were several insights to be found from the data. In general, it seems that over time companies with maturing design competence are moving away from sub-contractor-based work and are instead hiring more internal designers (cf. INT#2:3). These designers seem to be part of a unified design organization with a common strategy and vision for the way design is done in their organization (cf. INT#8, INT#9, INT#10). In this unified design organization, the teams can be organized in a flexible manner (cf. INT#11, INT#7:3), as well as allowing a large-scale design influence on a variety of different touchpoints; *“There are several teams who are working on different areas of development, in different touchpoints. When we operate so widely, there are very, very few people, if any, who competence-wisely would be able to be specialist in the whole scale of things.”* (cf. INT#11:2). Some of the perceived benefits of this type of unified design organization include a systematic way of working (cf. INT#7:4) as well as having a network of fellow designers, enabling a holistic view of design (cf. INT#7:5, INT#11:3). Finally, it was found that by organizing design in one place, under one organization, new types of career paths in design inside the company emerged (cf. INT#11:4, INT#2:4, INT#7:6). It could therefore be argued that having design under one unified organization seems to bring many benefits both from the business and employee point of view.

4.4.4. Design expands from development to business

As the design maturity of the organization develops, so do the ways design is involved in the business. Based on the interviews, it seems that after gaining a steady foothold in the development processes, the next leap design takes is when it becomes involved with business processes. These changes have many interesting insights to offer. First, based on the interviews, this type of collaboration among different units offers the employees the chance to learn from another (cf. INT#8:2). When discussing about the specific ways design can support business, a variety of methods can be found: collaboration relating to customer insights (cf. INT#11:5), market and customer analysis (cf. INT#2:5), segmentation and strategic planning work (cf. INT#2:6),

business decision-making (cf. INT#2:7, INT#1:6), as well as in developing the current business and creating new ones (cf. INT#11:6). Finally, it was also stated by one interviewee that although promising and exciting, this type of collaboration between design and business functions still varies between various units and teams (cf. INT#2:8). However, it could be stated that the work between these different units seems to be tight, concrete, and still growing to meet its potential.

4.4.5. Appreciation of the organization

Finally, as these activities are taking place, the reception of the rest of the organization towards design also seems to change. Based on the interviews, at this point of the design implementation process, the feedback of the rest of the organization seems to be generally very positive, and the use of design in projects or as an organizational function is not questioned as much anymore (cf. INT#7:7, INT#1:7, INT#11:7, INT#7:8). Additionally, the role of the design unit as a possible changemaker in the organization seems to have changed and disappeared over time; *“I don’t think we are seen like that [challengers towards the rest of organization], we are maybe friends now, friends to other people, instead of these nuisances who come to bother them.”* (cf. INT#7:9). As a whole, it could be said that based on these insights it seems that at the Maturing phase of implementation design is starting to be seen as a regular part of the rest of the organization.

4.4.6. Gateway of acceptance

At the end of this model of design thinking implementation process is Gateway of acceptance. After reaching this gateway, it could be argued that the process has come to the end of it: or, in the context of this research, determining what comes next is difficult. The time when an organization reaches this gateway appears to vary and the differences between this gateway and the Maturing phase seem to be fleeting. However, perhaps the best way to think about this gateway is this: design implementation could be argued to be complete when it doesn’t exist anymore. In other words, when it feels like there is no more implementation to be done or explaining and teaching to do; when everyone automatically takes the customer into

consideration; when design thinking mindset is the prevalent mindset of the company; and when design methods and methodologies are seen as an inseparable, accepted part of the organization.

4.5. Supporting factors in implementing design thinking

Having mapped the process of design thinking implementation and the different phases of it, this section looks at the findings regarding what kind of factors help to make this transformation process smoother. Although one of the interviewees describes that *“the stars were aligned just right”* when they started their implementation process, based on the interview data and the findings emerging from it there seems to also be several factors and things companies can intentionally do to ease the process of design change.

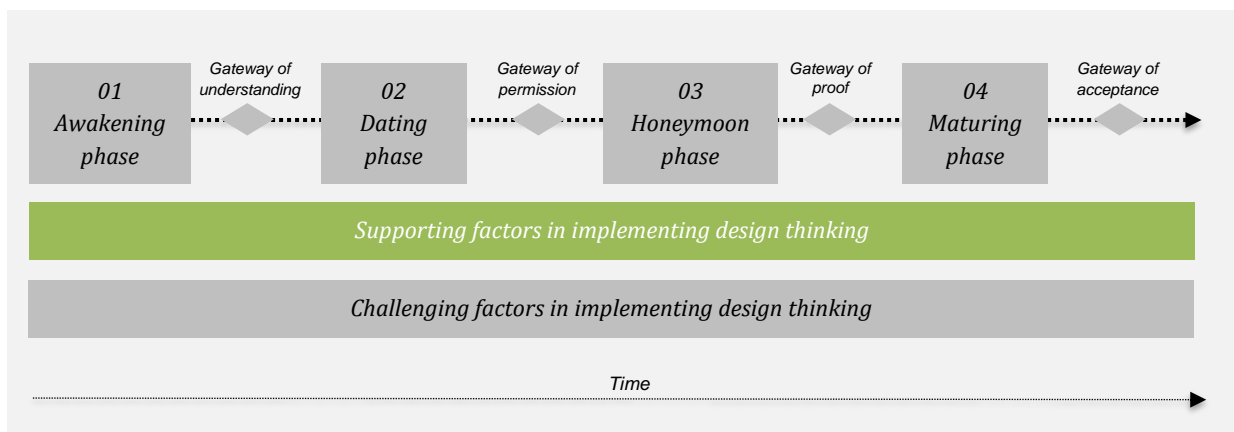


Figure 10: Supporting factors in implementing design thinking

For this theme, the interview data produced six sub-themes. First three of them (*Personal attributes and skills, The right kind of people, and Management support*) can be considered to fall under the category of People: they relate directly to people’s personal attributes or the way they present themselves in their organization. The next sub-theme (*Show, do not tell*) was categorized under Approach, since it deals with the approach styles which can be used in the implementation process. Finally, the final sub-themes (*Company culture and Organizational structure*) were categorized under Organization since they deal with a wider company-specific issues.

4.5.1. Personal attributes and skills

It seems safe to say that leading a change in any kind of organizational setting is usually a large effort. Based on the interviews for this research, there seemed to be certain attributes and skills the interviewees felt made this transformation go more smoothly. Bravery (cf. Table 12, INT#1, INT#2) was mentioned as one of the beneficial attributes for this type of change. In terms of key skills to have for the change, most of the interviewees mentioned internal selling skills within the organization to be useful (cf. INT#3, INT#4, INT#1:2, INT#5), and one interview specified that they preferred to do this selling via storytelling (cf. INT#1:3). Not surprisingly, many also listed communications skills in general as an important aspect of the change (cf. INT#6, INT#7). Finally, some other skills that were found helpful for the project included patience (cf. INT#1:4) as well as knowledge about building a design organization within a larger organization (cf. INT#7:2). Overall, it can be said that various people skills could be an important aspect of ensuring that the design transformation goes smoothly.

4.5.2. The right kind of people

Having the right kind of people involved in making the change was another factor that seemed to be crucial to the success of the transformation. Besides the aforementioned individual skills, there were also additional elements which determined what kind of people are the ones that are needed to pull this change through. The first attribute is hardly a surprise, but still several of the interviewees mentioned that finding people in the organization who understand the value of design is prerequisite in making the change happen (cf. INT#8, INT#1:5, INT#2:2). Additionally, these people in the organization also need to have the attitude of a change maker (cf. INT#8:2, INT#1:6, INT#3:2) who are willing to renew things. Finally, finding supporters for design in the form of design ambassadors (cf. INT#1:7, INT#3:3) was considered a big source of support in leading the transformation through smoothly. In general it can be said that having people in the organization who can get behind the idea of design thinking, are willing to make the effort to change the organization and from their own part lead it, seems to be a big help in the implementation process.

4.5.3. Management support

As one of the interviewees said, *“If it comes from that high, then people will react like ‘Well, let’s see what this is about, since this is what our CEO talks about all the time’.”* (cf. INT#10) The support of the management for the design project was one the most often cited supporting factors for the implementation process of design thinking. Among this sub-theme, one of the more specific elements of it which emerged from the data include the management’s willingness to try design thinking (cf. INT#1:8). In general though, many of the interviewees seemed to think that the actions of the management with other people and in the organization as a whole are one of the most important in supporting design transformation. Almost all interviewees seemed to believe that the management’s commitment to design acted as a direct source of validation and legitimacy to design and the design work in the organization (cf. INT#7:3, INT#8:3, INT3:4). It was also cited that the word of mouth, originated by the management, was considered helpful in the implementation process (cf. INT#6:2). Finally, many of the interviewees agreed that the higher in management you can get the support for design, the better it is for the design implementation (cf. INT#1:9, INT#9, INT#10). It can therefore be argued that the management support, from as high as possible, and as public as possible, was seen as an important supporting factor for the design transformation.

4.5.4. Show, do not tell

In terms of what kind of approach is helpful for the overall success of the design transformation, one of the interviewees had an apt response: *“What are the odds that any kind of change will go through if you can’t give any arguments for it? In your own organization’s context.”* (cf. INT#8:5). All of the interviewees seemed to agree on this point: demonstrating something without actually doing anything does not seem to work. In terms of what kind of specific topics were raised regarding this approach, one of the more common suggestions the interviewees gave was to just start to do design in the organization (cf. INT#8:4, INT#6:3, INT#11), preferably in a small scale at first in order to gain the first success cases (INT#7:4, INT#8:6, INT#1:10, INT#2:3). Other suggestions for this approach were to lead the change by example (cf. INT#5:2,

INT#2:4), demonstrate the scalability of actions (cf. INT#7:5), as well as to start measuring the ROI of the design actions as soon as possible (cf. INT#7:6, INT#8:7). Overall, the interviewees seemed to recommend a similar approach to the design thinking implementation as Nike promotes in its slogan: *Just do it*.

4.5.5. Company culture

Another important aspect which partly determines the approach an organization can have on the design transformation relates to the prevalent company culture. Not all interviewees raised this topic up in our discussions, but one of the interviewees had a very clear idea of what kind of a company culture is the best for enabling design transformation; the culture needs to encourage experimentation (cf. INT#1:11), allow and handle failures (cf. INT#1:12), as well as enable creative thinking (cf. INT#1:13). Considering what has been established about design thinking previously in this thesis, this seems to be a valid, reasonable description for an ideal company culture for this change.

4.5.6. Surrounding organization

Finally, the last sub-theme which emerged from the interview data regarding supporting factors for the design transformation relates to the organizational structures. First topic that was raised regarding the structure of the organization relates to the importance of in-house designers. Based on the interviews, there were several important ways how in-house designers could support the design transformation: their knowledge of the organization seems to allow them to work more efficiently compared to external designers (cf. INT#10:2); when an organization has in-house designers, they also seem to know better how to buy design externally (cf. INT#7:7); the more in-house designers an organization has, the more design can be done and the more legitimate the design actions seem to become in the eyes of the rest of the organization (cf. INT#6:4, INT#3:5); and finally, having in-house designers seems to make it easier to design as a whole (cf. INT#3:6). Besides the in-house designers, some of the interviewees' saw having design unit start as an external change-maker within the organization beneficial for the organization's design transformation; for example, it was seen to enable a fresh mindset in the organization

(cf. INT#8:7, INT#10:3) as well as acted as an incubator unit for design (cf. INT#8:8). It could therefore be argued that both having in-house designers, and having these designers to start their work together in a bubble, may be beneficial for the overall implementation of design thinking.

4.5.7. Supporting factors: when and where?

Finally, now that the supporting factors for the design thinking implementation have been identified, this section briefly examines their influence on the overall process of the design change. As a general rule it could be said that the supporting factors seem to be always helpful: no matter the phase the company may be in, having any of the supporting factors will likely make the implementation easier. However, some factors seem to be more helpful and crucial in certain specific phases of the implementation process. This section will take a brief look at which of these factors seemed to have the biggest positive impact on the implementation in the specific phases and gateways of the process.

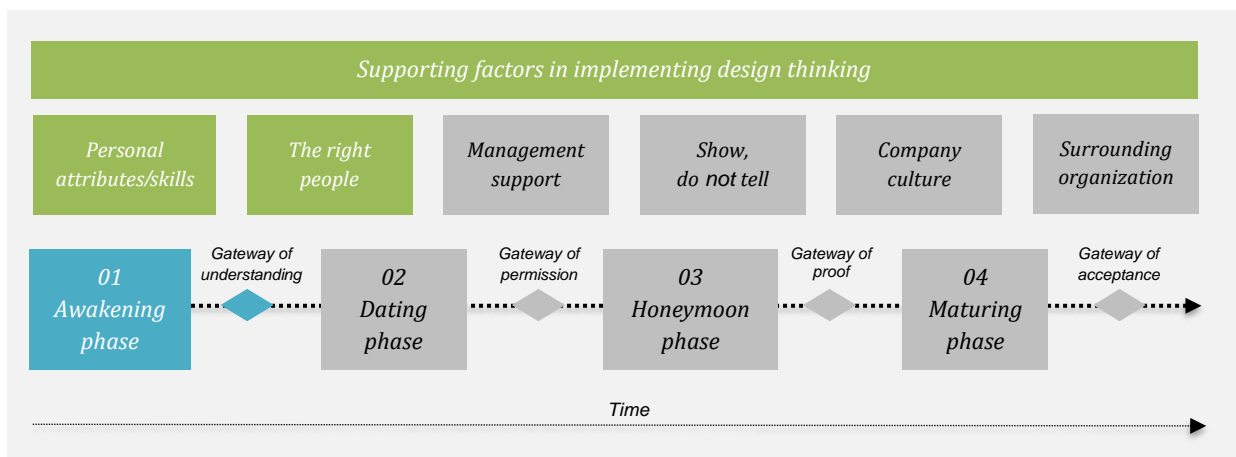


Figure 11: Supporting factors: Awakening phase & Gateway of understanding

Awakening phase and the Gateway of understanding

As already discussed, the Awakening phase of the process deals with individuals coming to learn and understand design thinking, as well as starting to see its benefits and possible value. It therefore seems to be a very individual-driven phase, where depending on the situation, not much external support or guidance will be available to support on it. It could therefore be argued that in this stage and in order for design thinking to be understood and accepted by this individual in the Gateway of

understanding, the *personal attributes and skills* relevant for design thinking as well as being one of *the right people* likely make the implementation easier; if an individual possesses qualities that make understanding and accepting design thinking easier, forming a positive opinion on it is likely to be faster and more permanent. Similarly, it could be argued that if an individual has the 'right attitude' and willingness to drive change, moving to the next phases of the implementation will likely be easier.

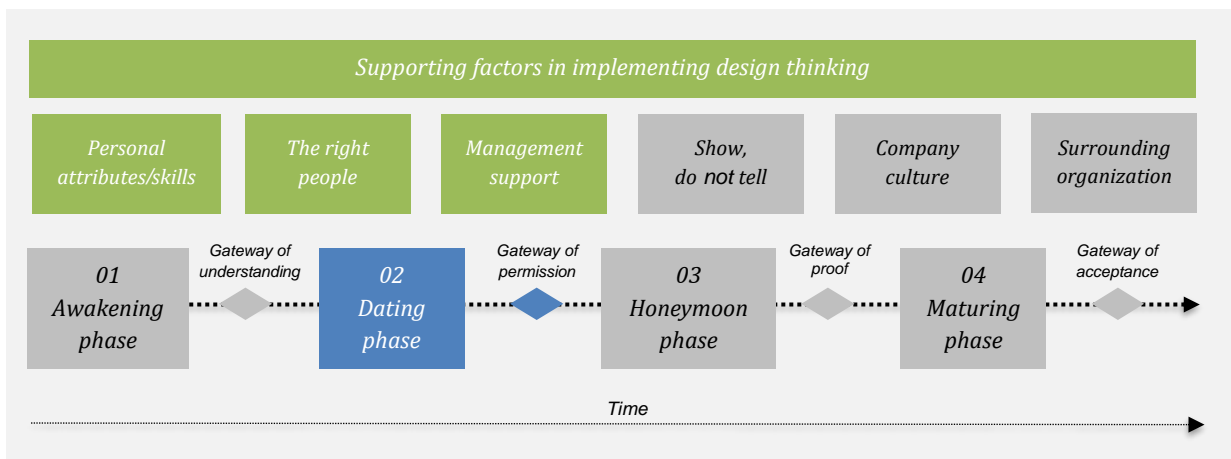


Figure 12: Supporting factors: Dating phase & Gateway of permission

Dating phase and the Gateway of permission

When moving to the Dating phase of the design thinking implementation, where the potential match between the design thinking mindset and the organization is tested and reasons for applying the design methods are looked for, some of the supporting factors from the previous phase seem to remain the same. As this is the stage where a lot of the selling skills of design advocates are being tested, *personal attributes and skills* as well as having *the right people* listening to these pitches does appear to influence a lot of whether the match is found. However, another supporting factor also plays a role in this stage: in order to pass the Gateway of permission and to start gaining a legitimate status in the organization, *management support* could be argued to be, if not vital, then at least extremely important for the success of the implementation process as a whole.

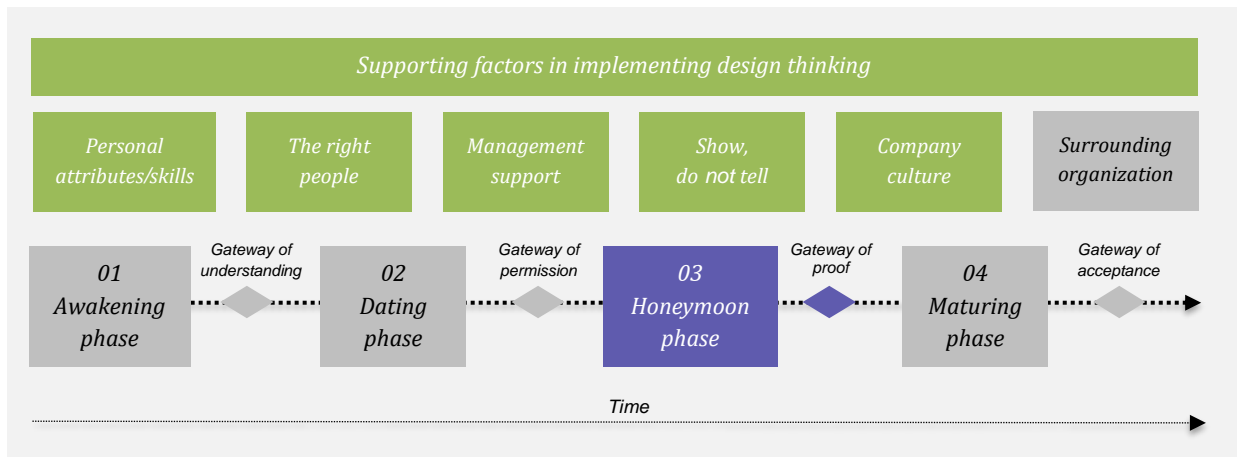


Figure 13: Supporting factors: Honeymoon phase & Gateway of proof

Honeymoon phase and the Gateway of proof

When considering the Honeymoon phase and the Gateway of proof as stages of the implementation process, they seem to be the time when design thinking is really being pushed in the organization to gain larger awareness, to gain credible examples that it works, and measure the benefits it brings: if it goes well and smoothly, the rest of the implementation will most likely also continue in a stable manner. However, if this phase of the implementation does not go well, establishing a clear direction and flow for design change can be difficult to continue in the future. Due to these factors, in this phase and gateway, nearly all of the supporting factors have a large influence on how well the design thinking cements itself into the organization. *Personal attributes and skills* seem to help to ensure that the designers are capable of making and driving the change; *the right people* should be in place in the deciding roles in the organization to enable the spread of the mindset; *management support* seems crucial in spreading the message to the rest of the organization and gaining credibility to the change; *showing the results, not telling them* appears to be the key in making sure the people can concretely see the benefits that the design approaches can bring; and finally, if the *company culture* in the organization is open and willing, making the change easier is likely to be much easier to pull through.

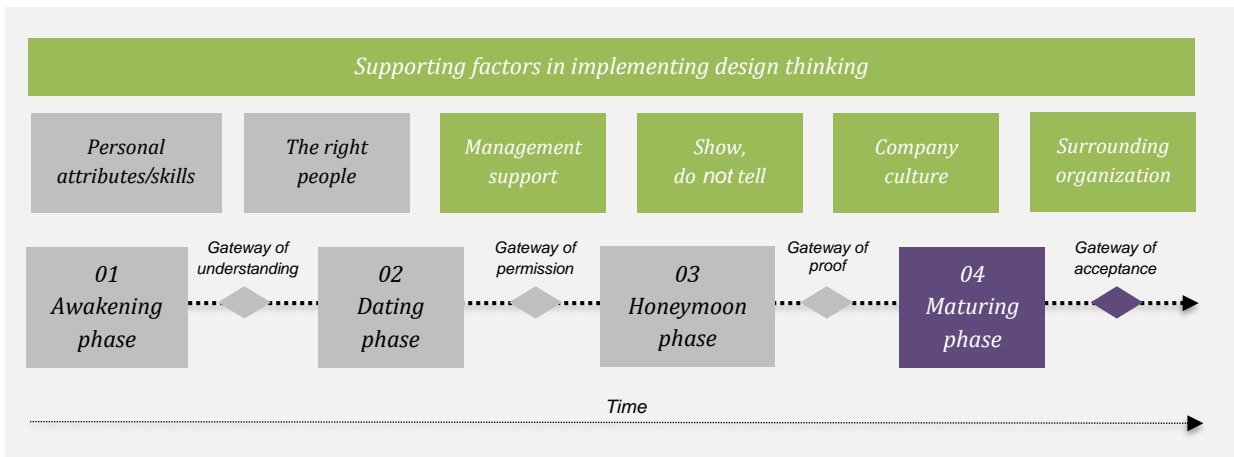


Figure 14: Supporting factors: Maturing phase & Gateway of acceptance

Maturing phase and the Gateway of acceptance

Finally, when looking at the factors that help to stabilize the design transformation and ‘seal the deal’ in terms of the ongoing design change, a few of the supporting features are in the most crucial role. In this phase of the change process, when design thinking seems to have found its position in the organization and the pace of change is likely slower, *management support* continues to be relevant, especially when design is expanding from supporting development processes into supporting business processes. In order to enable this change, *showing rather than telling* also seems to continue to be helpful in making sure that the best practices are shared outside the design team. Similarly the role of the *company culture* appears to continue providing important support in ensuring the change is sticking to the organization. And finally, it seems that *the surrounding organization* needs to be ready for the change that design brings along with, as well as willing to accommodate for it. All these factors and their support seem to make it easier for the organization to eventually move from the maturing phase into the gateway of acceptance and fully design-lead organization.

4.6. Challenging factors in implementing design thinking

Finally, although in ideal world these processes and transformations would go without issues, the real world is often different. It is perhaps universally known fact that change is never easy and implementing design thinking is by no means an exception to this. Based on the interviews, there are plenty of things in an

organizational setting which can disturb, slow down, or even completely stop the implementation process of design thinking.

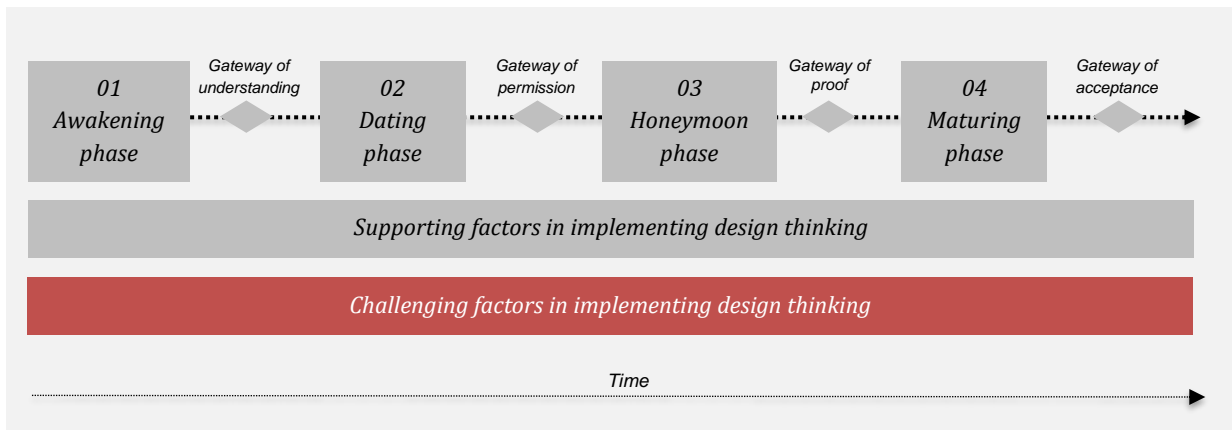


Figure 15: Challenging factors in implementing design thinking

When mapping the data from the interviews for this final theme, a total of eight sub-themes were found. First three of them (*Employee challenges*, *Lack of design leader*, and *Mindset issues*), fall under the category of People, since they mostly deal with personal or person-specific challenges. The following four sub-themes (*Ineffective implementation*, *Challenges of change*, *Challenges of design thinking*, and *Credibility issues*) on the other hand could be categorized under Approach, as they appear to be more related to the implementation approach choices, or themes related to them specifically. And finally, the last sub-theme (*Organization challenges*) could be seen to belong in the Organization category, since it includes a variety of topics that are most relevant to the way organization is structured and managed.

4.6.1. Employee challenges

As with any kind of change, the ones who are doing it have a large influence on how the process flows to the end. The same was found to be true with this research; there were several employee-based findings that the interviewees felt influenced the way design thinking was implemented. In terms of factors that slowed down the process, the fact that this type of change requires a pro-active work attitude (cf. Table 13, cf. INT#1, INT#2) was a thing that if lacking, can severely slow down the process. One of the interviews also mentioned finding skilled people in general to do the change (cf. INT#3) to be a challenge. Finally, one of the bigger issues that one of the interviewees

mentioned dealt with work fatigue (cf. INT#4), which according to the interviewee had resulted from the passionate way the designers in the organization had worked and pushed forward the change. It can therefore be concluded that as this implementation process is about making a change in the organization, it is no wonder that the employees might also experience some stress from it, even though and especially if the right kind of people have been hired.

4.6.2. Lack of design leader

“And I also myself had to learn this the hard way that bottom-up approach, especially I think in a large company, it's not working. (--) You need, as-, as-, as much as I hate it to say that, but you need to have, have some force top-down.” (cf. INT#2:4) As one of the interviewees said, making the change alone, without support from above, can be very difficult. That is why the lack of design leader in the organization emerged as one of the core issues relating to the implementation of design thinking. Some of the interviewees seemed to feel that they had struggled in the implementation due to not having a clear leader and strategy for the design transformation (cf. INT#5, INT#6, INT#2:2, INT#7, INT#2:3). Similarly, lack of an official mandate and pressure for change (cf. INT#2:4) as well as the lack of tools and knowledge (cf. INT#2:4) which the design leader would likely provide, were considered problematic for the overall implementation process. In general it can therefore be argued that without a clear leader with a vision for the change, implementation can be very slow and difficult.

4.6.3. Mindset issues

Finally, another sub-theme that falls under the theme of People relates to mindsets of the people in the organization, and more specifically the issues related to the mindsets. One of the most common issues was the employees' refusal to change their current ways of working (cf. INT#8, INT#4:2, INT#9, INT#2:6). This was a comment that nearly all of the interviewees raised up in one form or another. Some other sub-themes that emerged from the interviews seem to hint that that pride (cf. INT#10, INT#2:7) and envy (cf. INT#10:2) of the other employees could also be factors that slow down the implementation process. Finally, dismissive attitude of the other

employees (cf. INT#8:2, INT#3:2, INT#9:2) was also found to be a factor influencing how smoothly the process goes forward.

4.6.4. Ineffective implementation

One of the more common sources of frustration in a change process could be considered to be when things do not progress or move forward. This was also found to be true in some of the comments of the interviewees. Issues relating to the design not moving from words to actions (cf. INT#2:8, INT#5:2) as well as implementation methods which were found to be high-effort with low return (cf. INT#2:9) were found to be challenging for the implementation of the process, as well as for the overall morale of the design team. The perceived effectiveness of the implementation could therefore be considered to have an influence on how the process as a whole goes through.

4.6.5. Challenges of change

Some of the sub-themes that emerged from the interviews were less surprising than others; one of the former ones relates to the fact that in general, the interviewees considered making a change in the organization challenging. More specifically, change was considered scary (cf. INT#8:3), difficult (cf. INT#2:10), as well as very slow (cf. INT#11, INT#9:3, INT#6:2). Several of the interviewees also mentioned that the contrasts between old and the new ways of working had caused friction and challenges for the implementation (cf. INT#4:3, INT#5:3, INT#4:4, INT#1:2, INT#3:3, INT#5:4), especially relating to some specific business processes such as public tendering process (cf. INT#5:5). Finally, other issues relating to keeping the change under control (cf. INT#8:4) as well the general approach that 'there will always be challenges' (cf. INT#4:5, INT#11:2) were found to slow down the implementation process as a whole.

4.6.6. Challenges of design thinking

Next, some specific challenges that emerged from the data seemed to be related to design thinking as a phenomenon itself. One of these challenges, which has already

been discussed to some extent, relates to the challenges of measuring design and design thinking and its impact (cf. INT#5:6, INT#7:2, INT#6:3, INT#10:3). Another issue that design thinking was considered to bring along related balancing between customer experience and a good business (cf. INT#11:3, INT#6:4). Finally, one interviewee also mentioned that 'design thinking mania' (cf. INT#9:4), which they considered has taken over many agencies and companies, could potentially lead to unprofessional design work and bad experiences with design, which ultimately could make the design thinking implementation more challenging.

4.6.7. Credibility issues

On top of the general challenges of design thinking, there were also some challenges that seemed to be related directly to its credibility. One of the most common issues on this area relates to design thinking not being understood in the organization (cf. INT#2:11, INT#5:7, INT#4:6, INT#11:4, INT#7:3), or that its worth is not seen (cf. INT#4:7, INT#2:12), likely due to some of the challenges in understanding it. Finally, one of the interviewees mentioned that design at the strategic level in the organization is questioned (cf. INT#10:4), which was also considered to influence the implementation process negatively.

4.6.8. Organizational challenges

Finally, additionally to these issues, several challenges related to the organizational structure, setting and context also emerged from the interview data. One of the most common challenges that the interviewees mentioned was related to the size and the various silos of the company (cf. INT#1:3, INT#9:5, INT#8:5, INT#2:13, INT#5:7), which also relates to the challenge of design needing to be a collective activity in the organization in order to succeed (cf. INT#4:8, INT#10:5, INT#1:4). As with nearly any kind of change, bureaucracy was also found to be a challenging factor in the implementation process of design thinking (cf. INT#3:4, INT#8:6). Other organization-specific issues included being in B2B business environment, which one of the interviewees considered to cast its own problems into the implementation of design thinking (cf. INT#5:8), mostly due to the fact that in B2B setting the customers

are not the users of the product, and the customers' high influence on the product and service offering. Finally, some of the interviewees felt that scaling up the design thinking activities in the organization had proven to be challenging (cf. INT#4:9, INT#11:5) due to for example prioritization issues (cf. INT#4:10, INT#11:6) as well as the dangers of losing the spirit of design in the process of the growth (cf. INT#1:5).

4.6.9. Challenging factors: when and where?

Finally, similarly than before with supporting factors of the implementation process, this section takes a look at the challenging factors and their influence on the individual phases of the implementation process. As with the supporting factors, the challenging factors by nature have an overall negative impact on the way design thinking is implemented; however, some of them seem to be especially harmful for certain specific phases of the implementation process. Some of these challenges are also unavoidable by nature, whereas others can be avoided with planning and precautionary measures. The following paragraphs will give short descriptions on what challenging factors have the most negative influence on each phase of the process.

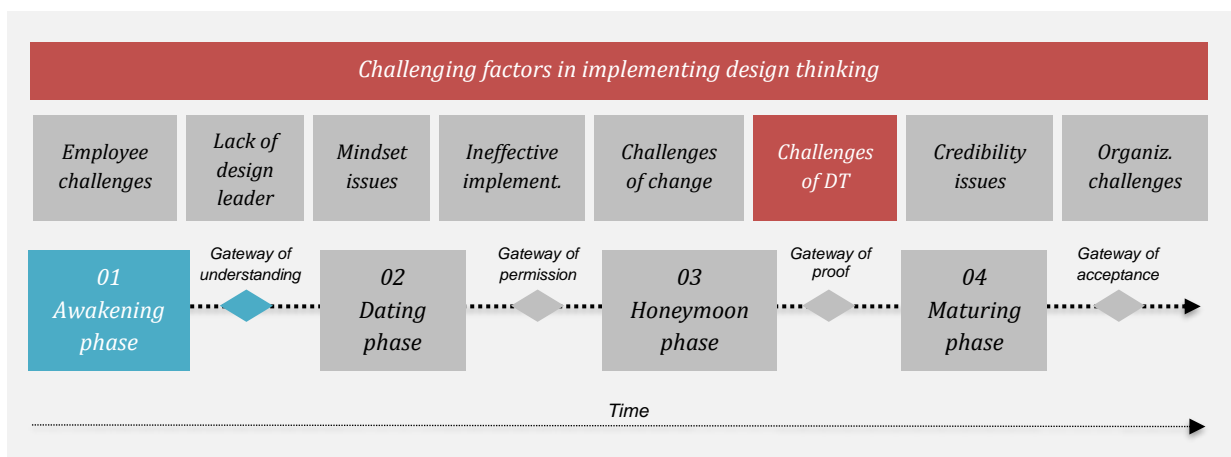


Figure 16: Challenging factors: Awakening phase & Gateway of understanding

Awakening phase and the Gateway of understanding

As stated before, the Awakening phase and the Gateway of understanding are very individual-based activities in the process. Due to this fact, many of the challenges that generally hinder the process of implementation in an organization do not have a strong effect on them. However, since this phase requires the individual to

understand design thinking, the overall *challenges of design thinking*, especially relating to understanding design thinking, seem to have a strong influence on whether this phase is successful or not. After all, if the person who learns about design thinking is not able to understand it or see the benefits of it, the chances of them introducing the phenomenon to their organization can be considered quite slim.

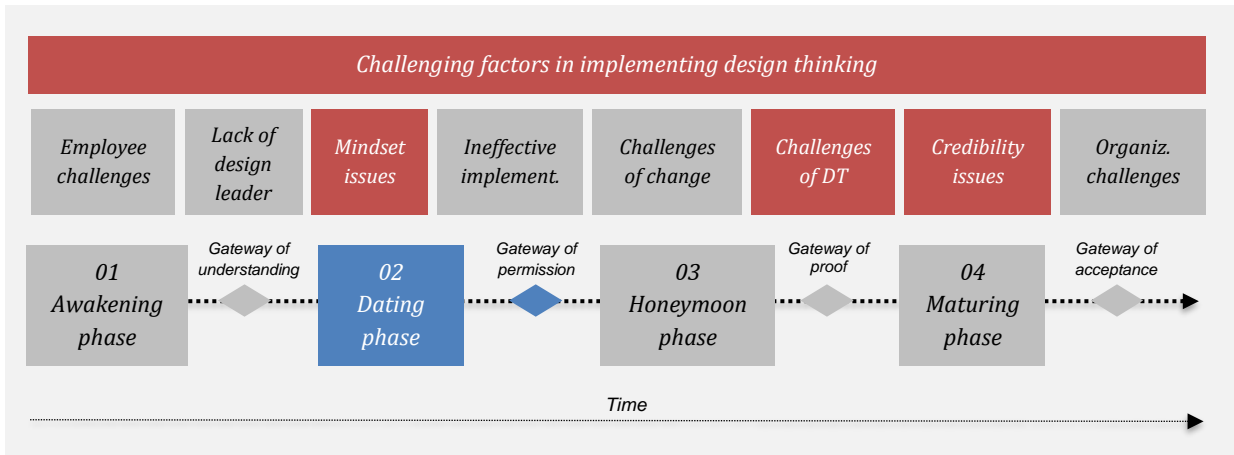


Figure 17: Challenging factors: Dating phase & Gateway of permission

Dating phase and the Gateway of permission

In the Dating phase and gateway of permission stage of the implementation, the most harmful of the challenging factors appear to be the ones that make selling the idea of design thinking in the organization difficult. Due to the overall *challenges of design thinking* and the challenges related to understanding it, communicating design thinking may prove to be a daunting task. The *credibility issues* of design thinking may also make it difficult to pitch the idea of design thinking to a manager in a successful manner, especially if there are some *mindset issues* relating to the adoption of new practices and change within the organization. Whether these challenges appear individually or all together, if the organization does not have any of the supporting factors helping to push design through the gateway of permission, the design transformation is likely to have difficult, tiring and long times ahead of itself.

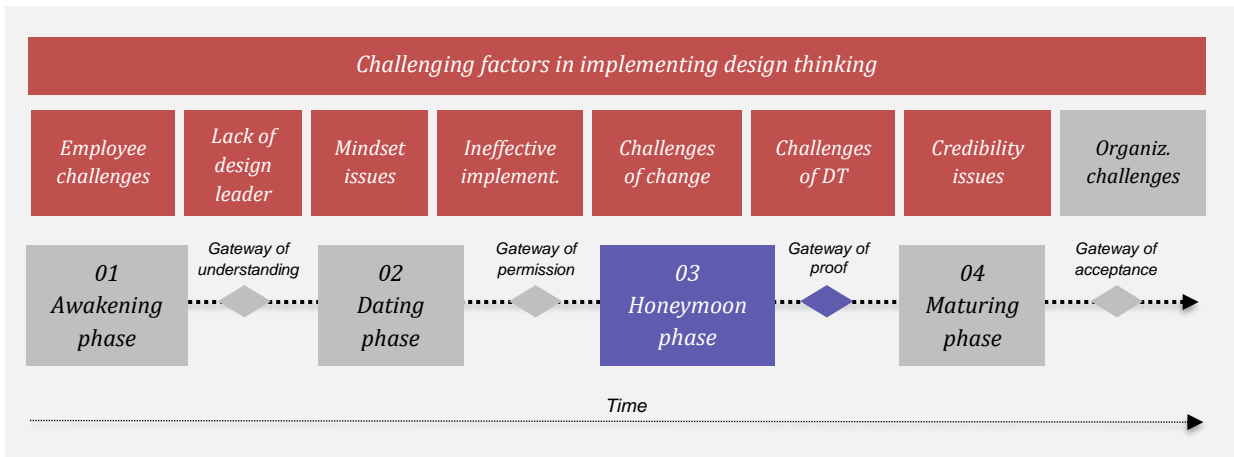


Figure 18: Challenging factors: Honeymoon phase & Gateway of proof

Honeymoon phase and the Gateway of proof

As discussed previously, due to the active and busy nature of it, the Honeymoon phase and the following Gateway of proof are a crucial time for the design transformation. Unfortunately, there seem to be several challenges which can make this a very difficult time for the change process. In fact, based on the data it seems that almost all of the established challenging factors can cause serious troubles for the Honeymoon phase. In terms of the *employee challenges*, finding and hiring skilled people can be a difficult task, especially since ideally these people should all have a pro-active attitude towards change making. *The lack of design leader* can also cause severe issues in this stage, as without a leader the budding design activities and work will likely not have a common direction, goal, or person to look after them. Similarly than in the previous phase, *mindset issues* continue to be relevant and challenging, especially if the change is not welcomed or the designers pushing for the change are faced with unpleasant attitude from the other employees. *Inefficient implementation* may also be a serious problem at this stage, since if the awareness of design or knowledge regarding design is not done efficiently, the desired impact on the people in the organization may not be big enough to argue for the continuous use of design thinking. The fact that there appear to also be certain *challenges of change* which are quite universal may also slow down the process, especially if it is combined with the overall *challenges related to design thinking*. Finally, as this phase is all about being able to push through the Gateway of proof, *credibility issues* relating to the

performance of design, if present, will likely have a large negative influence on the overall implementation process.

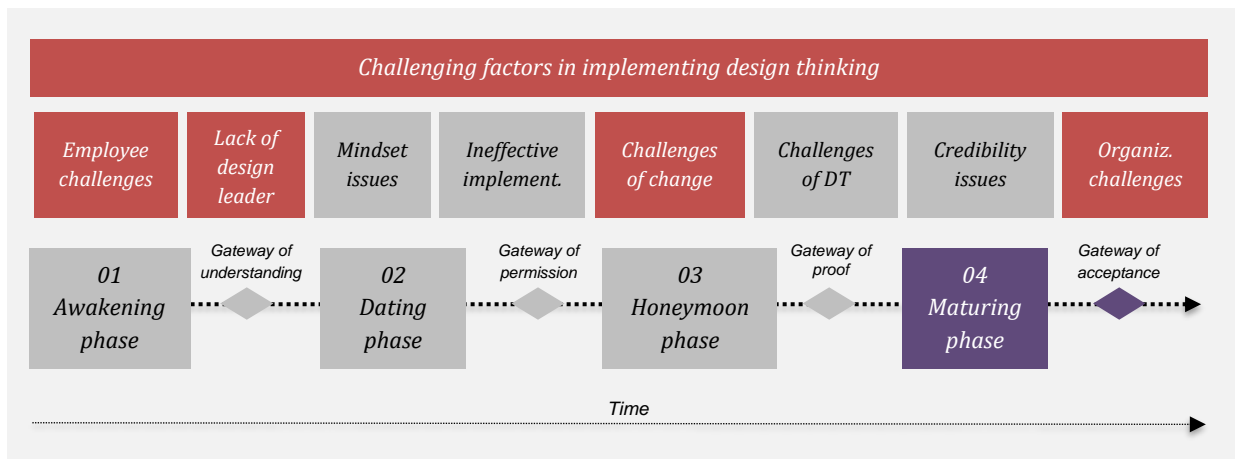


Figure 19: Challenging factors: Maturing phase & Gateway of acceptance

Maturing phase and the Gateway of acceptance

Finally, while in the Maturing phase design seems to stand on quite a solid ground and the goal is a more lasting and wide-spread implementation of design throughout organization, many factors may also challenge this phase. If there still is a *lack of design leader* in the organization, the maturing phase will likely offer many difficulties for further implementation; after all, in order for design to be an embedded part of the organization, it will most likely need to have a clear direction and leader. The overall *challenges of change* also seem to remain relevant in this phase: since the Maturing phase and the Gateway of acceptance require the organization to accept the design change as a part of the organization, challenges regarding people's unwillingness to change will likely cause problems and slow the change. Some of the *employee challenges* also seem to be related to this, especially the ones that deal with designers' wellbeing at work; if the transformation work takes a lot of time and effort, there might be a danger for burnouts and other problems among the designers. Finally, one of the biggest challenges for the final phase of the implementation deal with *organization challenges*. The size, silos, and bureaucracy of large companies may make the transformation work difficult and very slow, while at the same time scaling up the design activities to accommodate the expanding change can also prove problematic. In general, the issues of this implementation phase seem to focus on having limited resources for the change in a large, complex, and slow organization.

4.7. Conclusion: A design thinking implementation process model

As can be seen, this study yielded several findings regarding the relationship the chosen large Finnish companies have with design and design approaches. Overall, this study was able to identify several themes from the interview data which are related to topics such as the nature of design thinking, the motivations of applying it in an organization, the different ways design can be utilized in an organizational setting, as well as the characteristics of design thinking implementation process itself. To increase the structure of these findings, these themes were categorized under one of three categories (approach, people, and organization) depending on their core idea and message.

The main findings of this study present these themes in the shape of a design thinking implementation process model. This model consists of four different phases of design thinking implementation which describe the characteristics of the implementation process, what kind of actions are likely to occur in these phases, and how the role and meaning of design evolves in the organization as the change goes further. However, the model also suggests separating these phases with four gateways, thresholds which describe different obstacles and challenges in the organization and which the design change will need to address and solve in order advance to the next phase of the implementation process. Finally, this study identified several factors that both challenged and supported the overall design thinking implementation in an organization. Due to the insightful nature of these findings and their relevance to the design change as a whole, the supporting and challenging factors were also added to the final design thinking implementation process model.

In the end, the main findings of this study can be roughly divided into three main areas, all which influence one another: the design thinking implementation process phases, the organizational thresholds or gateways between these phases, as well as the supporting and challenging factors of the overall implementation process. To understand these findings better and to gain a more holistic view on them, the next chapter of this study discusses the meaning of these findings and their relationship with the extant literature and theories.

5. DISCUSSION

*“Thinking about design is hard,
but not thinking about it can be disastrous.”
–Ralph Caplan (Lasky, 2012)*

Before discussing the findings of this study in the light of the extant literature, let us review briefly where we started from. As discussed in the first chapter, after the initial and brief review of the literature and establishing the research gap for this study, the research questions formed out to be:

1. *Why and how is design thinking implemented in large Finnish companies?*
2. *What are the factors that enable or challenge the implementation of design thinking in large Finnish companies?*

Based on these research questions and a review of existing literature, the theoretical standpoint for this study provided the more specific question areas with which these research questions could be answered. Based on the theoretical standpoint of this study, Figure 20 visualizes the core themes of this research and empirical findings.

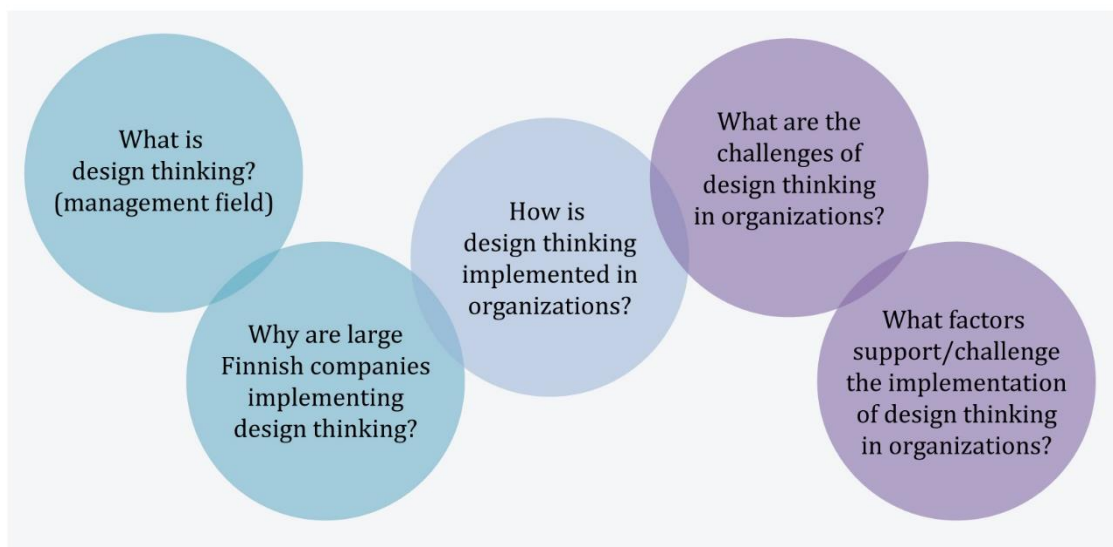


Figure 20: The core themes of this research and empirical findings

The following sections discuss these themes by comparing the findings of this study to the earlier reviewed extant literature in the form of an analytical and critical

dialogue. The aim of these comparisons is to position the findings of this study in the frame of extant literature, as well as to hopefully provide the reader some interesting new perspectives and insights to the design thinking discourse.

5.1. Design thinking as a term: decidedly ambiguous

In terms of understanding and defining the term design thinking, this thesis took a circular approach, suggesting that there were certain four key definitions to design thinking: sensemaking, problem-solving, act of creation, and reflection. Based on the reviewed literature these four definitions were often used to describe the way designers think and work.

From the interviews of this thesis, the interviewees discussed both how they define design thinking as well as what elements design thinking has. In terms of how design thinking was defined, there were some parallels to the extant literature. Many of the interviewees saw design thinking as something cognitive; either a way of thinking, “*Well, for us, and for me, design thinking is a way of thinking. Hehe, thinking.*” (cf. Table 8, INT#1) or problem-solving, “*Design thinking is exploration. Instead of just solving the problem by means that you already know someone else has done, you find a new way of doing things.*” (cf. INT#4). These could be argued to align with the sensemaking (e.g. Cross, 1982, 2006; Lawson, 2006; Dorst, 2011; Liedtka, 2014) and problem-solving (e.g. Rittel & Webber, 1973; Buchanan, 1992; Martin, 2010; Dorst, 2011; Kimbell, 2011) aspects of the suggested circular model, and therefore fit into the earlier definitions of design thinking very well.

However, some of the interviewees also defined design thinking as a process, human-centered development, or as ‘not a set of certain methods’. For example, one of the interviewees describes design thinking as “*a kind of process, with five steps: Empathize, Research, Ideate, Test, Execute.*” (cf. Table 8, INT#6). These action-based definitions could be seen to relate to the creation aspect of the circular model to some extent, but they can hardly be considered a perfect fit for it. Similarly, while some of the other ways design thinking was seen by the interviewees (as an ambiguous term that can be difficult to understand and which may be used for marketing purposes) could be seen to follow some of the common themes and discourses within the

literature regarding design thinking (e.g. Kimbell, 2011; Hassi & Laakso, 2011a), aligning them with the suggested circular model does not work well.

When looking at what the interviewees considered to be some of the core elements of design thinking, parallels can be found to some of the more established design thinking practices and methods discussed in the literature review. Human-centricity, empathy, and multidisciplinary are all elements that can be seen to manifest in the collaborative ways of working (e.g. Brown, 2008; Meyer, 2015; Liedtka, 2014; Chasanidou et al., 2015), adoption of new perspectives, as well as in observing the environment relating to the projects (e.g. Shostack, 1984; Holloway, 2009; Stickdorn & Schneider, 2010; Liedtka, 2014; Chasanidou et al., 2015). One of the interviewees describes this attitude followingly: *“Yes, it [design thinking] is bringing that certain type of way of thinking there where you don’t look at things from only one perspective, but instead you aim to get a holistic view from many different angles.”* (cf. Table 8, INT#9). Similarly, flexibility, iterative nature, and co-creative way of working can also be considered to parallel with the methods for constant improvement and fast failing approach (e.g. Boland et al., 2008; Brown, 2008; Holloway, 2009; Hassi & Laakso, 2011b) as well as collaboration. Finally, some of the findings show that design thinking seems to be associated with ‘being part of something bigger’, doing things in many different ways, as well as certain hype elements. These findings are also echoed to some extent in the existing literature, since design seems to be argued to be a holistic approach for variety of industries (e.g. Lam, 2017; Shapira et al., 2017) while also having faced some criticism regarding the hype status of it (e.g. Ladner, 2009; Badke-Schaub et al., 2010; Nussbaum, 2011).

The findings of this study provide further support that clearly defining design thinking seems challenging for both academia as well as the practitioners in the management field. The findings also show a tendency of some of the interviewees to avoid the term design thinking in communication due to the understanding issues relating to it. For example, one of the interviewees says that *“We use the term design thinking quite a little because no-one understands it. (--) Service design is a term that people know because they have heard about it, and we like to talk about that.”* (cf. Table 10, INT#8:3). Therefore, by showing that many of the findings of this study do

support the existing definitions and elements that the past literature has attached to design thinking while also demonstrating some disagreements and issues related to it, the term design thinking could be argued to be decidedly ambiguous.

5.2. More than competitive advantage and improved processes

In terms of the reasons why companies are using design thinking, this thesis took a look at the literature regarding what are the possible reasons driving for the need to use design thinking. As discussed already in the introduction of this thesis, the general understanding in the management field seems to be that the innovation capabilities and innovation management practices are crucial in maintaining a competitive position in the volatile markets of today (e.g. Beckman & Barry, 2007; Brown, 2008; O'Connor, 2008; Crossan & Appaydin, 2010; Martin, 2010; Govindarajan et al., 2011; Cabello, 2015). In this context, design thinking was framed as a way to break innovation barriers and improve organizational processes with a more customer-driven approach (e.g. Holloway, 2009; Liedtka, 2014, Brown, 2008; Martin, 2010). Naturally, the reasons discussed in the previous sub-section relating to the nature of the design thinking mindset, also act as one potential reason for companies to utilize it; what company would not want to gain the benefits that the design thinking mindset promises?

When investigating the reasons why some of the large Finnish companies had decided to invest in design thinking, some of the reasons that emerge reflect these claims directly. Several external influences, such as the shifting markets, survivability on these markets, pressures of the competitors, as well as technology's diminishing competitive advantage were one of the most often cited reasons for utilizing design thinking. One of the interviewees aptly states, that "*You need to be competitive in the future, so you need to invest in design thinking.*" (cf. Table 9, INT#2:4).

Besides these external reasons, other motivations also rose from the data to support the arguments the literature presents, especially regarding the improvements design thinking can bring to the processes of an organization. Design thinking was seen as a way to create overall competitive advantage, for example in the form of improved

processes, business results, and innovation capabilities, as well as the general customer experience as a whole. As one of the interviewees said, “*For the uppermost management, design strategy brings new business models, new, unique ways of operation, new innovation, and the innovation capabilities of the organization.*” (cf. Table 9, INT#6:3).

However, some of the emerged motivations for employing design thinking went beyond the benefits of competitiveness and enhanced processes. Some of the interviewees talked about internal motivations for design thinking; reasons which showed how design thinking could complement an organization’s current state on many levels. Some interviewees felt that design thinking was fitting to the business model they had, or some of the processes (such as frame agreements) they employ. Others mentioned that design thinking had in the sense slipped into the organization via other changes; “*We were pushing the agile methods into our company at the same time as the first service designers were hired. (--) So we started to develop in an agile manner, and design thinking and this type of agile development as a way of thinking, they go hand in hand pretty nicely.*” (cf. Table 9, INT#5). Another reason an interviewee suggested, which is as remarkable as it is simple, was that large companies are motivated to try design thinking because they could financially afford it. Finally, some of the interviewees also considered design thinking to be a natural way to do things, which is a motivation itself to implement it. “*I think there are many reasons [for why companies should do design thinking]. I've never was asked myself that question, because it's so... it's so natural to me, like, of course, it's like an 'of course, don't you see, anything else is just madness!'*” (cf. Table 9, INT#7:4). To this interviewee it seemed that design thinking approach *is* the logical, natural approach to do things, and that not following design thinking would simply be an illogical and unwise way of working.

These types of reasonings and motivations, while not all of them necessarily new information, do not appear to be often explicitly mentioned as reasons for companies to implement design thinking in the extant literature. The findings of this thesis suggest that there is not one single reason to utilize design thinking, but instead there are several of them, many of which can be considered context- and company-specific.

As a whole, the findings of this study would argue that design thinking is not just a solution to be used on one specific problem, but instead can have a holistic influence on several issues.

5.3. Implementing design change vs. measuring it

When talking about the implementation of design thinking, it could be said that there is a rising interest towards how this design transformation occurs. During the spring and summer of 2018 alone, several articles seem to have been published regarding this design transformation process (e.g. Elsbach and Stigliani, 2018; Solomon, 2018; Lyke-Ho-Gland, 2018; Spangler, 2018). Among other things, these articles discuss some of the common challenges (Lyke-Ho-Gland, 2018; Spangler, 2018), benefits (Lyke-Ho-Gland, 2018; Solomon, 2018), application areas (Lyke-Ho-Gland, 2018), and tips (Spangler, 2018; Solomon, 2018) for implementing design thinking. Elsbach and Stigliani (2018) took a more detailed approach by examining how the use of certain design thinking methods and tools enables certain types of company cultures within organizations.

However, as good and important as these articles are, research regarding the step-by-step implementation process of design thinking still appears to be sparse with only few exceptions (e.g. Rauth et al., 2014), and something this study hopes to provide further substance to. In their research, Rauth et al. (2014) determined some actions that had supported the overall implementation process of design thinking. However, since the findings of this study not only provide suggestions for supporting a design change in an organization, but also a more comprehensive model for the implementation process as a whole, the Design Ladder model (Danish Design Center, 2015) of evaluating design in an organization will be used as the main referencing point for discussing these findings. While not academic by nature, as the Design Ladder model appears to be widely utilized among practitioners in determining changes in the design implementation (and was also mentioned by several interviewees of this research), it can therefore be argued to be a meaningful frame of reference for this study.

The Design Ladder model (Danish Design Center, 2015) consists of four stages of organizational design implementation: the stages of non-design, design as form-giving, design as process, and design as strategy (Danish Design Center, 2015). In all of these stages, the importance and meaning given to design in the organization change in remarkable ways, becoming strategically increasingly important the higher the organization climbs on the ladder.

When comparing the findings of this study to the Design Ladder model, a few interesting comparisons can be made. Based on the overall approaches, the two definitely share some similarities. As Figure 23 shows, the two models seem to align with each other quite well; the higher a company is on the Design Ladder, the further in the implementation process of design thinking they also are. This is only natural, as both models depict the idea of how the meaning of design matures and grows in an organization over time; first moving from the non-existing status to the operational levels (form-giving), advancing from there to tactical levels (process), finally reaching the strategical levels (strategy). The transformation from Awakening to Dating, Honeymoon, and finally to Maturing phase shares many similarities to this approach.

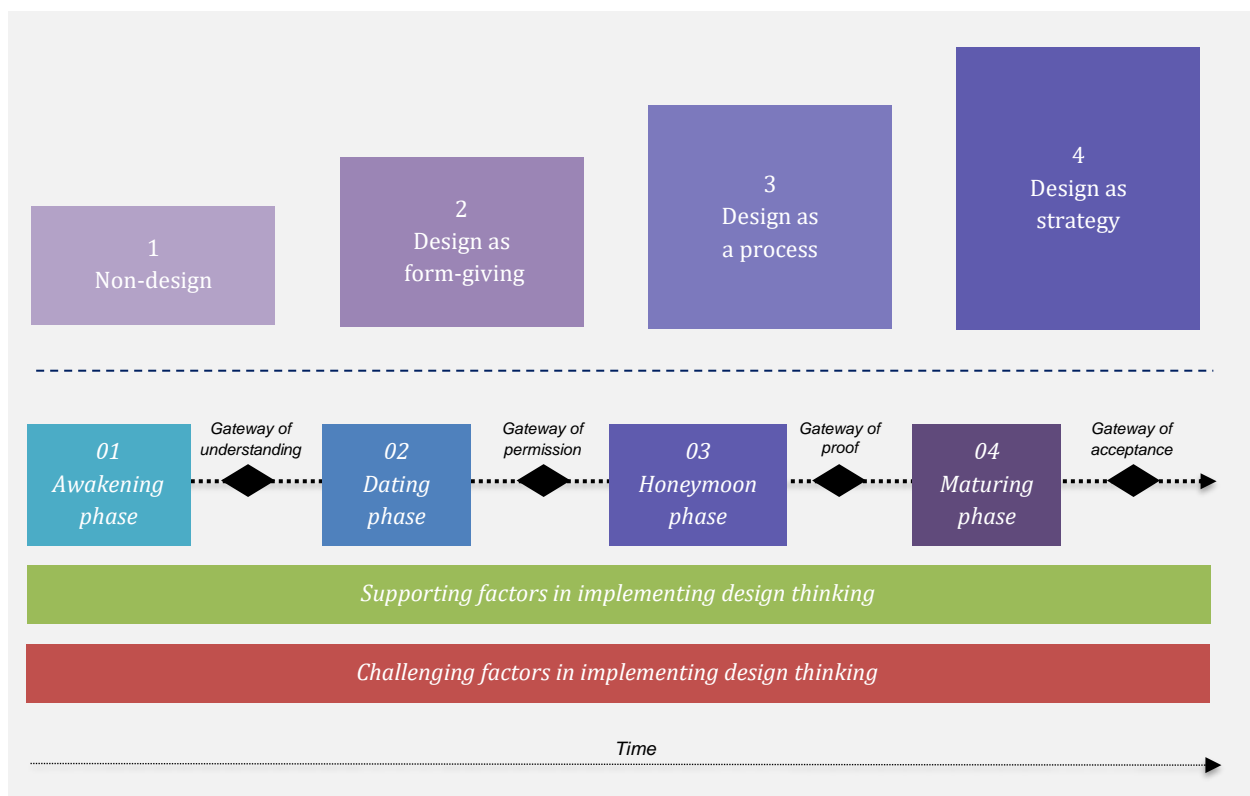


Figure 21: Design Ladder Model (Danish Design Center, 2015) vs. design thinking implementation process

However, while the overall direction of the two models appears to be similar, the actual meanings of the stages are somewhat different. As far as I have been able to study, the Design Ladder model (Danish Design Center, 2015) does not specify what happens in the organization at the each of its stages, but instead acts more as of an ‘achievement ladder’: as design moves to a new stage in the ladder, the organization climbs up on the ladder, reaching a new achievement or milestone on their design journey. On the other hand, the implementation process which emerged from my study is a more in-detail description of what the concrete implementation path between these ladder stages can be like, including both the phases of implementation as well as the gateways in between these various phases. By nature, it could be argued to give a more practice-oriented view to the matter and could potentially act as a roadmap and toolkit for companies wishing to pursue the design change.

In terms of validating the phases of the implementation process of this study, some support can be found from the study of Rauth et al. (2014). In their study, they found that ‘several interviewees described that, during the early phases of implementation, there was an initial honeymoon period during which managers and coworkers were excited about DT—with the fundamental belief that it was working and with little demand for proof of its usefulness.’ (ibid: 50). This goes to show that perhaps the findings of this study, or at least some parts of the implementation process model, could be replicated and found to be similar in other contexts.

Overall it could be argued that the two models, Design Ladder and the implementation process model suggested by this research, represent different point of views to the same design transformation; the Design Ladder (Danish Design Center, 2015) can be considered to be a useful tool for measuring the design transformation in the organization, while the implementation process model of this study with its phases and gateways could act more as a guideline for the overall implementation. In the future, it would be interesting to see whether the suggested implementation process model of this study would be different from the design implementation processes of for example companies who are smaller in size or based in countries other than Finland.

5.4. Challenges of all types, shapes, and sizes

As established earlier when reviewing the extant literature, the challenges of design thinking can be considered an area of research which could benefit from further research (e.g. Carlgren et al., 2016; Dunne & Martin, 2006). However, despite this need for further research, many challenges regarding to design thinking have still been found and established in the previous literature. In the literature review of this study, some of these challenges were categorized into *implementation issues* (e.g. Nussbaum, 2011; Carlgren et al., 2016; Kupp et al., 2017), *contrasting cultures of working* (e.g. Rauth et al., 2014; Carlgren et al., 2016; Kupp et al., 2017), *shifts in power dynamics* within the organization (e.g. Ladner, 2009; Carlgren et al., 2016; Kupp et al., 2017), *proving the value of design thinking* (e.g. Rauth et al., 2014; Carlgren et al., 2016; Lyke-Ho-Gland, 2018), as well as *skills being difficult to learn* by the people in the organization (Carlgren et al., 2016). As stated earlier, detailed and in-depth research regarding the implementation of design thinking remains a relatively unmapped area of research, which is why in this study one of the larger focuses was to examine what kind of challenging (as well as supporting) factors can influence the implementation process of design thinking, instead of the more widely covered topic regarding the general discussion regarding the challenges and problems of the design thinking approach itself.

In general, many of the challenges that emerged from the data of this study share similar themes to the existing research findings regarding the overall challenges of design thinking. The general challenges of change, especially relating to the *contrast between old and new ways of working*, were heavily emphasized in the research findings of this study; for example, one of the interviewees states that *"It is quite a large cultural change. Like for example a company who is very product and business-centric where the customer is not really in the core, and then like the methods of design which are very iterative and demand that you have to tolerate ambiguity, in many ways it can be a very different and new way of doing and thinking about things."* (cf. Table 13, INT#1:2). These types of challenges seem to align quite well with similar studies, such as the one made by Carlgren et al. (2016).

Some of the mindset issues and human speed bump challenges which Kupp et al. (2017) discuss also emerged from the findings of this research, for example in the form of bureaucratic policies, large organizational size as well as the many silos of the organization, and people's unwillingness to change their ways of working. One of the interviewees' for examples noted, that: *"For many people it [the ambiguous way of working in design thinking] is really difficult to accept because they are used to being like 'now that I am the decision-maker here, I know what I decide about'. (-) We've had some natural turnover of employees, some people have retired, there has been a few organizational changes, and so on. In general, most are able to adapt to change but it is natural that in an organization of this size, not everyone is capable of or willing to change, and then you just need to wait until people retire and the space is freed. That's just the ugly truth."* (cf. Table 13, INT#4:2) which gives further support to Kupp et al.'s (2017) arguments.

The challenges related to measuring the impact of design thinking were also one of the most reoccurring themes in many of the interviews in this study. One of the interviewees describes this challenge by stating: *"Yeah, measuring the impact is also something that is still little bit difficult because it's a long-term impact, and it's very hard to justify the investment, because you don't see immediate results."* (cf. Table 13, INT#6:3). While these challenges of measuring impact could also be argued to relate to the challenges of working with a design mindset which is more ambiguous and long-term oriented than in typical management, they can regardless be considered to support some of the extant literature on the challenges regarding the measurability of design (e.g. Carlgren et al., 2016; Lyke-Ho-Gland, 2018).

The challenges related to accepting design thinking, discussed by e.g. Carlgren et al. (2016) as well as Rauth et al. (2014), were also supported in the findings of this thesis. Based on the findings of this study, the interviewees seemed to feel that understanding design thinking can be difficult and that the employees in the organization do not seem to see its worth. One of the interviewees describes this by saying: *"A lot of people when they hear design thinking they think about the graphical elements and especially in terms of, a problem in company like ours, and then when people hear the term design thinking they connect it with the-, with the conception of*

graphic design, so they believe design thinking is about making products look nice." (cf. Table 13, INT#5:7), demonstrating that communicating about design thinking can cause challenges to the design professionals in these organizations.

Finally, the shifts in power dynamics that Carlgren et al. (2016) identified also emerged to some extent from the data of this research. Based on the interviews, other employees' pride and envy towards the designers was also considered a challenge which could be seen to relate to the power dynamics of the organization. As one of the interviewees said it: *"I think that is where it is coming from [the resistance against design activities], of course when we kind of were allowed to do things free from the restraints. The reason is probably that there are a lot of people who have been working here much longer than any of us. (--) I can understand that someone who has been working here for 20 years will get upset that 'Oh, so do you think we don't know how to do these things?', and 'why do those people get to do it like that?'"* (cf. Table 13, INT#10:2). The interviewee seemed to think that part of the opposition towards design activities might have been rooted in the feelings of annoyance and pride of other, especially more senior employees. The interviewee seemed to feel that more experienced employees did not want to give up their seniority and expertise power on some areas to a newly established unit of designers and admit that there is something that could be improved on the current status quo. Additionally, the freedom of restraints the new design unit seemed to annoy more experienced employees, according to the interviewee, hinting for possible jealousy or envy.

However, there were also many challenges that were identified in my research which did not find an immediate echo in the existing literature. For example, the challenges related to the lack of design leader were found to be crucial for one of the case company and for their design thinking implementation process as a whole. As one of the interviewees mentions: *"And I guess the fact that we don't have a Chief Design Officer is maybe also an indication of that. That there is no-one on a high corporate level who would be responsible for this."* (cf. Table 13, INT#2:3). Based on the interviews of this study, this lack of a design leader seemed to influence the implementation process very negatively.

Similarly, some of the important challenges which the existing literature does not seem to address explicitly relate to the wellbeing of the design employees in the organization. The challenges related to the designers' work fatigue emerged as an especially interesting and important topic in this study, as one of the interviewees explained: *"Our people are hard-working, they are passionate. Of course we are also in a place where we are a certain kind of a competence center for all our developers. We see all the silliness and overlap that happens, and what others could do instead to improve on them, so on top of that actual design work and transformation work we additionally start to have a lot of other needs where we are being asked for and where they need us. (--)* Which then leads to the fact that we have genuinely had quite a lot of work fatigue in our unit. What leads to it is that when you push this change forwards, and then at the same time you see all the things which should change, it really burdens and weighs on a person a lot. (--) And when in principle, the people who are passionate about things, for them it really is very burdening." (cf. Table 13, INT#4). The challenges of finding skilled people with this type of pro-active work attitude, as well as the challenges related to the various role requirements that in-house designers are expected to fill, were some of the most intriguing findings which emerged from the data.

Finally, some of the interviewees' argued that conducting B2B business inherently brings along some challenges for design thinking. One of the interviewees summarizes these struggles very well: *"There's an added complexity in our business in that we are B2B. (--)* In B2C's being design-led and making sure you're focused on the experience at every touchpoint is different when your customer is your user, when you are selling directly to the people who use your systems. (--) I mean our customers, right now, are not at the stage where they are obliging us to deliver fantastic experiences. They are still asking us to deliver technical, functional requirements. Some of those technical, functional requirements sometimes are related to usability, but that's different than experience. (--) But in our business [B2B] we have to satisfy a customers' wishes, where at the same time satisfy our delivery of a fantastic experience to a user, even though we know users are not paying any money for our stuff. And that makes the audience, when I give these talks, that's the most heated discussion. (--) How to solve this customer need and this user need at the same is exactly why design thinking is moving slower in B2B's than in B2C's." (cf. Table 13, INT#5:8). These challenges and

differences between B2C and B2B companies would also seem an area of research which could benefit from more research in the future.

5.5. Clear signs of support

Finally, one of the key points of research for this study was to not only study the challenges related to design thinking implementation, but also examine factors which could support this change process. As mentioned, the area of research regarding the implementation process of design thinking still appears quite sparse, although there appears to be some growing interest towards it (e.g. Elsbach & Stigliani, 2018; Lyke-Ho-Gland, 2018; Solomon, 2018; Spangler, 2018). However, despite this renewed interest towards design thinking in organizations, few articles seem to explicitly discuss the factors or approaches which support and advance the implementation of design thinking in an organization, 'In particular, there is little knowledge about what managers actually do to make DT [design thinking] happen in organizations' (Rauth et al., 2014: 48).

As discussed earlier, Rauth et al. (2014) provide one of the exceptions to this scarcity in research with their study regarding the common challenges as well as the various supporting activities of design thinking implementation process. Their (ibid) research therefore offers a great point of analysis and comparison for the supporting factors found in this thesis. In their research, Rauth et al. (2014) identified five key efforts companies had employed in order to legitimize the use of design thinking: 'demonstrating the usefulness of DT, meshing DT with organizational culture, convincing through experience, the creation of physical spaces and artifacts, and the creation of ambassador networks' (ibid: 51). These efforts included actions such as bringing external design experts to speak in the organization, encouraging the creation of internal success stories, finding common ground between existing corporate culture and design thinking, organizing the involvement of design ambassadors in the company, engaging management with design, as well as creating dedicated design spaces and artefacts. Overall, similarly to some other researchers (e.g. Carlgren et al., 2016; Lyke-Ho-Gland,2018) Rauth et al. (2014) concluded that

creating legitimacy for design thinking remained the overarching challenge in the implementation process.

In general, most of the findings of this study seem to align with these key areas as defined by Rauth et al. (2014). In terms of *demonstrating the usefulness of design thinking*, several of the findings of this thesis under *Show, do not tell* of this study support it; the use of internal success cases as a way of communicating the value of design, measuring the ROI of design early on to validate it, and offering plans for the scalability of it all seem to help demonstrate the overall usefulness of design thinking in the organization. As one of the interviewees said it: *"You just can't go to an organization and say that 'now we need to start using design thinking' and then everything will change, but it's small steps. And it's with those small acts and small success stories how we actually do the implementation."* (cf. Table 12, INT#7:4).

In terms of *meshing design thinking with the organizational culture*, some of the findings in this thesis mirror the ones made by Rauth et al. (2014). Involving the managers and gaining the management support early on emerged as one of the key sub-themes for this research, and especially the idea that getting the management to commit to the change would lead to validation of the design activities in the organization is something that could be seen to parallel the findings of Rauth et al. (2014). For example, one of the interviewees of this described that: *"We have had a few good sponsors in the upper management who have been talking about this and kept design on the frame of mind, so to say, and through that supported the growth of the design and design skills, and the promotion of its importance. (--) There is the support and appreciation for what you are doing, starting from the CEO of the business operations."* (cf. Table 12, INT#8:3).

Rauth et al. (2014) also talk about *convincing through experience* as one of the supporting activities for implementation, which could be argued to share similarities with *demonstrating the usefulness of design thinking*. Therefore, the *Show, do not tell* themed findings of this thesis, e.g. *just starting to design* and *leading by example*, could also be seen to support this category of activities. One of the interviewees of this study discussed this topic by saying that: *"Just starting to do it, ha ha. (--) And then*

through that take the rest of the organization in it, involve it. (--) It's through action that you actually change the culture and you can spread the design culture inside the organization." (cf. Table 12, INT#8:4). Additionally, the activities categorized under *Honeymoon* phase in this study, such as Design Days, customer safaris, and individual design lectures to individual organizational units, could be seen to support the findings of Rauth et al. (2014).

The findings of Rauth et al. (2014) regarding *the creation of physical spaces and artefacts* and Elsbach and Stigliani's (2018) research on physical artefacts' role in the effectiveness of design tools seemed to also be echoed in the findings of this thesis. One of the case companies of my research had used an *external change-maker approach* in introducing design into the organization. This external unit was separated from the main organization and acted as an incubator of sort for the design activities, enabling the kind of start-up way of working which Rauth et al. (2014) also mention in their paper. One of the interviewees talked about working in this original change-maker unit as follows: *"I came here about six years ago into channel development. (--) There had just been founded this type of a development unit, which began to re-adjust the frequency on our company's radar into something new, so to say. (--) It was kind of separate from the activities of our headquarters."* (cf. Table 12, INT#8:7) and continued with: *"[In the separate development unit] We had a kind of good growth base for design, and the whole surrounding team was kind of in this mindset and feeling that we will renew this whole way of working, and bring in customer-centricity and so on."* (INT#8:8) Similarly, as found by Elsbach and Stigliani (2018), *internal events* regarding design and the role of it can also help to concretize the role and meaning of design in the eyes of the organization: *"We have the type of Design Days, which have become a brand inside the company. (--) Twice a year we take about 100-150 employees to learn about design and the methods of design. Information and a lot of action."* (cf. Table 10, INT#4:2, transl.)

Finally, *the creation of ambassador networks* Rauth et al. (2014) identified was also supported by this thesis. In this research, I distinguished certain attributes of people which supported the implementation of design thinking: being a change maker and design ambassador were one of those. In terms of design ambassadors, one of the

interviewees described their importance as follows: *“I think it is important that inside the company you have an owner [for design], you don’t need to have design unit or even a design manager, but you need to have someone, someone who has experienced the awakening, so to speak. So in other words someone who can talk about this way of thinking and for it inside the company. After that you can go and... if you have enough money then go order a design project from a sub-contractor, but if you only have an agency who is selling a project and a company who doesn’t understand at all what they are buying, it doesn’t lead anywhere.”* (cf. Table 12, INT#1:7) Also, the unified design organization which was considered to be one of the signs of a maturing phase of design transformation, could be seen to fall under this same category of Rauth et al. (2014), as it deals with bringing the design-minded forces together under one umbrella. Similarly, having a crucial mass of in-house designers emerged as an especially important factor for one interviewee: *“Having that critical mass of people working [is crucial], you can’t just have one consultant who goes around or tells people what to do, you need to have a group of people who actually show how it is done. (--) This group of people bring the credibility and legitimacy which also leads to solutions. So, it doesn’t help if you just have a couple of funny designers compared to a thousand developers, they [designers] will only get lost in it. And there won’t be benefits from it.”* (cf. Table 12, INT#6:4).

Overall it can be said that the findings of this study heavily support the research findings of Rauth et al. (2014). However, some of the supporting factors found in this study do not seem to fall under any of the categories defined by Rauth et al. (2014). One of these findings relates to the prevailing company culture in the companies. Based on the interviews, having the kind of company culture which allows experimenting, failing, and creative thinking are deeply helpful for the overall implementation of design thinking, which could be seen to echo Elscbach and Stigliani’s (2018) research and findings regarding design thinking and the organizational culture. Additionally, individual skills such as selling and communication skills were also found to be crucial for the implementation process as a whole; as one of the interviewees said it: *“Internal selling skills, yes. You need to sell the projects internally.”* (cf. Table 12, INT#3).

6. CONCLUSION

*“Good design is obvious.
Great design is transparent.”
–Joe Sparano (Based on Sparano Scale, 2010)*

6.1. Research summary

The world we live in is in a constant state of change and companies' ability to renew themselves and their business offerings has become more important than ever. Innovation capabilities are a highly sought-after skill for businesses, for which design thinking has been presented as a possible solution. It is claimed that design thinking can bring competitive advantage to organization.

This research began from the desire to find out more about the phenomenon of design thinking in the context of Finland, an area of research still relatively unmapped. To do this, a few large Finnish organization were chosen as research cases to find out how design thinking is a part of their actions and organization. More specifically, the research questions guiding this research were:

- 1. Why and how is design thinking implemented in large Finnish companies?*
- 2. What are the things that enable or challenge the implementation of design thinking in large Finnish companies?*

Based on these research questions and the review of existing literature, five key areas of research were defined for the study. These key areas guided the formulation of the research design, methodology, and the interview guides of this study, as well as provided the frames and limitations for this research.

The findings of this research consist of a model of the design thinking implementation process as experienced by the chosen case companies. This model consists of four phases of the design implementation process (Awakening, Dating, Honeymoon, Maturing), gateway stages in between these phases (Gateways of Understanding, Permission, Proof, and Acceptance), as well as an identified group of supporting and

challenging factors which influence the implementation process as a whole. Together, these findings provide an in-depth picture of what the process of design thinking implementation can be like, a list of concrete actions this implementation process can consist of, as well as insights on what kind of factors can support and hinder the implementation and design change process.

Most of these findings were supported by and aligned with the extant literature, but some of them appeared to be new insights which should be tested and validated in the form of future studies. Overall the findings of this study show further proof that the implementation processes and actions of design thinking, as well as the supporting and challenging factors of it, are fields of research which could benefit from more attention and further studies. The findings of this study also go to show that though originating originally from the field of design, design thinking has been successfully implemented in some large Finnish companies, demonstrating that it can bring value for Finnish businesses and the Finnish management context.

6.2. Managerial implications

This study and its findings offer many managerial implications and contributions to the management field. Due to the practice-oriented approach of this thesis, many of these implications may already be clear to the reader based on the findings chapter of the thesis. However, this chapter briefly summarizes and discusses the various ways this research may benefit the management field.

First, this study offers a snapshot view of how design thinking is understood in some of the large Finnish companies, as well as the perceived reasons why some of these companies have decided to adopt design thinking into their organizational practices. These perceptions on the definition of design thinking as well as the motivations to do it will hopefully provide the managers with a more practice-oriented and clearer image of design thinking, allowing for a more wide-scale understanding regarding it in the management context. Additionally, the findings of this study also help to communicate what these studied organizations consider as both the benefits of

design thinking as well as the concerns and challenges in the current business environment, hopefully providing interesting and timely insights to managers.

Second, the main finding of this thesis, the overview of design thinking implementation process model in an organization, provides managers the chance to see an example of how the implementation of design thinking could occur. By providing a list of more tangible implementation actions, activities and guidelines, managers can learn more about what making the design transformation in the organization could mean on a more concrete level. The developed process phases and gateways of this study also offer managers an alternative framework tool with which they can analyze and self-identify their current design stage and activities. Hopefully these tools would allow managers to gain more insights and information regarding design thinking, lowering their suspicions regarding it and opening themselves more to the possibilities of it.

Finally, as a part of the design thinking implementation process model, this study also provides managers with a list of factors which seem likely to either challenge or support the design thinking implementation. This provides the managers with some insights to determine whether the implementation of design thinking could succeed in their current organizational climate or whether some things should be changed to ensure a smoother implementation process. It also hopefully helps the managers to better prepare for the design transformation process as well as to learn how they could ensure as smooth implementation process as possible.

6.3. Limitations of study

As with any study, there exists limitations to it and the research made in it. This chapter aims to give an overview of reflections on the possible limiting factors of this research in order to improve the overall transparency and credibility of this thesis.

First, the limited extent of this study naturally provides with some limitations to it. As the amount of interviewed organizations is only three, no generalizations can be made to cover all large Finnish companies who have implemented design thinking,

which could be considered a possible limitation for the findings of this study. However, this was not designed to be a survey-based study or a quantitative research about e.g. which methods of design implementation have been the most successful or common in these organizations; instead it is intended to be exploratory by nature with the aim to study the phenomenon of design thinking and its implementation in the chosen organizations and context. The main purpose of the findings of this study is to offer insights and further avenues onwards in the field of design thinking and its implementation.

Another limitations to this study and its findings relates to the lack of longitudinal study data of this research. Due to the constraints on research resources, this thesis was not able to study the case organizations on a longitudinal basis, which would have allowed for deeper insights and possibly further validations on the suggested findings of this study. However, taking into account the goals of this study as a Master's thesis and the limited resources allocated for it, the cross-sectional approach of this study can be considered fitting, although other similar studies on this topic with a longitudinal research model would also likely provide valuable new insights in the future.

Additionally, in terms of the analysis of the data, the intent of this thesis has been to provide further insights on how people construct meaning regarding the various topics of design thinking and its implementation. While the aim of this thesis has been to provide potential new insights to the theory of design thinking as a whole, it should be kept in mind that I, as the author of this thesis, am not a professional researcher, and the analysis, findings, and suggestions of this thesis are based only on my skillsets, which do not compare to those of professionals. Therefore this research and its findings should be discussed and analytically reviewed for what it is: a master's thesis.

6.4. Suggestions for future research

In terms of future research regarding design thinking, new studies regarding the specific steps, actions, and stages of the design thinking implementation in

organizations of various sizes and industries would likely provide interesting insights and comparisons to the findings of this study. It would be particularly interesting to see whether the stages of the implementation process would differ from each other based on for example the industry and size of the organization, or the country of operations. Similarly, further research on different challenging and supporting factors of design thinking implementation and the possible differences to the ones presented in this study would likely yield intriguing insights. This could also be argued to be an important area of research should design thinking truly become a more mainstream and accepted way of doing business.

It could also be argued that more research on design thinking in the context of Finnish business environment would be an overall fruitful area of research. Studies investigating the design thinking perceptions on different Finnish business contexts, the reasons for why companies wish to implement design thinking, as well as case studies of design thinking implementation in different industries would likely help to provide a clearer and broader picture of the current stage of design thinking in the Finnish business environment as a whole.

Finally, another interesting point for research could be the wellbeing of the designers going through this type of design thinking transformation in the organization. One of the interviewees in this study raised the point that work fatigue has been a serious issue for the designers for several reasons, one of them being the stressful work environment which an organization going through change can cause. This type of working environment could be argued to be especially draining for employees who are passionate, hard-working and dedicated by nature, which this same interviewee considered most of the designers working for them to be. Interesting point for further research could be studying the wellbeing of designers in a design transformation and comparing these results to the more general effects of change management and transformation in the organization. Another further research could be to study how would the organization's resistance towards design thinking influence the wellbeing of the designers, and again whether this differs from the experiences of the change management literature as a whole.

More generally it could also be argued to be important to find out whether working in a design-driven way is inherently more motivating and rewarding than in a more traditional way; in other words, is design thinking as a phenomenon also beneficial for the employees' wellbeing at work? This type of research could be seen to be important in ensuring that moving towards a design-led organization is not harmful for the employees, or that if it is, finding out how these harms could be avoided and solved.

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APPENDICES

Appendix 1: Empirical Findings – Tables of Vivid Data Extracts

Table 8: Examples of the Awakening phase - Illustrative Excerpts

	<i>What is design thinking?</i>
Cognitive	<p><u><i>A way of thinking</i></u></p> <p>"Well, for us, and for me, design thinking is a way of thinking. Hehe, <i>thinking</i>." (INT#1, transl.) // "The word has its meaning. I mean, thinking is always thinking." (INT#2, transl.) // "[Design thinking] is not just something like 'okay, now we will take design thinking into use', but instead it's.... it's a way of thinking." (INT#3, transl.)</p>
	<p><u><i>Problem solving</i></u></p> <p>"Design thinking is exploration. Instead of just solving the problem by means that you already know someone else has done, you find a new way of doing things." (INT#4) // "Design thinking and utilization of design is, it's like... a basic approach to any kind of problem solving, to be honest. It's creative problem solving." (INT#5, transl.)</p>
Action	<p><u><i>A process</i></u></p> <p>"[Design thinking] is a kind of process, with five steps: Empathize, Research, Ideate, Test, Execute." (INT#6, transl.) // "[The first thing that comes to my mind when I think about design thinking is] Double diamond. Haha, classic." (INT#4:2)</p>
	<p><u><i>Human-centered approach to business development</i></u></p> <p>"[Design thinking is] bringing that human-centered thinking and the fast trials into a part of developing your business as a whole, and not just to develop a single product or some part of it." (INT#2:2, transl.)</p>
	<p><u><i>Not a set of methods</i></u></p> <p>"Well what it [design thinking] is <i>not</i> in my opinion, is that it is not a set of methods or a methodology or an operating model. (--) Often times it catches my ear in the negative sense when people talk about design thinking <i>methods</i>." (INT#1:2, transl.) // "I've pretty often heard people talking about design thinking as a method. In my opinion it's not a method." (INT#3:2, transl.)</p>
Complex	<p><u><i>A term with multiple definitions</i></u></p> <p>"The widest definition of design thinking that I've seen I believe included 20 dimensions." (INT#3:3, transl.) // "With design thinking I think the vast majority still doesn't know what to do with the term." (INT#7)</p>
	<p><u><i>A marketing term</i></u></p> <p>"I think design thinking is nicely put into words something that good designers have known for a longer time already. So it has been put into an understandable, and now even management may get interested about it." (INT#8, transl.) // "Design thinking is a good marketing term for the actions you are doing with it." (INT#8:2, transl.)</p>

	<i>What are the elements of design thinking?</i>
Cognitive	<p><u>Human-centeredness</u></p> <p>“One of the key words for design thinking is human-centeredness.” (INT#5:2, transl.) // “You think about things from the point of view of the customer. And one thing which has been quite strange for me personally, is that this is not a natural approach for everyone.” (INT#8:3, transl.) // “Being customer-centric is probably the keyword in design thinking.” (INT#3:4, transl.)</p>
	<p><u>Empathy</u></p> <p>“I think empathy is the starting point for the whole design thinking.” (INT#6:2, transl.) // “Understanding the customer and being empathetic is integral in design thinking.” (INT#3:7, transl.)</p>
	<p><u>Openness & Bravery</u></p> <p>“From the perspective of adopting design thinking, you need to be more open.” (INT#4:3) // “And then you need to have bravery. Bravery and the chance to fail and renew all the time.” (INT#3:5, transl.)</p>
	<p><u>Multidisciplinarity</u></p> <p>“One of the keywords of design thinking is multidisciplinarity, in other words this type of co-creational thinking. Bringing experts from different domains together.” (INT#5:3, transl.) // “Yes, it is bringing that certain type of way of thinking there where you don’t look at things from only one perspective, but instead you aim to get a holistic view from many different angles.” (INT#9, transl.) // “We use methods and models which are common for traditional design work, and apply them to the wider business development.” (INT#3:6, transl.)</p>
Action	<p><u>Flexibility & iteration</u></p> <p>“Design thinking means being able to change your approach. Being able to test and hear feedback, and trying something new.” (INT#4:3) // “It [design thinking] also means prototyping and iterating on your work. Not falling in love with your first solution.” (INT#4:4)</p>
	<p><u>Co-creation</u></p> <p>“The co-creative nature is one of the key things in design thinking.” (INT#5:4, transl.) // “Working together inside the organization is a key element.” (INT#3:7, transl.)</p>
Complex	<p><u>Part of design paradigm</u></p> <p>“The way I see it is that there is design doing, then there is design thinking, and then there is design being. (--) Design thinking is the way we approach things, and design doing is then the methodology in which we execute design thinking. These are usually very designer-driven. And then surrounding these is design being, which is then, like, organization-driven.” (INT#1:3, transl.)</p>
	<p><u>Enabler for the trinity of business, technology, and customers</u></p> <p>“And then we have these three cornerstones: business, technology, and the customer. So we aim to spot new opportunities which produce value for customers and business, without of course forgetting to take profitability into the view. I’d say design thinking is about finding new opportunities with a human-centric approach, involving the customers, in a way that these three cornerstones come true.” (INT#5:5, transl.)</p>

	<p><u>Many ways to do things right</u></p> <p>"[Design thinking] can be executed in many different ways, and there are bunch of different methods that help to execute it." (INT#3:8, transl.) // "I think the freedom to use the processes of design thinking in different ways in different situations is one of the core things about design thinking." (INT#8:4, transl.)</p>
	<p><u>A buzz word</u></p> <p>"[Design thinking] is a buzz word here, and in the negative sense of the word." (INT#7:2) // "There's a lot of hype around this design thinking." (INT#10) // "It's a kind of a buzz word and it is used a lot." (INT#3:9, transl.)</p>

Table 9: Examples of the Dating phase - Illustrative Excerpts

Organization <i>Internal motivators</i>	<p><u>Complementing business</u></p> <p>"Understanding customers and customer experience have always been at the core of our business model, but now we have understood that we also want to differentiate with them." (INT#1, transl.)</p>
	<p><u>Complementing processes</u></p> <p>"Let's say you have a frame agreement with a large company or an organization. It could be like a 5 or a 10 year frame agreement, and part of that frame agreement could be innovation. In these situations it's really easy to do design thinking, because it's kind of on-defined. The customer can say for example that 'we'll use 2,000 hours per year innovating a new solution'." (INT#2)</p>
	<p><u>Digitalization as a gateway</u></p> <p>"We believe that digitalization will be the key factor in the future which allows us to remain meaningful." (INT#3, transl.) // "At the same time we realized that we want to put effort into digitalization, and, small bullshit alert here, pushing through our digital transformation process. And this is why we this unit which we belong to was founded and our CDO was hired. And our CDO wanted to get customer experience into their management team, which is why I ended up here." (INT#3:2, transl.) // "Our CDO knows the value of the data, but how to utilize it is something that we should suddenly come up with, and where design thinking steps in. Data is one of the enablers to our potential service models and processes or whatever will be the end results." (INT#4, transl.) // "People think it's a kind of a hype thing, and that... somehow you can sell things when you use that word, 'everything that is digital is new and fancy'." (INT#1:2, transl.)</p>
	<p><u>Branding as a gateway</u></p> <p>"It was decided that rather than have separate modernization and renewal initiatives, we will combine it into one, so that we'll try and establish a brand around our products. They didn't really have a common look and feel and a common, kind of, branding. (--) We decided to coordinate these renewals, which was not really around design, it was more about branding and market presence, and we made a style guide, et cetera. But we very quickly learned that you can have a product that looks okay but it's just a terrible experience. So we started investing more in service designers, graphic designers, and interaction designers. And we saw that where we had actually put in effort into products in making the experience really pleasurable, we got the best feedback from users. (--) (INT#2:2)</p>

	<p><u><i>Agile development as a gateway</i></u></p> <p>“We were pushing the agile methods into our company at the same time as the first service designers were hired. (--) So we started to develop in an agile manner, and design thinking and this type of agile development as a way of thinking, they go hand in hand pretty nicely.” (INT#5, transl.) // “In a certain way, it [design thinking] is very much connected to agile methods and processes.” (INT#1:3, transl.)</p>
	<p><u><i>Large companies can afford it</i></u></p> <p>“Large companies are trying out design thinking because they have resources, because it is possible. They have the option to put effort into this, to try and see that it works.” (INT#1:4, transl.)</p>
	<p><u><i>To create a unified customer experience</i></u></p> <p>“Why have we started to invest in design? We started from managing the customer experience in the organization, and from my point of view it can mean several things. Some see it as research activity, some as optimizing the quality of customer service and its costs, some see it as continuous mapping of customer satisfaction. I realized that we have actually done all of these, but they have been kind of separate from one another. (--) We have used subcontractors to create mobile apps and all, but they all go to slightly different directions, and the red string, connecting factor, is missing from them. (--) The omnichannel customer experience was not developed, and that is why we have started to build our team.” (INT#3:3, transl.)</p>
<i>Competitive advantage</i>	<p><u><i>Business renewal</i></u></p> <p>“In my opinion, design thinking is a vital condition for companies who are going through a big change or want to grow as a whole.” (INT#6, transl.) // “To me it would be obvious to say design thinking would be the way for companies to renew their business.” (INT#7)</p>
	<p><u><i>Improve on processes</i></u></p> <p>“When we are part of the product development phase, we have already seen that with one designer we can get our products faster to the markets, our development costs decrease, we do smarter things as a whole, and we produce concepts which actually have competitive advantage.” (INT#6:2, transl.) // “When we talk about design thinking we stress that the more you branch out, so the more you open up and the wider you paint the picture of what is possible, what could be done, what could be explored, the better it is, because you are able to narrow down the solution, or the idea, which will actually bring value, instead of choosing the first, like, bottom-line acceptable solution.” (INT#8) // “These things could be developed in some other ways than how we are now doing it with the traditional waterfall model, where we invest a lot of money and time into a completely in-house developed product, launch it and see how it works, if it works.” (INT#1:5, transl.)</p>
	<p><u><i>Improve on business results</i></u></p> <p>“If you really boil it down, it doesn’t really matter if we involve our customers or not, only the results matter. (--) We know that statistically we are the most likely to succeed when we involve our customers in the development process.” (INT#9, transl.) // “Of course, you want to have a successful service or product, right? And what does that mean? It means that you are addressing a real issue, a real problem, and that you only can know when you get real user insight, right?” (INT#7:2)</p>

	<p><u>Improve on innovation capabilities</u></p> <p>“For the uppermost management, design strategy brings new business models, new, unique ways of operation, new innovation, and the innovation capabilities of the organization.” (INT#6:3, transl.) // “[One of the benefits of design thinking] is probably the fact that you can do things in new ways.” (INT#10, transl.)</p>
	<p><u>Improve on customer experience</u></p> <p>“We want to invest in customer experience, reach the best customer experience of the industry, and use that as the core differentiating factor, instead of e.g. pricing.” (INT#3:4, transl.) // “If you are not going to compete on price and trying... ah, how the smallest margins, then realistically the only long-term survival technique you have is to compete on an emotional attachment. So that our customers will refuse to move to anybody else because they love the way we enforce them.” (INT#2:3)</p>
<i>Organic reasons</i>	<p><u>Common sense</u></p> <p>“[Design thinking process of five stages] it's just... I would say, a common sense, a logical sequence of things to do in order to ensure that the services or the products that you are creating are fulfilling a user need, having a purpose, are being tested with real users and hence become a successful outcome.” (INT#7:3) // “I think there are many reasons [for why companies should do design thinking]. I've never was asked myself that question, because it's so... it's so natural to me, like, of course, it's like an 'of course, don't you see, anything else is just madness'.” (INT#7:4)</p>
	<p><u>Natural, start-up way of operating</u></p> <p>“When you look at start-ups, they don't really separate these things because everything starts from doing something for a customer need, and because the whole existence of your company is based on being customer-centric.” (INT#6:4, transl.) // “In the start-up environment it's so in-built, because you don't have any other choice but to provide services that the customer wants to use, so the customer experience is always at the core of things.” (INT#10:2, transl.) // “In the small-scale companies, or in start-up circles in general, this is so natural because you have to. Because you can't afford to invest into a long development channel.” (INT#3:5, transl.)</p>
	<p><u>Unconscious transformation</u></p> <p>“There was no conscious decision that we made, like 'now, let us put design thinking into these projects and let's wait what comes out of it', but it was kind of... organic.” (INT#6:5, transl.)</p>
<i>External influences</i>	<p><u>Survivability on the market</u></p> <p>“Our industry is facing such heavy turbulence that in order for us to stay alive in the future as well, we need to understand what our customers want.” (INT#6:6, transl.) // “You need to be competitive in the future, so you need to invest in design thinking.” (INT#2:4) // “It's the realisation that if you don't do this now, you will lose in the end because we are already behind compared to some competitors and we are doing nothing to even catch-up and draw even.” (INT#7:5) // “Yeah, for all it's about.... survivability in the market.” (INT#2:5)</p>
	<p><u>Shifting nature of the markets</u></p> <p>“Since the world is changing so rapidly we need to be better at trying out new things so we can understand what kind of things work.” (INT#3:6, transl.) // “The ugly truth is that global competition already exists and is accelerating all the time, and while previously we've been protected by various regulations and national factors, everything is scalable now and these factors do not matter anymore (--) when the current structures that have been built crumble at some point, it's a whole new game that starts.” (INT#1:6, transl.)</p>

	<p><u>Technological advantages are not enough anymore</u></p> <p>“There's been an amazing equalization on the market, leveling of the market. Such as... you can't compete on technology anymore, anybody can-, can provide a cloud service. Everybody can make a mobile app.” (INT#2:6) // “Being a leader in technology is no longer enough to stay relevant to our customers.” (INT#8:2)</p>
	<p><u>Pressure of competitors</u></p> <p>“Global competitors are constantly doing things on all fronts, and although in Finland things have been quiet for now, you need to have your own game equipment ready when the match starts, so to say.” (INT#4:2, transl.)</p>
	<p><u>Encouraging examples and benchmarks</u></p> <p>“We're not the first in Finland to put this into use. (--) Money also talks quite well, and for example if you look at these studies made in the DMI [Design Management Institute] about the design investments' relationship to companies' profitability and stock value, you can argue that this is no nonsense.” (INT#3:7) // I think, over the years the agencies and, like, the more creative kind of business community has proven that there is a benefit of knowing about the users and learning about their problems.” (INT#8:3)</p>

Table 10: Examples of the Honeymoon Phase - Illustrative Excerpts

<p>Approach</p> <p><i>Raising awareness internally</i></p>	<p><u>Start from management and horizontal functions</u></p> <p>“We've started to think what the marching order would be like, which units and functions we want to convert first. (--) But like, all management teams of the business units, and then group-level functions such as HR, Communications, Brand people, and IT.” (INT#1, transl.)</p>
	<p><u>Various design methods</u></p> <p>“Design sprint is a process with stages, we usually do it from 3 to 5 days, and we basically do the whole design thinking process in those days. For example that ‘On the first day we ideate, second we prototype, and third we test with customers’, it goes in a pretty practical way like that.” (INT#2, transl.)</p> <p>“We have some successful cases with hackathons that we have done externally, and our internal colleagues have also been asking to run the same kind of approach, hackathons to solve their challenges and to ideate.” (INT#3)</p> <p>“We have organized design thinking customer safaris for the management teams where they have a design challenge, they innovate a little bit, and then go outside to talk with customers and develop a concept. (--) With these kind of activities we have tried to take our culture forwards, and help people to find new insights, learn something new.” (INT#4, transl.)</p> <p>“We have so called business consultants. (--) And we've been preaching for long time: take the service designer along to customer meetings. We need ourselves to talk to the people, to the business stakeholders, ourselves, and speak with them in our terms, in our terminology of what propositions they might have.” (INT#5)</p>
	<p><u>Various education methods</u></p> <p>“I sometimes have presentation in our new employees takeoff days (--) where</p>

	<p>representatives of business units and functions give a presentation about what they do. (--) Basically I give an introduction to design thinking.” (INT#5:2)</p> <p>“The management at our organization came up with a new internal learning platform, a digital learning platform. When they started this new one, they picked the hottest topics back then, one of which was design thinking” (INT#5:3) // “Our HR told us that there are some e-learning possibilities, especially to reach all our grassroot level employees.” (INT#1:2, transl.) // “There is this learning program which has started from theme of design thinking. We want everyone in the company to understand the basics, to understand how relevant it is to utilize the design thinking approach, or methodology into any type of challenge, and we want them to approach it from the perspective that they can always ask someone else with more knowledge.” (INT#3:2)</p> <p>“I spend actually a lot of my time doing introductory courses and kind of, “Basic stuff you should know about” -kind of courses for everybody in the organizations.” (INT#6)</p> <p>“We go to different parts of the organization to talk about the benefits of design.” (INT#7, transl.) // “We have just started this type of a hallelujah round for different management units and teams. We’ll organize some basic introductions about design and then for the developing functions a bit longer trainings. (--) Raising some thoughts about that ‘hey, this is what it means in practice for you’.” (INT#8, transl.) // “We have been giving these types of brief introduction and learning, kind of hands-on learning workshops to top leadership across different countries.” (INT#3:3)</p> <p><u>Internal events</u></p> <p>“We have the type of Design Days, which have become a brand inside the company. (--) Twice a year we take about 100-150 employees to learn about design and the methods of design. Information and a lot of action.” (INT#4:2, transl.) // “We have been planning a couple times per year these type of bigger Design Afternoon sessions, where we would invite the whole organization. Just to kind of tell about what we do.” (INT#8:2, transl.)</p> <p>“We also offer these types of executive education courses for different people [to learn about design].” (INT#3:4)</p> <p><u>Various communication methods</u></p> <p>“Raising the awareness of the whole organization is a bloody big PR effort, because we obviously want to show the benefits with actual, practical work.” (INT#1:3, transl.) // “And then simply raising the internal awareness of the organization together with communications department.” (INT#8:3, transl.) // “It’s about talking to them. Talking to them and explaining to them over and over of why they should do it that way, I don’t see really any other way [to change the mindset in the organization].” (INT#5:4)</p> <p>“We had some people attending a service design conference and a few people asked them ‘What are you doing here?’, as in why is our company there. And these situations are just wonderful, since they’ll likely remember you being there and will possibly share it with their friends.” (INT#1:4, transl.)</p> <p>“I’m, as a person, quite active in social media. (--) I also try to talk as much as possible about customer-centricity also in my social media, because the message reaches a lot of people also like that.” (INT#1:5, transl.) // “There are a handful of people around the organization who are just trying to push design everywhere. (--) We used to meet quite regularly and we have some, kind of initiatives together to try and, ‘okay, how are we going to organize ourselves so that we can, we can coordinate and push design and make it on the agenda’.” (INT#6:2) // “We just need to be loud about it in the organization, that ‘hey, this is what is holding us back from working in the best way possible!’” (INT#1:6, transl.)</p> <p>“Term design thinking is not used perhaps as much [as service design].” (INT#7:2, transl.)</p>
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	<p>// "We also use design thinking, but it's more in the situations when we are discussing it and can open it up properly. But it's quite useless to use that kind of a term to someone who has never heard of it without explaining to them what it is about." (INT#9, transl.) // "We use the term design thinking quite a little because no-one understands it. (--) Service design is a term that people know because they have heard about it, and we like to talk about that." (INT#8:3, transl.)</p>
<p>Establishing design guidelines</p>	<p><u>Determining the direction and purpose for design</u></p> <p>"That as a company we have an opinion about what should happen, and that we can then guide it towards a unified service experience, where we have emphasized the right things." (INT#10, transl.) // "We started to build our team so that we have enough competences to show direction within our organization, that this is the way design should go. (--) That we can have one in-house designer in all of the most important development projects." (INT#8:4, transl.)</p> <p>"We are not here to question others' work. (--) More like, our job is to help developers develop things as well as they can, we don't tactically own any of the concepts. (--) It's quite altruistic agenda we have, really." (INT#1:7, transl.) // "Our role is to give support and help, but also gently development units to advance, help them develop in a different way." (INT#8:5, transl.) //</p>
	<p><u>Design language</u></p> <p>"Just purely make these type of, ah, as in 'what is the user experience of our company' type of guidelines. Well, a nice, hype term for it is <i>design language</i>. (--) What are the cornerstones of our customer experience." (INT#10:2, transl.)</p>
	<p><u>Signature experience points</u></p> <p>"And then we have identified five so-called <i>signature experience points</i>, and when we focus on them we can create differentiating factors for us. (--) They are the sort of star moments of the customer journey path." (INT#10:3, transl.)</p>
	<p><u>Roles of in-house designers and sub-contractors</u></p> <p>"How we start to build a more cohesive experience is that I try to gather all the different designers that we have hired through sub-contractors, and get them in a same place to share information about what they have done. (--) So we can continue the thinking that someone has learned in a certain projects, and extend it to another project. (--) Pass on the silent information if possible." (INT#10:4, transl.)</p> <p>"The processes and models that our sub-contractors have used have also partly taught some things to our clients and customers." (INT#10:5, transl.)</p> <p>"Now that we have our own resources, it would be good to get something interesting done with them, so we don't use sub-contractors in everything. (--) And if we don't use sub-contractors as much now, then we need to make sure the results are at least as good or better." (INT#1:8, transl.)</p> <p>"Figuring out what are the roles of our in-house designer and a sub-contractor, in these existing projects." (INT#10:6, transl.)</p>
	<p><u>Design Ladder as a reference</u></p> <p>"I'd say we are somewhere between levels 1 and 2 of the Design Ladder." (INT#8:6, transl.) // "We are maybe before is maybe before 2 in a scale of 1 to 5, on design ladder probably 1 to 2." (INT#3:5) // "We were able to show that we have reached the third stage (of Design Ladder), so we are now planning on jumping to the fourth one." (INT#4:3, transl.)</p>

	<i>Initial ROIs</i>	<p><u>Service design percentage</u></p> <p>"We have been measuring our service design percentage." (INT#7:3, transl.) // "Measuring how many development projects we have our designer or customer-centric methods in from the very first ideation meeting all the way to the launch and customer handover." (INT#4:4, transl.) // "How many of our projects have designers involved in them." (INT#8:7, transl.)</p>
		<p><u>Engineer-to-designer</u></p> <p>"[We have looked at the] engineer-to-designer ratio at our company." (INT#5:5) // "What's the technical versus design ratio is something we look at. (--) We look at them maybe twice a year, (--) these figures don't really move very much to be able to report." (INT#6:3)</p>
		<p><u>Customer loyalty and retention</u></p> <p>"Looking at the growth of customer loyalty." (INT#8:8, transl.) // "Or the growth of customer retention." (INT#1:9, transl.) // "Measuring the customer retention." (INT#6:4)</p>
		<p><u>Customer satisfaction, Net Promoter Score</u></p> <p>"Another measure is the customer satisfaction in the projects where we have used design methodologies. When the project is finished we ask whether the project team found new insights, did they learn something new, would they recommend this approach." (INT#4:5, transl.) // "Ultimately it's about Net Promoter Score." (INT#6:5) // "Measuring the growth of customer satisfaction." (INT#8:9, transl.) // // "NPS. [Haha] Net promoter score. (--) I personally don't fully trust it, since it depends so much about when you ask the questions. (--) It should be really targeted and specific to the action you have just done." (INT#10:7, transl.)</p>
<i>Organization</i>	<i>Design as function</i>	<p><u>Design not known</u></p> <p>"I'd guess that we are still pretty unknown part of the organization as a whole." (INT#1:10, transl.)</p>
		<p><u>Design as a function</u></p> <p>"I'm responsible for design and innovation in one of the big industries and business areas in our company. (--) And then in addition to those people who report directly to me, there's also a wider design community in our industry, which then we also kind of curate so the other designers, other people working with design who are not reporting to me, are then connected to the same network we coordinate." (INT#6:6) // "We are a horizontal function which role is to support our business functions." (INT#8:10, transl.)</p>
	<i>Design in development</i>	<p><u>Design used in some development projects</u></p> <p>"We have managed to influence decisions in a few projects which have been sitting on the fence with our customer-centric point-of-view. (--) We have used methods of design to open up things: 'this is how our customers do things, and these are the current problems they have, these are the worst pain-points, and if we did this, then we could do it like this...'" (INT#8:11, transl.)</p>
		<p><u>Design makes development more agile</u></p> <p>"It [design thinking approach] speeds things up so much, in a way. (--) We can make the mistakes considerably more early, so that we don't necessarily put thousands or millions of euros into them. (--) We can do things in a very small and fast way, which we can then test, and create business value. (--) If we can kill some projects before they take off, it's – it's kind of more important, than doing a wrong project in a right way." (INT#2:2, transl.)</p>

<i>Reception in organization</i>	<p><u><i>Design helps make better products / services</i></u></p> <p>"[When we use design thinking] we go over silos, we do things in a different way. We work in a much more agile and flexible way when we put our ideas out to the customers and get feedback." (INT#1:11, transl.)</p>
	<p><u><i>Design has potential for more</i></u></p> <p>"I would love to see that changing [moving from look & feel to more service-level approach], because we sometimes see the, you know, the things that we have control over, like, how our products look and feel and the kind of experience that you have around them, is not matched then by customer support, or invoicing or whatever." (INT#6:7)</p>
	<p><u><i>Design used in corporate jargon</i></u></p> <p>"We have a yearly strategy update going on, and it's great that on the units' strategy slides they have 'using service design to create new level of customer experience' and this type of other corporate bullshit jargon in them in big, bold letters." (INT#8:12, transl.) // "Last summer this leadership in my unit started a new strategy, which has couple of, as they call it, 'must win battles'. The strategy last until 2020, and I can only remember one by heart, and that is 'design thinking in everything we do'. Which I was very pleased about." (INT#5:6)</p>
	<p><u><i>People are curious about design</i></u></p> <p>"Those who know about our existance are interested in what w edo." (INT#1:12, transl.) // "People have had a positive attitude towards us in general. They have been curious. Interested. Probably quite a lot of them are feeling that 'Okay, sounds interesting, tell me again when you have something concrete to show', ha ha. A lot of people have been saying that 'Yes of course, that is what we should be doing'." (INT#8:13, transl.)</p>
	<p><u><i>Support from some areas of organization</i></u></p> <p>"We have started to gain support from left and right, which is a very good thing. I personally think it comes from the business functions, these common ones like HR and other support functions." (INT#8:14, transl.)</p>
	<p><u><i>No active opposition</i></u></p> <p>"Few people are actively challenging us, a lot of people don't understand us in beforehand." (INT#1:13, transl.) // "Personally I have not experienced that someone would say that I'm wrong or this doesn't have value. (-) In principle there has not been any challenging to these processes or to the models or in general about doing things in a design-driven way." (INT#10:8, transl.)</p>

Table 11: Examples of the Maturing Phase - Illustrative Excerpts

<i>Approach</i>	<i>Systematic ROI for design</i>	<p><u><i>Speed of feature development</i></u></p> <p>"In terms of the efficiency of our development, we are looking at the runway time of a feature. So if we are doing things from a customer-centric point of view, using the methods of designing, our design and development backlog has better and smarter material, which means they can code faster and more high-quality material." (INT#1, transl.) // "We've been measuring the feature runway time (-) it's been one of the measurements for our design activities." (INT#2, transl.)</p>
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	<p><u>Design value index</u></p> <p>"We are using a design value index, which is actually closer to measuring an innovation than the benefits of design, but that's the third measurement we are looking at on an organization-level. (-) We are measuring our whole innovation, innovation culture and design being on a large scale with it." (INT#1:2, transl.)</p> <hr/> <p><u>Increase in sales</u></p> <p>"Measuring the increase of sales." (INT#3, transl.) // "[You can see benefits of desing] also if the sales are increasing." (INT#4, transl.) // "When you look at (-) Design Research Institute's case where they compared how the companies who have invested in design over the past five years have grown compared to the market standards, it tells you that you can make 200% bigger revenue growth with design." (INT#5, transl.) // "And at the end of the day, it's [measuring the ROI of design] about higher margins, larger profits." (INT#6)</p> <hr/> <p><u>Wellbeing of employees</u></p> <p>"The wellbeing of the employees, or the employee satisfaction, is one of those things which is not measured enough, and I personally believe that using design methods also influences how involved and committed the developers themselves are to the thing they are developing." (INT#3:2, transl.)</p> <hr/> <p><u>Employees' interest in design</u></p> <p>"We have just launched a new [internal] competence tool, and we are going through discussions about what areas people would like to develop and get better at, and design is now there as one of the competence areas. (-) I'd like it to be available for everyone, so we could see a little about in which parts of the organization people feel that they would like to learn more about it, even though they would not become designers. (-) I think these type of metrics could also be used to see how it develops, if more people choose it, or if the results of the people who have chosen them improve." (INT#4:2, transl.)</p> <hr/> <p><u>Long-term benefits and change</u></p> <p>"Comparing the current state versus the state we have reached with design. (-) Although it is difficult to compare and say 'well, if we had not used design methods in here, but instead we would have decided this in the management table, would we have reached the same results." (INT#3:3, transl.) // "The return on investment of design has always been difficult. You can see it in the long-run. (-) You can only see the monetary value of the decisions you make today in a couple of years." (INT#5:2, transl.) // "Implementing design thinking into your product business is a long-term goal. It's a long-term investment." (INT#6:2)</p>
<p><i>Design at three levels</i></p>	<p><u>Strategic design</u></p> <p>"Strategic design at our company is done by business designers and strategic service designers, which means we are working directly with the management, and are constantly discussing in which direction our business should go towards." (INT#1:3, transl.) // "Nowadays business design answers the questions 'what', so we look at the customer needs, the market, the competitors, the goals of the business naturally, and to produce decisions to what kind of customer value, business value we want to be producing in the future." (INT#2:2, transl.) // "It's more like renewing the business, instead of renewing services." (INT#7, transl.)</p>

	<p><u>Tactical design</u></p> <p>"Design on tactical level is about designing individual services to execute the processes of a business model. And for that, we have service designers." (INT#1:4, transl.) // "The 'how' we do things is then the responsibility of our service designers." (INT#7:2, transl.)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Organization</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);"><i>Unified design organization</i></p>	<p><u>Operational design</u></p> <p>"And then on the operative level of design we design individual touchpoints, and decide what kind of forms an individual service gets in different channels. There we have a few designers." (INT#1:5, transl.)</p>
	<p><u>From sub-contractors to internal designers</u></p> <p>"We realized that we need more people, so we started to hire our first designers. (--) At first it happened through our network of sub-contractors, but then later on we started to have more internal recruitments and we got more in-house designers." (INT#2:3, transl.)</p>
	<p><u>Unified design organization with clear direction</u></p> <p>"I think it has to be a horizontal function in the matrix organization. (--) So that even if you have design specialist teams they are part of a larger holistic group who have the same vision, the same processes, the same goals." (INT#8) // "That there is a... better and clearer communication on what you can actually do in your position. So it's like service design in the sense. And understanding... okay, we have a consultant - what the consultant usually do? How the consultant could actually utilize design thinking in the usual daily job? And the same for developer, the same for a designer, or a manager, or whatever." (INT#9) // "There are designers who come up and say 'Oh that's really cool what you are doing, like, we need to sync'." (INT#10)</p>
	<p><u>Flexible working</u></p> <p>"We had designers in a little different places, different channels, in different business areas where they did development, until then during an organizational renewal we put all the designers under one umbrella, under one unit. (--) We were thinking about how to build the teams and how to serve the different stakeholders within this company." (INT#11, transl.) // "We have built it [design organization] so flexibly that we talk about platoons where people are (--) HR-technically you don't need to change the organization if we change projects or platoons. So platoon is a type of... team, in a way where people work in, and the platoon has a captain which is not the same as superior, and they lead the platoon then. It's actually really good." (INT#7:3, transl.)</p>
	<p><u>Large scale design influence</u></p> <p>"Because with that [by unifying the design organization] we gain visibility to all the design activity and can utilize it in a full scale. (--) There are several teams who are working on different areas of development, in different touchpoints. When we operate so widely, there are very, very few people, if any, who competence-wisely would be able to be specialist in the whole scale of things." (INT#11:2, transl.)</p>
<p><u>Systematic way of working</u></p> <p>"Well, it's so much more systematic [working in a unified design organization] and now that you actually have certain area of responsibility, I can say that my responsibility is thing X. We didn't have that before, we have been kind of pitched into different projects, but now I can actually be in charge of a certain area. (--) You're not surprised by ad hoc projects anymore. (--) Now people know who to ask help from regarding projects, because you know the field. (--) And then also you don't always with each project have a learning curve, because you work on one specific area." (INT#7:4, transl.)</p>	

	<p><u>Network of designers</u></p> <p>"I see the value of having a design team that thinks the same way, so you can already throw out some ideas much better, and you can help your mates. That's a big, big change what we have now. Before we didn't have this type of a community." (INT#7:5, transl.) // "I think this [one unified design organization] has helped everyone to see better, like, the whole channel and understand development in a better way." (INT#11:3, transl.)</p>

		management teams, and steering groups, and through those influence that the decision-making would take the customer point of view into consideration.” (INT#2:7, transl.) // ”We have an actual, legitimate place there, and people listen to us. (--) We influence some of the portfolio decision, or we have like, influence on what we develop here, what are the priorities, and so on.” (INT#1:6, transl.)
		<u>Development of current and new business</u> ”We for example have business designers, who work together with business functions and help them to think about what should we actually bring in to the development funnel, and what is the vision, the long-term goal for developing a certain area. (--) We have a certain strategy, so what does it mean for this business area, into what direction are we taking it in the future. (--) We have certain designers, business designers, and strategic service designers together there with business having these discussions.” (INT#11:6, transl.)
		<u>Maturity of collaboration varies</u> ”The maturity [of design collaboration] varies quite a lot between business functions, in some places we have reached a stage where it’s more in-depth, and in other places it’s only just starting. So you can’t say that we’ve reached the goal yet, instead there’s a lot to do still.” (INT#2:8, transl.)
	<i>Appreciation of organization</i>	<u>Benefits of design are seen</u> ”Quite concretely you can see that there are benefits to it. For example service design, or having a service designer involved in a project is something we have been able to prove (--) if I remember correctly, the project’s runway time is twice as fast as, so in that way... I think we have been able to show our value in our working.” (INT#7:7, transl.) // ”We don’t need to argue that much anymore why we need designers in a project.” (INT#1:7, transl.) // ”These past two years we have gained so much visibility, we haven’t had to argue much about why design is involved in something that we do.” (INT#11:7, transl.) // ”I don’t think there is a project where they wouldn’t talk about customer experience.” (INT#7:8, transl.) <u>Design is not seen as a challenger</u> ”I don’t think we are seen like that [challengers towards the rest of the organization], we are maybe friends now, friends to other people, instead of these nuisances who come to bother them.” (cf. INT#7:9, transl.)

Table 12: Supporting factors of design thinking implementation - Illustrative Excerpts

<i>People</i>	<i>Personal attributes and skills</i>	<u>Bravery</u> ”It takes courage to let go [of power] and it takes courage to give responsibility downwards in the organization, spread the responsibility, and it takes courage to fail. (--) I personally believe, without any kind of theoretic background or proof, that that is one of the prerequisites for making this type of design thinking implementation possible. The fact that you dare to admit that ‘I don’t know anything about this, but let’s figure it out, you guys know how to figure it out and I trust you when you suggest we should do it like this’. (INT#1, transl.) // ”I think it’s a safety, ah, a safety mechanism for teams. Because teams, even teams who are doing agile product development, and want to have some flexibility and ability to pick this and learn things through software development, they still don’t want to be in the black box called design. Which may draw out their estimates. So they really like the place design either at the very end, so it’s like, you know, ‘we have 90% of the job done and now we just need to fix how things look’. That’s a very, from a team’s point of view,
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	<p>that's a very safe way to do it. (--) if I just put on a product owner's hat, it's much more risky if I say, 'Okay, I'm allowing designers to come in at the start, and they, together with the developers and our users are going to uncover what the need is. I have no idea what that need is and I can't estimate it'. That seems very, very risky at the start." (INT#2)</p> <p><u>Selling skills</u></p> <p>"Internal selling skills, yes. You need to sell the projects internally." (INT#3, transl.) // "We had a meeting with some of the management, where we basically pitched ourselves, so to say. Like 'hey, this is how we can help you' style." (INT#4, transl.) // "I believe I was able to sell the idea quite well to the upper management that, that in order for us to invest in and improve on our customer experience, we have to invest in our design expertise, and have the courage to invest in it. And then we did." (INT#1:2, transl.) // "And it took me quite a long time, possibly over a year, one and a half to finally make the leadership understand that design is more than that [making things look pretty]." (INT#5)</p> <p>"I personally like to sell things through storytelling. And in a way... when you can explain the logic that... because we are not really our customers. And the questionnaire surveys can't really capture what the people want in their hearts. (--) And that we can show that by doing it like this we can be more in touch with people's emotions." (INT#1:3, transl.)</p> <p><u>Communication skills</u></p> <p>"When we say that we are customer-centric and that we need to grasp the customer need instead of our own thoughts, then it's the same here. Our customer is the business management, whose need is to understand what to do, and we should be able to articulate the things in such way that they understand it." (INT#6, transl) // "We are very good at telling that [what our design organization does] because we are designers. So, we have very good messages in the way, in the way that we are capable conveyers of messages, because in many ways, design is a type of communication." (INT#7, transl.)</p> <p><u>Patience</u></p> <p>"With patience [you make this change happen]. With patience and trust. (--) It takes a certain type of patience from a person, as well as good muscles for sitting and legwork, to make things change." (INT#1:4, transl.)</p> <p><u>Knowledge about how to build a design organization</u></p> <p>"Maybe one of the special things is that of course you need to have understanding of development, the development methods, and then... the structures of an organization. Without them it's probably a little difficult to build a design organization, ha ha. (--) Because after all, it is part of development, we are part of the development entity, the development process." (INT#7:2, transl.)</p>
<p><i>The right kind of people</i></p>	<p><u>Understand the value of design</u></p> <p>"We have found some people in the organization who we have been able to talk with, like 'hey, in these cases we could get benefits from using design methods and design work'. (--) We have had a few good sponsors in our management. (--) When you have a support somewhere in the organization for what you are doing, it helps a lot." (INT#8, transl.) // "In a couple of other cases where we've had wise people sitting on top of the budget, who have been like 'Well, I believe this is a good thing, and I trust that something will come out of it'. (--) I think that a smart decision maker can also trust on other things besides numbers." (INT#1:5, transl.) // "A big change [for better] came with the changing management, like, three years ago. (--) It was... really expected that we would be competing on experience, so I didn't have to argue very much in management for the role that I have and of course I don't always get investments that I want, but it wasn't such a fight to get investments. And to do this [design work], just, it was more like... expected." (INT#2:2)</p>

	<p><u>Change makers</u></p> <p>"[It is good to have] this type of excitement and courage to go and do things and have excitement to change things, change the culture of working." (INT#8:2, transl.) // "It requires that you have these brave decision makers who have courage to do things in a different way." (INT#1:6, transl.) // "Finding that right person can be difficult." (INT#3:2, transl.)</p>
	<p><u>Design ambassadors</u></p> <p>"I think it is important that inside the company you have an owner [for design], you don't need to have design unit or even a design manager, but you need to have someone, someone who has experienced the awakening, so to speak. So in other words someone who can talk about this way of thinking and for it inside the company. After that you can go and... if you have enough money then go order a design project from a sub-contractor, but if you only have an agency who is selling a project and a company who doesn't understand at all what they are buying, it doesn't lead anywhere." (INT#1:7, transl.) // "It does require a sort of like, an ambassador inside the company who will have faith in what, what the designers and co-creative methods and so on can find, and execute, and then additionally go get them the resources, so that they can possibly start prototyping and even take it to practice." (INT#3:3, transl.)</p>
Management support	<p><u>Willingness to try</u></p> <p>"We're now at the stage where we've been talking with the uppermost management that 'hey, we need this', and we have received a thumbs up from them that 'okay, sounds good, start to hire people'. We've managed to get to the next level to talk about it that 'hey, this is what we should utilize', and we've received a hesitant 'sounds good, I don't understand anything about it, but let's give it a try' as a response." (INT#1:8, transl.)</p>
	<p><u>Commitment leads to validation</u></p> <p>"We had our old CEO as a speaker in two of our Design Days, which in an organization like ours really underlines the importance of the event. (--) At that time we used to be a 15 people unit, so the fact that the CEO of our sized organization opens our event and stays there to be part of the panel discussion and other things, it was pretty clear message to everyone that this thing has value to it, and that it is important what we are doing. That the topic is important." (INT#7:3, transl.) // "We have had a few good sponsors in the upper management who have been talking about this and kept design on the frame of mind, so to say, and through that supported the growth of the design and design skills, and the promotion of its importance. (--) There is the support and appreciation for what you are doing, starting from the CEO of the business operations." (INT#8:3, transl.) // "Usually in companies there are certain product owners who own the projects. And getting one of those as early as possible to commit to it [design change] would be good. (--) And through that you might get the official stamps of the company to the papers that 'this is a good thing, here is your budget, go do it the way you see fit.'" (INT#3:4, transl.)</p>
	<p><u>Powerful word-of-mouth</u></p> <p>"We got some people from our business operations involved and then one of their representatives was like 'hey by the way, I just learned that you can create concepts from idea to prototype and customer validation within three days, and it's not a half a year and a hundred PowerPoint presentations project, but instead it is a prototype of three days' and then when they start to talk to their business managers and other functions managers, that's where the demand comes from. (--) So we basically got our management, and first of all our CEO, to support and talk about this thing." (INT#6:2, transl.)</p>
	<p><u>Support from as high as possible</u></p>

	<p>"I think that you need to have this type of a hesitant 'yeah', or 'hey, this seems like something that we should follow' from as high from the management as possible. Because if this activity hits somekind of a middle management glass ceiling, then it won't actually, then nothing will actually happen." (INT#1:9, transl.) // "Buy-in from the leadership organization [is one of the things that helps the implementation go much smoother]." (INT#9) // "The higher you can get the drive for it [the design change], the better. So that, in a way, it needs to come from the example. (--) If it comes from that high, then people will react like 'Well, let's see what this is about, since this is what our CEO talks about all the time'." (INT#10, transl.)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Approach</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Show, do not tell</p>	<p><u>Just start to design</u></p> <p>"Just starting to do it, ha ha. (--) And then through that take the rest of the organization in it, involve it. (--) It's through action that you actually change the culture and you can spread the design culture inside the organization." (INT#8:4, transl.) // "The actual implementation work of course happens in the individual projects. (--) The design thinking and design being are born from design doing." (INT#6:3, transl.) // "This 'learn by doing' approach, it's what applies here. (--) Yesterday we had this workshop and then, umm, twenty people didn't know anything about design thinking, and now they do." (INT#11)</p>
	<p><u>Small projects, small successes</u></p> <p>"What are the odds that any kind of change will go through if you can't give any arguments for it? In your own organization's context." (INT#8:5, transl.) // "You just can't go to an organization and say that 'now we need to start using design thinking' and then everything will change, but it's small steps. And it's with those small acts and small success stories how we actually do the implementation." (INT#7:4, transl.) // "Through those good experiences I believe you can then scale it up." (INT#8:6, transl.) // "You can reach the upper level with small projects. So if you for example have some kind of a product development project, or service development project where in a small bubble you could try these methods and this way of working, as long as you get the permission to do that, then... it's a good way to show that this works. (--) When you don't try to eat the whole elephant at once, but instead you do a really small thing which you can do, and then say that 'hey, we did this, it worked well, these people liked it, these are the results we got', then it will start to grow from there." (1:10, transl.) // "It's more like that we've shown them in small pieces how it could work, and we gain their trust, and then they allow us to come sooner and sooner into the development process. So it's, it's much more about showing rather than telling." (INT#2:3)</p>
	<p><u>Lead by example</u></p> <p>"We are hoping that then also customer experience management, our unit will work as a lighthouse unit within our organization and if you lead with good example that others hopefully want to join the party." (INT#5:2) // "My personal opinion is that the way we are going to transform our organization into design-led organization is by each one of us in our respective areas doing that really successfully. And then, getting a lot of attention because of that. So that the rest of the organization wants to do it, rather than we are pushing." (INT#2:4)</p>
	<p><u>Demonstrate scalability</u></p> <p>"And then also showing the road for scalability [helps the implementation go smoother]." (INT#7:5, transl.)</p>
	<p><u>Measure the ROI of design</u></p> <p>"Showing how this can be measured is a hugely important in an organization, that what kind of benefits does this have, how are they actually measurable." (INT#7:6, transl.) // "I believe that the place to and the chance to influence are found if we can develop how we measure the benefits of design and the value of design. (--) And I would like to develop</p>

		these ways to measure design's benefits even more." (INT#8:7, transl.)
Organization	Company culture	<p><u>Culture of experimenting</u></p> <p>"You need to have this type of a culture of experimenting, that when you find those causes and phenomena upon which you could build possible solutions, you also get to create those solutions afterwards. (--) Having a culture of experimenting and involving customer in the experiments is crucial." (INT#1:11, transl.)</p>
		<p><u>Culture of failing</u></p> <p>"After the culture of experimenting you have culture of failure. So that when you... when you create a 1,000 ideas, most likely 950 of those will fail. But you can never know if you don't involve the customer till the very end, if you don't take the customer into the creation process with you." (INT#1:12, transl.)</p>
		<p><u>Culture of creative thinking</u></p> <p>"So you need to be creative in that way, and have creative thinking, a culture of creative thinking." (INT#1:13, transl.)</p>
	Organization	<p><u>In-house designers</u></p> <p>"But it [having in-house designers] really does win. When I have been involved in projects where we have had designers coming outside the company, the difference really is considerable when those who come outside really don't know anything about your business model or operations. (--) We are such a big company that the learning curve on how we work is pretty steep, so you don't just learn after a couple of weeks." (INT#10:2, transl.)</p> <p>"Also when we have our internal design team, we also have the capabilities to buy design from outside in a different way. (--) We know what we are buying before we actually buy it." (INT#7:7, transl.)</p> <p>"Having that critical mass of people working [is crucial], you can't just have one consultant who goes around or tells people what to do, you need to have a group of people who actually show how it is done. (--) This group of people bring the credibility and legitimacy which also leads to solutions. So, it doesn't help if you just have a couple of funny designers compared to a thousand developers, they [designers] will only get lost in it. And there won't be benefits from it." (INT#6:4, transl.) // "On that side [service design] the work has only just started more now that there are actually people there. So we don't only have one person running from one meeting to another and who can talk about this thing, but instead there are people who can now start to do those things we've previously been talking about." (INT#3:5, transl.)</p> <p>"I think that the more you could work can do with your internal, hired team the easier it would be to let that team find out what are the problems, and what to do, or what problems to solve. (--) Of course that can also be boosted with external consultants or sub-contractors if necessary, but having the own team is probably the best way to do it. (--) It [having an internal design team] also brings in the flexibility. As soon as we talk about sub-contractors or others, there are the contract negotiations and goal settings and all the others which come with it." (INT#3:6, transl.)</p>
		<p><u>External change-maker setup</u></p> <p>"I came here about six years ago into channel development. (--) There had just been founded this type of a development unit, which began to re-adjust the frequency on our company's radar into something new, so to say. (--) It was kind of separate from the activities of our headquarters." (INT#8:8, transl.) // "When we got our first designers we</p>

	<p>started from a kind of a challenger position in that situation. (--) They told quite openly that we will come and challenge the existing field what we have. We were kind of introduced and brought to this other corner in red shorts, so to say." (INT#10:3, transl.)</p> <p>"[In the separate development unit] We had a kind of good growth base for design, and the whole surrounding team was kind of in this mindset and feeling that we will renew this whole way of working, and bring in customer-centricity and so on." (INT#8:9, transl.)</p>
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Table 13: Challenging factors of design thinking implementation - Illustrative Excerpts

People	Employee challenges	<p><u>Requires pro-active work attitude</u></p> <p>"Quite a lot of legwork we have actually put in it, so that we've in a way earned are place there in the development of the business processes and decision-making. (--) We have gained the responsibility there, it wasn't like the responsibility was anywhere, like, there was no defined mandate from the management, but it was more like something we had been ourselves pro-actively building and... it wasn't without challenges." (INT#1, transl.) // "I remember many and long discussions with my manager, who was always very open and understanding but it never led to anything tangible and I do not know why. Maybe there was not the same passion in that person that I had, maybe not the sense of urgency that I had." (INT#2)</p>
		<p><u>Finding skilled people;</u></p> <p>"[It is challenging to] Find people who know what to do. When everything is at the moment, ummm, when there is so much more demand than supply, the recruitment can be surprisingly difficult, especially if you are looking for the kind of more experienced people who have already gone through the worst failures and successes. (--) It almost goes to headhunting to find those people." (INT#3, transl.)</p>
		<p><u>Work fatigue</u></p> <p>"Our people are hard-working, they are passionate. Of course we are also in a place where we are a certain kind of a competence center for all our developers. We see all the silliness and overlap that happens, and what others could do instead to improve on them, so on top of that actual design work and transformation work we additionally start to have a lot of other needs where we are being asked for and where they need us. (--) Which then leads to the fact that we have genuinely had quite a lot of work fatigue in our unit. What leads to it is that when you push this change forwards, and then at the same time you see all the things which should change, it really burdens and weighs on a person a lot. (--) And when in principle, the people who are passionate about things, for them it really is very burdening." (INT#4, transl.)</p>
	Lack of design leader	<p><u>Lack of leader and strategy</u></p> <p>"That's a really good question [Who decides what design thinking is in your company?]. There is no Chief Designer in our company, so there is no one person in here who says 'Okay, strategically our company is going to do this, because that's what I burn for', etc etc." (INT#5) // "I would say it's a full-time responsibility that needs to be a specific role set-up. Design Lead, or CDO, design officer who would have his office like in all the organization. I think it's this leadership of the whole design expertise in organization that needs to be in place." (INT#6) // "Sounds ridiculous, first they come up with 'design thinking in everything we do', but not involving a designer, failing for one year, but not actually asking us what we should do in order to change, because they were somewhat probably hoping that change suddenly happens automatically, bottom-up."</p>

	<p>(INT#2:2) // “But that's the problem, that's the problem [that there is not a person whose task it would be to build a unified design organization]. There has to be a figure, okay, that funds a program, okay. (--) They [designers in the company] are spread out, and we don't know... we don't have a unified function yet. We should probably have.” (INT#7) // “And I guess the fact that we don't have a Chief Design Officer is maybe also an indication of that. That there is no-one on a high corporate level who would be responsible for this.” (INT#2:3)</p> <p><u>Lack of pressure to change</u></p> <p>“And I also myself had to learn this the hard way that the bottom-up approach, especially I think in a large company, it's not working. (--) You need, as much as I hate it to say that, but you need to have, have some force top-down. (--) It's something that I will also tell the management that we need some force from top-down so we have some ideas of what to do, but they have to be agreed on and then being, we have to get a mandate, changing some processes and the mandate to insist on them, setting up hard boundaries and rules. (--) It would definitely help to have a Chief Design Officer, that someone high up there has the mandate and the power and the sense of urgency to push this further in the company. (--) And this is again [making tangible change] is where I said like we need some top-down support, some pressure that is overcoming the lazy habits of people.” (INT#2:4)</p> <p><u>Lack of tools and knowledge</u></p> <p>“But they [interviewee's direct manager] don't have the tools or the insight on how do we have to change our way of working to make this happen. (--) Where to, you know, again, put the crowbar in and you have to attack that point and convince these people and push a few knobs there, it is difficult.” (INT#2:5)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Mindset issues</p>	<p><u>Refusal to change old ways of working</u></p> <p>”[What are some of the challenges] Just habits, I'd say. A certain, customary way of working, and when you for a long time have been used to working in a certain way... well, breaking that is essentially a requirement for this [design change].” (INT#8, transl.) // “For many people it [the ambiguous way of working in design thinking] is really difficult to accept because they are used to being like ‘now that I am the decision-maker here, I know what I decide about’. (--) We've had some natural turnover of employees, some people have retired, there has been a few organizational changes, and so on. In general, most are able to adapt to change but it is natural that in an organization of this size, not everyone is capable of or willing to change, and then you just need to wait until people retire and the space is freed. That's just the ugly truth.” (INT#4:2, transl.) // “There was one case at one time where the idea was, well, it was just bad, and then customers didn't understand it at all, and we tried to validate it for three rounds until finally they told me that ‘we do not need the help of designers anymore’, at which point I was basically like ‘well, choose your battles.’” (INT#9, transl.) // “Work life is busy, you have a lot of pressure, the calendars are full, you have to make quick decisions, and in these situations you go simply to proven right, the path of least resistance. You don't want to have any additional hassle in a stressful day, thinking 'oh yeah, um, now I have this burning issue to talk about with, with a customer, I'll simply call them or go there myself and I completely forgot that hey, [name of the interviewee] told me that we should actually take a service designer along. Even if I would ask, maybe there is no-one right now available and... Ahh, no, let's just not do it, I'll just take care of it myself', as an example. (--) I think these are the normal human things and you need some pushing.” (INT#2:6)</p> <p><u>Pride of other employees</u></p> <p>”I don't think there is anything really there [why people had some opposition for design], it was never personal or like there was a certain thing against designers. I think it was more about that ‘they [the management] just brought together this group of people in the middle of no-where to do the things we have always been doing’, that was probably the</p>

	<p>bigger reason.” (INT#10, transl.) // “We are a decades old company, people have been doing things in a certain way, very successfully, for decades, and it is hard for the old people to suddenly listen to these whining designers who want them to change their behavior. ‘Why would we do things differently?’ I would say, ‘We’ve been doing this now for several years which works really fine.’”(INT#2:7)</p> <p><u>Envy of other employees</u></p> <p>”I think that is where it is coming from [the resistance against design activities], of course when we kind of were allowed to do things free from the restraints. The reason is probably that there are a lot of people who have been working here much longer than any of us. (--) I can understand that someone who has been working here for 20 years will get upset that ‘Oh, so do you think we don’t know how to do these things?’, and ‘why do those people get to do it like that?’.” (INT#10:2, transl.)</p> <p><u>Dismissive attitude</u></p> <p>”Even with my own colleagues there is quite a lot of, you know, these type of people that in theory are like ‘yes, of course we need to do it this way’, but then in practice they are like ‘ah but, no we can’t do it yet, we need to define it better.’” (INT#8:2, transl.) // ”In the worst case it becomes a thing where people say that ‘that is a good idea – let’s execute it when we have enough resources.’” (INT#3:2, transl.) // ”It is extremely slow at times. I mean, no-one is actively against it. Most people don’t actively progress it because they don’t understand, and say that ‘Yeah, they are saying something there now, but I have my own goals for revenue, so I’ll focus on that’.” (INT#9:2, transl.)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Approach</p>	<p><u>Design thinking does not move from words to actions:</u></p> <p>“It was, I think in 2016 when I heard that design thinking has become, according to words of our CEO, ‘part of the operational plan’, whatever that means in, in corporate speech, and I was very pleased to hear about it because I’ve, it raised up my expectations that in the organization something maybe would-, would happen, but I haven’t really seen any evidence of it. (--) We have been saying this for years now, but it’s-, it’s simply not happening.” (INT#2:8) // “But I, to be honest, it felt very frustrating for me [having design thinking advocates’ meetings and planning the implementation], because... we ended up spending a lot of time talking, and not doing.” (INT#5:2)</p>
	<p><u>Individual activities are high-effort, low return</u></p> <p>“It’s [new employees’ design introduction presentations] a drip in the ocean. So it’s a lot of effort for relatively little impact, so we kind of became reluctant of doing that. (--) We’ve basically stopped doing it, or I’m really reluctant doing it meanwhile, because.. yeah, a lot of energy for little impact.” (INT#2:9)</p>
	<p><u>Change is scary</u></p> <p>”Yeah, it [the design transformation] shakes the structures, and change is scary. Sometimes change can paralyze. (--) In our culture, as in many other, there is also the idea that ‘yea, but, I don’t know really, let’s wait until someone else gives it a try first’, and you can’t just progress with that kind of work.” (INT#8:3, transl.)</p> <p><u>Change is difficult</u></p> <p>“But, as humans in general are resistant to change and want to stick to their habits, it’s tough. (--) Of course, there might be situations when you think if-, if a company is so resilient to the idea, then trying to push it might feel very draining and hard.” (INT#2:10)</p> <p><u>Change is slow</u></p>

"We've reached this stage slowly. (--) It doesn't matter what it is, but especially with culture change it doesn't, it just doesn't happen overnight. (--) Comparing this to running, this is the marathon, the long-distance running. If you are a sprinter yourself, you will wear yourself out fast. I'd say it's the same thing in any large organization." (INT#11, transl.) // "I have also learned that especially this type of change of culture is damn slow." (INT#9:3, transl.) // "It takes time to build it, takes time to attract talent, to showcase that we are successful, we gear for freedom to experiment, and we devote our time and, you know, leadership is buying this in, customers are happy." (INT#6:2)

Contrast between old and new ways of working

"Our development is led by solutions, not goals. (--) And that is kind of our core challenge, to find out what is the goal that we are aiming for, so that we are in our 'happy place'. But then when they tell us to 'we need a mobile application, design us a mobile application' without understanding why, then we are in trouble." (INT#4:3, transl.) // "We have like an R&D [Research and Development] department. And... that department does almost no R. [Research] So... we, we basically just develop everything. And that's-, that's the big shift that I'm pushing towards the development side, but then I'm also working with the sales organization and the aftersales, customer support, and invoicing, change management, training, all of those areas really need help when it comes to how to-, how to deliver a fantastic experience." (INT#5:3)

"This culture has been very specific and process-driven in the sense that in each stage of the process we know what's coming out, so that has been one big thing [which has slowed down]. (--) Like, when you utilize the design methods, at the end of the process you have an innovation, that we can guarantee. However, we do not know whether it's a cat or a dog or a fish or what it is. And this is the thing which is difficult for these types of organization which are used to knowing what is coming, how long will it take, and how much money goes into it, and so on. So we can say that, or promise that there will be a new way to reach the business benefits, but we do not know what that is, and you need to trust that the process carries it and trust in the end result of the process, when we have a very concrete prototype of what it is. But we don't know it now - like, we will know it in three weeks, in a moth, but we do not know it now." (INT#4:4, transl.) // "It is quite a large cultural change. Like for example a company who is very product and business-centric where the customer is not really in the core, and then like the methods of design which are very iterative and demand that you have to tolerate ambiguity, in many ways it can be a very different and new way of doing and thinking about things." (INT#1:2, transl.) // "You need to tolerate the ambiguity, and if you can't do it, then you won't get forwards with this." (INT#3:3, transl.) // "They [product owners] don't like the idea that, 'okay we're going to do some... research or discovery phase, and for that research and discovery phase we're not going to be committing ourselves to writing any code. Because we actually don't understand the problem yet, nor the solution area. So for that period of research and discovery phase I'm not writing code'. And product owners get a little bit anxious whenever there's nobody writing code." (INT#5:4)

"There are scenarios where design thinking [processes] is really difficult to implement. (--)) There are scenarios where that [the design thinking process model] doesn't fit. One of the ones that we have stayed away from is in a public tender process. So it is quite impossible to do that in a public tender process. For a customer to legally make a decision who wins a tender process there needs to be really, really water-tight criteria. And that means that the customer's forced to define really fine-grained what it is that they are looking for. (--) In a public tender process, if you have worked together with customer to define a particular need, you can sometimes be excluded then from ensuing tender process, otherwise it will be seen that you have an unfair advantage. (--) So, I would say it's not-, it's not everywhere that's an issue, it's an issue when you are forced to do a public tender." (INT#5:5)

Keeping the change in control can be challenging

	<p>“But then when you have a large company where they are used to having a big organization, long projects, and the investments in the planning stages, if there are any, will be large sums of a money. Then there is the danger that this kind of blows up to become such a bogey which just eats all the money and doesn’t produce any.” (INT#8:4, transl.)</p> <p><u>There will always be challenges</u></p> <p>“The amount of problems is standard.” (INT#4:5, transl.) // “The amount of challenges is standard, but their scale might change.” (INT#11:2, transl.)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Challenges of design thinking</p>	<p><u>Can be difficult to measure</u></p> <p>“It's also difficult to correlate that the reason we got this sale or the reason we won this customer was because we invested more time in the sales process or we understood our customer more because of design thinking or whatever, it's really difficult to draw the correlation.” (INT#5:6) // “Usually, design thinking has a lack of evidence, or it's true that now there has been some development on this area. But still, there seems to be a mismatch between linking the evidence with actual business outcomes that you want.”(INT#7:2) // “Yeah, measuring the impact is also something that is still little bit difficult because it's a long-term impact, and it's very hard to justify the investment, because you don't see immediate results.” (INT#6:3) // “The reason for that [why some people have questioned the role of strategic design] is that it is more difficult to measure. So when, if service designer is somewhere designing the service in a direct way, and people are coding it and then it is deliver out straight like that, you can kind of see the day one and the last day of the project, it is easy calculate what is the value of the designer in that scenario. (--) But then when you go to things where we are designing our future business models and we are spotting trends and what is happening at the world, it is considerably more difficult to measure.” (INT#10:3, transl.)</p>
	<p><u>Finding balance between customer experience and good business</u></p> <p>“Developing customer-centric services is not difficult, but making those so that you can build business around them, that is another story.” (INT#11:3, transl.) // “Because we are a business which is running, that needs to be sustainable, and managers or finance controllers, are like 'okay, we have timeline, we have timeline, we cannot experiment forever, we cannot pay much money for experiments, or we need to move forward'.” (INT#6:4)</p>
	<p><u>Design thinking mania</u></p> <p>“Maybe there are some bad sides to it [design thinking] that many agencies, especially marketing agencies are offering also service design services, and then some of them are better at it than others. (--) Everyone wants to be involved in this [design thinking], and the fact that companies want to invest in this is a good thing, but then who are helping those companies is another thing. (--) Because there is very little buying knowledge, people don’t know how to buy design. And then they go and buy a project from somewhere because someone knows somebody, and it goes badly, and then the thought from that is that ‘this design thing is crap’, when in reality it was a wrong agency, wrong method, there was no actual competency there. (--) This type of mania which comes from it, kind of like blinded by the speed, that everyone is excited and want to do it versus whether it is done correctly and with quality is the risk there.” (INT#9:4, transl.)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Credibility issues</p>	<p><u>Design thinking is not understood</u></p> <p>“At the time when I started, I realized that my, my managers back then had a really skewed idea, like still, about design, what it means. They literally thought it is making things look nice.” (INT#2:11) // “A lot of people when they hear design thinking they think about the graphical elements and especially in terms of, a problem in company like</p>

	<p>ours, and then when people hear the term design thinking they connect it with the-, with the conception of graphic design, so they believe design thinking is about making products look nice." (INT#5:7) // "Design is seen as this operative thing, from brand guidelines and graphic instructions. Which do describe the core of the brand, but when you talk about design philosophy it's a slightly different angle. (--) What are the things that distinguish our company's design culture." (INT#4:6, transl.) // "In quite many places design is seen as this kind of an operational level practice, so that when the development project has been started you take a designer in it to do this type of practical product development problem-solving." (INT#11:4, transl.) // "I think sometimes the understanding is that 'ah, design thinking, we run a workshop and that's it.'" (INT#7:3)</p> <p><u>Design thinking's worth isn't seen</u></p> <p>"[The manager told me that] 'How dare I think that his management team would spend three days into something like this, they have much better things to do'. And I happen to know that this same manager had just the previous week accepted a system renewal project worth of 3 million euros, so that wasn't a big of an investment at all, but the timely investment of three days [for Design Sprint] was a insurmountable." (INT#4:7, transl.) // "It's very difficult [getting design involved in projects] especially when you don't get any support because the value is not seen by for example sales. (--) The situation has also been so that to make a proposal you put a price tag on it and then look at it with like 'Ah, it's a little bit too much, we have to shave off some euros'. The first victim was design, not the developers." (INT#2:12)</p> <p><u>Design at strategic level is questioned</u></p> <p>"Well, I believe that service design, when we talk about it in tactical level, it's kind of been accepted, the value of it is understood. But now, when we are trying to get to the next level in our design, the value of strategic design is the next stage. (--) The strategic design is not yet completely understood. It is, in a certain way challenging. So this certain type of questioning has happened, in the sense that 'is this really sensible'. (--) I think the challenging thing here is that kind, it's a tough thing to teach, the reason for 'why are we again doing something new, in a different way'." (INT# 10:4, transl.)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Organization</p>	<p><u>Size and silos of the company:</u></p> <p>"You can see it as challenge that since we are part of the development organization, and the business organization is another organization, then there is some times the question whether we are in the right place in the organizational point of view when the link to our business activities should be so strong." (INT#1:3, transl.) // "The size of the organization [is a challenging factor]. (--) There are silos everywhere. And I think that is the biggest challenge, as well as the reality." (INT#9:5, transl.) // "There is quite a lot of change, and the scale of the change is something that slows it down." (INT#8:5, transl.) // "[Why have the sales people not wanted to take the designers?] I. Don't. Know. Beats me. We we are simply in a little bubble, and we can't really get out. We are saying this for years now, but it-, it's-, it's simply not happening. (--) You always speak about 'One [name of the company] but... in reality it's, there-, there are many [name of the company]'s here with many directions and opinions." (INT#2:13) // "I think what the challenge more is... in our company, maybe it's just my unit, but at least my unit is a lot of small kingdoms. So a lot of... product owners, and not so much country managers, but like... those kind of level of management. (--) So it's really easy, or relatively easy at the leadership team level, at my level, that everyone around the table, all 15 people, agreed that 'yes, this is what we should do, and here's a strategy about it', and the Heads of department say yes, and we all pat ourselves on the back. But then, we're-, we go to the people who are making the decisions about what to develop and how to develop it, and we are asking them to change the way they work. And that's... not so easy." (INT#5:7)</p> <p><u>Design needs to be a collective activity</u></p>

	<p>"Design will fail without a doubt if it is only done by designers." (INT#4:8, transl.) // "The rest of the organization should also be in the stage where they can support the designers, because it's not like the designers alone do the work, and instead the best results are gained when the business and technology and then design are all together. (--) The triangle should be ready so you can do things on a concrete-level, because in this combination you can get results in the fastest way." (INT#10:5, transl.) // I see that there is a lot of benefit if more people are talking about design besides the designers." (INT#1:4, transl.)</p>
	<p><u>Bureaucracy</u></p> <p>"Bureaucracy [is one of the biggest things that slow the change down]." (--) There is this attitude of 'Where do we get the money', and 'Do we have the approval for this', and 'Can we move in a fast and agile way'. (--) It's not like a five person start-up where everyone knows what's happening and what happens next, but instead there is always the 'Well, okay, who will take the responsibility of this', and 'How will this be taken forwards', and 'Who is the product owner of it', and so on." (INT#3:4, transl.) // "Decision-making, decision-making processes and structures definitely slow it down. (--) This type of traditional thinking where you need to have everything, the functionalities and attributes, very well specified on paper before anything can be done. And well, that is conflicting with this whole way of thinking. (--) And it also relates to the budgeting. Nothing can be done before you have the approval from there, there, there and there, and you won't get the approval before you've given the specifics of what you are doing." (INT#8:6, transl.)</p>
	<p><u>Challenges of the B2B business model</u></p> <p>"There's an added complexity in our business in that we are B2B. (--) In B2C's being design-led and making sure you're focused on the experience at every touchpoint is different when your customer is your user, when you are selling directly to the people who use your systems. (--) I mean our customers, right now, are not at the stage where they are obliging us to deliver fantastic experiences. They are still asking us to deliver technical, functional requirements. Some of those technical, functional requirements sometimes are related to usability, but that's different than experience. (--) But in our business [B2B] we have to satisfy a customers' wishes, where at the same time satisfy our delivery of a fantastic experience to a user, even though we know users are not paying any money for our stuff. And that makes the audience, when I give these talks, that's the most heated discussion. (--) How to solve this customer need and this user need at the same is exactly why design thinking is moving slower in B2B's than in B2C's." (INT#5:8)</p>
	<p><u>Scaling design thinking up in the organization</u></p> <p>"We have this type of situation where the shoemaker's child goes barefoot. We have been growing in such a fast pace that we haven't yet formalized our design philosophy. (--) Now that the challenge is that there is so much demand, we have to find the right places where we can actually have influence, but at the same time so that our people stay motivated and get to do things where they are actually using their competences." (INT#4:9, transl.) // "Of course we have also had problems with scalability, like what to prioritize and where should we be involved, in what way, how can we support all of this. (--) But like, don't even try to scale it up when the organization is not ready for it." (INT#11:5, transl.)</p> <p>"The role of this kind of an in-house designer always includes the transformation and the cultural change of the time, so you don't just go there into the projects to work, but instead you go to the projects to work and change the way the project team is thinking. (--) You need to balance continuously how much are you working in the way you want to work and how much are you trying to make sure that the next project will be a little bit more like what you'd want it to be. (--) How much time goes to giving the specific details and how much are you teaching at the same time. (--) It kind of turns slightly to the fact that people also assume that we are, on top of being designers, also project managers, change agents, and there are a lot of those kind of roles." (INT#4:10, transl.) // "One of the challenges has</p>

	<p>been that how do you help the organization go through a strategic change while at the same time think about how you help the current structures to develop services and business models." (INT#11:6, transl.)</p> <p>"We've grown quite a lot as an [design] organization from what it was when it started. (--) So somehow, I'd like us to maintain the spirit of design in what we are doing. Like, make complicated things into simple, and keep it simple what we do. (--) Remembering that design itself is not the thing, but that design is the thing for the whole company and that we are doing things together should be the main focus of it. But with this big of a group of people you have the threat that it goes to this type of thing between individuals, when after all the value of it is to create things together with the rest of the organization. I'd like to hold onto that way of thinking." (INT#1:5, transl.)</p>
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