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Creative Design Management

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WE HAVE THIS THING CALLED ACTUAL WORK

– static friction in implementing design thinking

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MASTER'S THESIS | ABSTRACT

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- static friction in implementing design thinking

This thesis study focuses on the obstacles that organizations face while implementing design thinking. The research hypothesis is that there are several unidentified barriers in the implementation of a human-centered development process. These obstacles and barriers are creating slowness or, in the worst case, preventing the implementation, this slowness could be referred as static friction.

By identifying and understanding these obstacles and pain points, implementation and innovation becomes smoother since designers and business developers can plan how to overcome them. At the minimum the knowledge that others are facing similar situation makes the slow implementing process more tolerable.

Research and analysis concentrates on how people in the organizations talks about the problems they are facing and what, in their opinion, might be the cause of the friction. The analysis is based on nine thematic interviews, which were conducted in fall 2021. Thematic interviews are also analyzed in the perspective of the literary review and existing research results and the research section illustrates theories and frameworks on how to implement change and how to implement design thinking into organizations

As a result, this thesis points out three major themes around barriers. Themes are: Cuture and organizational maturity, leadership and strategy and people and processes. Thesis gives insight of the interconnection between these three. Understanding the root causes of barriers makes it easier for designers and business developers to analyze their organization's design readiness and design a more effective implementation plan.

KEYWORDS:

Design thinking, Service design, Implementation, Customer Centricity

OPINNÄYTETYÖ (YAMK) | TIIVISTELMÄ

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MEILLÄ OLISI NÄITÄ OIKEITAKIN TÖITÄ

- lepokitka muotoiluajattelun jalkauttamisessa

Tämä opinnäytetyö käsittelee muotoiluajattelun jalkauttamisen esteitä organisaatioissa. Hypoteesi on, että ihmiskeskeisen kehittämisen jalkautuksen tiellä on useita tunnistamattomia esteitä. Esteet hidastavat tai pahimmassa tapauksessa estävät jalkautuksen kokonaan, tähän hitauteen viitataan lepokitkana.

Kehitysprosessi ja jalkauttaminen helpottuivat, kun esteet on tunnistettu, sillä muotoilijat ja liiketoiminnan kehittäjät voivat suunnitella jalkautuksen vastaamaan tarvetta, koska heillä on ymmärrys lepokitkaa aiheuttavista asioista. Lisäksi tieto siitä, että muut ovat kohdanneet samankaltaisia haasteita, tekee hitaudesta siedettävämmän.

Opinnäytetyön tutkimuksessa ja analyysissa keskitytään muotoilijoiden ja kehittäjien kokemukseen ja esteistä ja niiden aiheuttajista. Tutkimuksessa selvitettiin myös, mitkä seikat heidän näkemyksen mukaan ovat hitauden aiheuttajia. Tutkimusanalyysi perustuu yhdeksään teemahaastatteluun, jotka tehtiin syksyllä 2021. Haastatteluja analysoidaan kirjallisuuskatsauksen ja olemassa olevien tutkimustulosten näkökulmasta.

Lopputuloksena tämä opinnäytetyö avaa kolmen pääteeman kulttuuri, johtaminen ja prosessit, kautta jalkauttamisen esteisiin liittyviä syy-seuraus-suhteita. Esteiden perimmäisten syiden ymmärtäminen helpottaa suunnittelijoiden ja liiketoiminnan kehittäjien kykyä analysoida organisaationsa valmiutta hyödyntää muotoilua ja asiakaslähtöisiä menetelmiä kehitystyössä.

ASIASANAT:

Palvelumuotoilu, muotoiluajattelu, kehittäminen, asiakaskeskeisyys

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ABBREVIATIONS AND DEFINITIOS

Design thinking: a customer-oriented way or process to solve customers' problems and finding the needs of the customers

Double Diamond: Double Diamond Framework represents the design process and design principles

Customer experience: The Impression and feelings customers have, when interacting with an organization.

Innovation: The embodiment of a useful idea in the marketplace. (Fitzgerald et al.,(2010, 13).

MDI: McKinsey Design Index MDI, which aims to demonstrate the importance of design intensity for competitiveness (Sheppard et. al 2018)

Service: A service can be any intangible work related to the customer value production process that a company provides. It is noteworthy that the service may be related to infrastructure or equipment.

Service design: A discipline and a process that uses certain kind of methodology for service development.

Miro Platform: An online whiteboard, which was used for analyzing purposes in this study.

1 INTRODUCTION

Today global competition, customer values and rapidly changing environment are creating uncertainty in business. It is ever harder to compete and find competitive advantage solely with technology, functionality, or product features (De Goyey et al., 2019 101). Startups are funded more than ever before, in fact startups are better funded than most innovation departments. Disruption is on its way (Ostewalder, 2021b). Competition is ever harder, and organizations cannot rely old way of doing things. They are forced to find and implement new kind of approaches for gaining competitive advantage and creating customer value.

Shifting from technology and product-oriented business to customer orientation and value creation is ongoing. Customer loyalty is impacted with three elements: success, effort, and emotion. There is a correlation between customer experience and revenue. Emotion is found to be the most significant driver for loyalty. (Temkin B, 2018, 2-11). Design-driven innovation gives companies competitive advantage. Consumers are starting to value intangible aspects of product as well as satisfaction more. Companies can differentiate from competitors by creating value via design process (De Goyey et al., 2019 101)

Design thinking, service design, customer experience development, growth hacking, ethnographic research, sensemaking and so many other customer- and phenomena-oriented ways to develop business. All these processes share customer insight in the core element in the process and in the culture. It is also in common with all these processes to understand the complexity of customers everyday world and to design better service and experiences.

Customer-orientation is taken into company strategies. Many studies give evidence that it is an effective way to build competitive strategies and valuable services. But what happens in practice – why is it that so many organizations seem to struggle with the actual doing?

1.1 Purpose of the study and research question

For some years there has been discussion around different methods and practices for organizations on how to gain competitive advantage by understanding customers. There has been market research, customer experience development, hedonic research, service design, ethnography and so many other topics. There are differentiating factors in the approaches, but all these share two things in common: customer focus and iterative approach to problem solving.

The struggle organizations have in finding a winning competition strategy is real. There is evidence in the studies as well as in business cases, that by using customer insight in business development, organizations can gain competitive advantage. But the data and information alone are not enough; it is the execution that matters. Organizations have brought customer-centricity into strategies, and design thinking is taught to be the silver bullet that will solve all the problems.

Something happens between strategy and execution. I have noticed in my personal experience and discussions with other innovators, that the slowness in implementing these methods into organizational practices is frustrating. There is the strategy, practices, and seminars. There is a development process, workshops, and prototyping. There is a continuous process of educating and justifying. In discussions it seems to be rather hard task to implement design thinking, human centric development, or other similar innovation processes and methods into practice. It feels almost as there is something preventing us from moving forward and making progress, this slowness could be referred as static friction.

Many researchers have come across with the same phenomena. For example, Stickdorn et. al (2018, 6-7) suggest that separate functions do not fully understand the importance of whole process of the development to the customer, because they develop processes inside organizational silos, which causes slowness. Björklund et al. (2020) also uses term friction when they discuss gaps between design capabilities and different approaches to innovation in their study. This friction affects the outcome and usage of developed services.

This study is about the obstacles what designers and developers have come across while working. It is important to understand these barriers. By recognizing the obstacles designers can plan how to overcome them. It is equally important for leaders who try to

implement design culture as well as project managers or designers who are working with development projects. At the minimum the knowledge that others are facing similar friction makes the slow implementing process more tolerable.

This study concentrates on how people in the organizations discuss the problems they are facing and what, in their opinion, might be the cause of the friction. This study research does not limit the organizations by certain methodology or tool set used for their development as long as it is customer centric. The focus is on how to lead change when organization is embedding design or customer centricity as strategic way of creating value. In this study the word design is used to describe all development efforts used in organizations where goal is to solve customers' problems by iterative manner.

Hypothesis:

There are several unidentified barriers in the implementation of a human-centered development process and in the innovation projects organizations. By identifying obstacles and pain points, implementation and innovation becomes smoother.

Research questions:

- How does existing organizational culture effect on design thinking implementation?
- What is the role and involvement of a designer in organizations and projects?
- What are the most significant barriers or enablers in implementing design?

The discussions of the study interview research are analyzed in parallel with previous research and the sources found in the topic. The aim is to gain the widest possible insight into the challenges and the reasons for them.

As the study deals with barriers, the starting point is somewhat negative. This is not to say that organizations do not have good practices in implementing design thinking and customer orientation. I hope the reader thinks about barriers from a learning perspective – understanding increases the chances of overcoming challenges.

2 DEFINITION OF INNOVATION AND DESIGN

2.1 Definition of Innovation

This study discusses design and innovation processes. It is important to understand why this study research is not limited to study certain methodology in use. This section explains why design thinking has been chosen as the term and mainstream theme when discussing customer-driven development and a particular type of culture for this study.

The term innovation is used a lot in the business and development process. For this study one suitable definition is Fitzgerald et al. (2010, 13) who define innovation as being the process for moving new, valuable ideas into market and creating value for customers where return is higher than investment. In short, they define innovation as “useful embodiments of ideas in the marketplace”. In other words, innovation is an idea that is turned into valuable practice in real world. This can mean products, services, processes or business concepts or combination of these.

Although innovation can be something new, it is good to acknowledge that it can also be development of existing portfolio or processes. Fitzgerald et al. (2010, 65) divides innovations into incremental and fundamental innovations and notes that innovation is not about size. Osterwalder (2021a, 2021b) goes a little further and defines three types of innovation: efficient innovation to get better at what you are already doing, processes etc., sustainable innovation to update your business model and products and transformative innovation for new growth entrances and future business models. These can be in different parts of the organizations.

The process of innovation is iterative and rarely straightforward as it includes framing and reframing with ever-changing views of solution. It is continuously balancing between three elements that are in the relation together: the product or service, implementation into reality and the markets to be addressed. This can cause the process to look rather complicated, but the goal of the process is to be efficient and reduce the risk of loss in every step. (Fitzgerald et al., 2010, 5–6; 14–15.)

2.2 Human centered design or design thinking?

It is difficult to describe certain kind of customer- or human-oriented development method by one definition. There are similarities in design thinking, service design, customer experience development, ethnography, open innovation, and behavioral experiments. Of course, there are differences and nuances between these methods. In my research I found that organizations might use different wording for similar processes, frameworks, or methods they use.

Ideo (2021), a company that is credited for inventing the term design thinking, describes the differences in human-centric design and design thinking. Human centric design is a creative approach to problem solving a process that starts with the people and outcome is a solution that is built for the needs of the focus group. Design thinking is the human-centered approach to innovation. It integrates and balances between the needs of people, possibilities of the technology and the requirements for business success.

Design thinking is customer-oriented way or process to solve customers' problems and finding the needs of the customers. It is a goal-oriented way and structured process to produce best possible customer experience. Design does not only mean the end-product but a way of thinking and working. (Maula & Maula, 2019, 12-15; Design Council, 2014, 15-16.)

Design thinking often refers to the approaches and methods developed in the field of design. It is connected to human-centered methods such as creative problem solving and experimentation and iteration. (Björklund & al 2020, 101). Design thinking is a combination of analytical approach, intuitive thinking and early stage experimenting to find new approaches for current business problems There are similarities to other development processes, since design approach emphasizes human science and customer experience. (Maula & Maula, 2019, 12-15.)

Human sciences, such as anthropology and psychology concentrate on studying phenomena and how people experience the world and product or service rather than focusing on properties and data itself. This way of utilizing human-sciences in business is called sensemaking (Madsbjerg & Rasmussen, 2014, 2, 15). In business it is assumed that people make rational, considered choices, but often behavior is nonconscious and habitual driven by nudges in the environment. This means in business that if we do not

understand the context and the process of making the decision, we are not able to predict the behavior. (Hallsworth & Kirkman, 2020 11–12).

Similar idea of cocreation is in open innovation, where the goal is the creating and commercialization of services and products as cocreation with people outside the company. This helps organizations to overcome their own limitations and respond to external changes. (Kibaek & Jaeheung 2019, 2).

Service Design on the other hand, is defined to be the process to help organizations to understand and see the services in the customer point of view. The aim with the process is to develop experiences which meet the needs of both the customer and business. Service design is formed on the foundation of design thinking, but it shares a lot in common with experience design, human-centered design, and other development processes. (Stickdorn et al., 2018. 19–20).

Customer experience is a truly customer-oriented strategy to lead an organization (Schmitt, 2003, 17-18). Every interaction has effect in customer experience, this means all the physical and intangible aspects of service or product and the feelings that customer has while experiencing (Shaw & Ivens, 2007,8). According to Schmitt (2003, 25, 37-38) customer experience development always begins with customer insight and describes that customer experience development. The basis for leading customer experience is the customer.

As can be seen from the definitions, the methods are basically very similar, and their application requires true customer and user centricity. This study describes the mind set of human centric development by using the term “design thinking” since it can be used to describe the mindset as well as methodology. At the same time, Design thinking is strategy, culture, process, and methodology simultaneously which can complicate the understanding of design thinking and customer orientation.

2.3 The value of utilizing design thinking

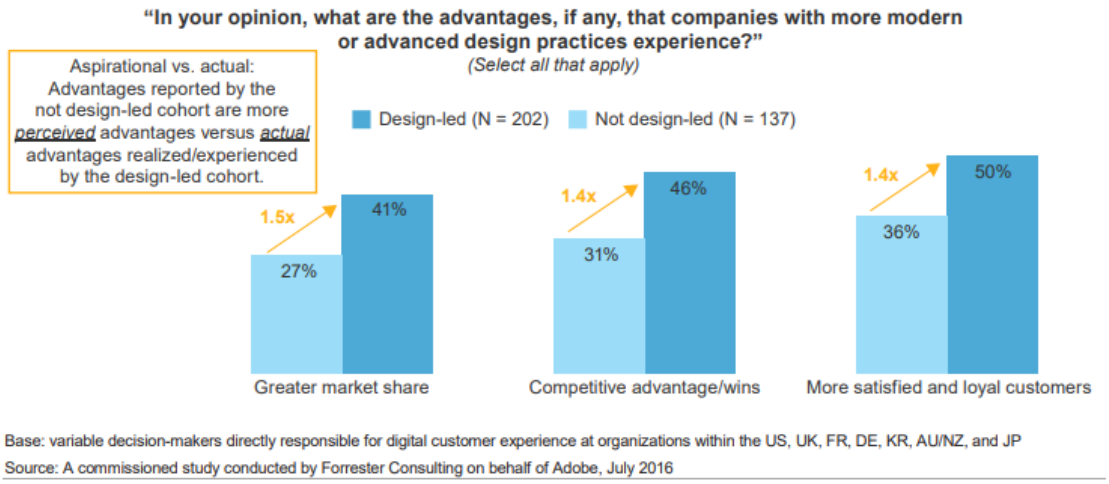
It was originally thought that the customer makes the purchase decision on the practical value of the product or service, i.e., utilitarian sources of value. In 1982, Hirschman and Holbrook (1982, 132) argued that consumer decision is also guided by experiential value. They introduced the concept of hedonic consumption, which refers to sensory experiences, dreams, and emotional perspectives on using a product. In the customer

experience, hedonistic sources are related to customer feelings and the meanings given by the customer. These are subjective and emotional, meaning customers experience the produced benefit differently. (Hirschman & Holbrook 1982, 92.).

Customers buy solutions to their problems not solely services or products. (Grönroos 2001, 29). For adding value to services and products organizations invest in design. By using design, organizations can differentiate their products, find new business areas with less competition, and strengthen brand and values of the company. (Design Council, 2014, 7.)

Design is not just about the final product or better service. It is about results that come with the market relevance. In 2016 Forrester institute conducted a study for Adobe to prove that design practices create measurable business advantage in digital customer experience strategy. The research was conducted with in-depth interviews and then validated with quantitative research. Based on the answers they grouped the respondents into two groups: design led, and non-design led. (Adobe and Forrester, 2016, 1)

The researchers found that non-design led companies underestimated the benefits in having design practices in the core of business. As seen in the Picture 1 Design and competition (Adobe and Forrester 2016, 6) below, design led companies have measured better customer loyalty and bigger market share than their competitors which don't have design approach. Bigger market share was reported by 41% of design-led organizations and better customer loyalty 50%. (Adobe and Forrester, 2016, 6)



Picture 1 Design and competition (Adobe and Forrester 2016, 6).

It is also found that companies, which invest in strategic design are more innovative than other companies and thus more profitable. It is also found that these companies grow faster. This is because these companies are quicker to come up with new services and products than companies that don't use design and by that they differentiate in the market. And yet design is overlooked by companies. (Koostra, 2009, 9-10.)

3 RESEARCH

3.1 Process of the research and methodology

The research section illustrates theories and frameworks on how to implement change and how to implement design thinking into organizations. Theme interviews are also analyzed in the perspective of the literary review and existing research results.

The focus in the research was to understand what obstacles designers and developers have in their daily life, what kind of effects does it have and, what might be the cause of certain friction. This study uses Double Diamond framework as a basis for research. And this research represents the first diamond in the frameworks which has the phases discovery and definition. Framework is explained later in the section 3.5. Theme interviewing was chosen for the qualitative research method. Theme interviews was done in September and October 2021 via Microsoft Teams and the interviews were recorded, transcribed, and later analyzed.

The interviews were conducted in Finnish and the analysis phase was also conducted in Finnish. Due to this, the images in the analysis phase of the Miro boards may contain text in Finnish. The purpose of the illustration is to help the reader understand the method of the analysis and to clarify the amount of material used in the analysis.

The quotations presented in this study have been translated from Finnish into English. The translation has been designed to keep the original idea as clear as possible. Unfortunately, there are some changes in the translations, due to, for example, idioms or colloquial expressions for which no direct translations can be found. However, as stated, the aim has been to preserve the original meaning of the quote.

3.2 Participants

There were nine participants in the theme interviews, and interviewees represent different organizations and were chosen randomly via recruitment post in Facebook service designer group and two of the interviewees were asked to participate because of their work status: one of them was director and one consultant. All other participants were designers and developers. Some of the participants spoke on the topic from the

perspective of both the current and the previous organization. One of the participants acted as a consultant and shared his experiences from a multi-industry perspective and in general. In total, the interviews cover 12 different organizations.

Organization represents public sector, third sector and business organizations. Fields of expertise and business were health care, circular economy, property maintenance, communications, banking, projects, forestry, energy, trade, human resources, telecommunications, and consultancy. As one can see there are more than nine fields of business. This is because some of the interviewees discussed multiple organizations they had worked with. Customers of the organizations were both consumers and businesses. The sizes of the organizations varied from one person to 14000 employees.

Interviewee's education and expertise varied greatly as well. Educational backgrounds were in sociology, marketing, communications. engineering, service design, business, design, and innovation.

3.3 Structure of the interviews

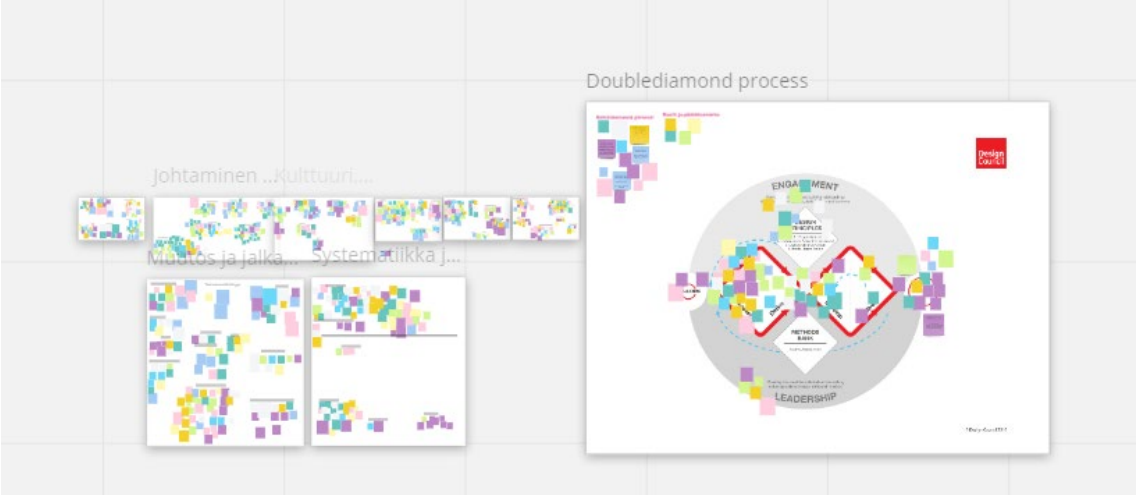
The interviews were semi-structured thematic interviews focusing on three themes, these three themes were chosen to answer to the research questions as extensively as possible. The interviewee was free to share his or her own experiences and the interviewer asked more specific questions about the topic. In this way, a broader understanding of the issues involved in design thinking in an organization was created.

1. Theme 1: Organizational structures and culture
2. Theme 2: Organizational design capability
3. Theme 3: Implementing design

Design Management staircase and Double Diamond framework was also used as a basis for discussion. Double diamond is widely known among designers and developers, so it was chosen for theme interviews to bring common ground for discussion. Staircase is visually easy way to understand design maturity and ensure that both the interviewer and the interviewee were discussing the matter in shared understanding. Both frameworks are explained later in sections 3.5 and 4.2.

3.4 Analysis

All the interview recordings were transcribed comprising total of 140 pages. From the transcribed material the discussions about the design process, design culture, obstacles and organizational structures were taken into the Miro board and themed (Picture 2 All the notes on the Miro board). All together there were 927 notes in the board.



Picture 2 All the notes on the Miro board

At first all the notes were roughly themed and brought onto the Miro board where theming continued. During the analysis phase it turned out that most of the notes could be sorted and themed to the Double Diamond framework. The major themes found were culture and maturity, leadership and organizational structure and resources. The research findings are presented under these topics.

The above-mentioned major themes have subcategories and are interconnected. For example: Leadership builds organizational culture, but certain readiness or maturity in the culture must exist for the so that organizational change to begin.

In the following chapters terminology and frameworks are explained. Research findings along with the literary review are explained through the major findings that create the obstacles into design implementation and practices. The findings also describe some practices and methods used to avoid these barriers.

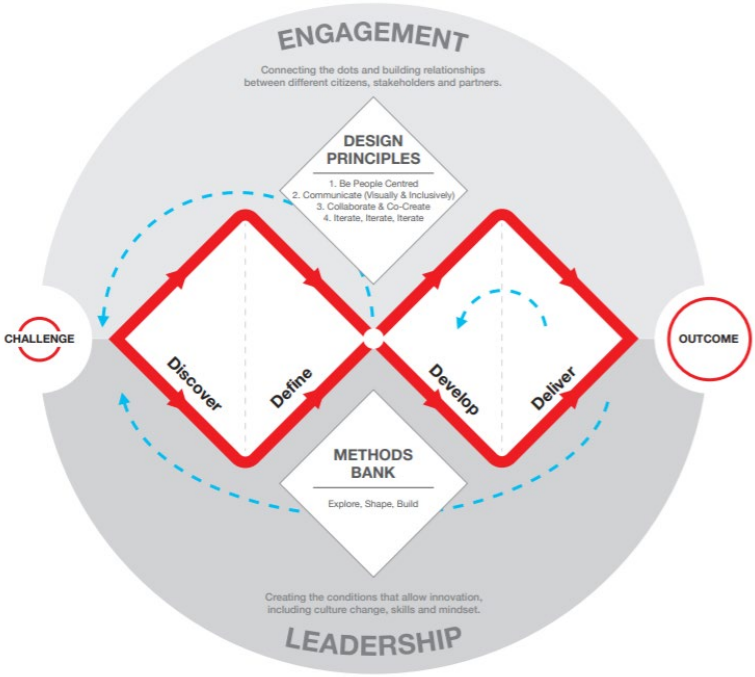
3.5 Double Diamond Framework

In this study Double Diamond framework is used for describing both development process and principles as well as surroundings and culture that makes design thinking possible in an organization. Framework was developed in 2004 and Design Council updated the framework in 2019. The new version of the double diamond model also includes the design principles, the methods bank, and the culture of success in design.

Double Diamond framework was found to be most suitable framework for research since it is widely known among developers and designer and the new version also supportive things around actual process. All the themes discussed in the interviews are somewhat related to Double Diamond framework. In this chapter the framework and link to study is explained.

The Double Diamond represents the design process and design principles. The two diamonds illustrate the process of exploring and gathering the information widely or deeply and then taking the focused action. It is notable that the process is not as linear as it is presented but more iterative and reflective. Every now and then one can also be sent back to the beginning after having learned something important about the problem during the process. (Design Council, 2021.)

Design Council divides the process into four phases as Picture 3 The Double Diamond process (Design Council, 2021) illustrates.



Picture 3 The Double Diamond process (Design Council, 2021)

The Picture 3 describes the four phases of iterative innovation process defined by Design Council (2021) as followed.

1. Discovery: The first phase helps to understand the question rather that to simply assume what the problem is. This requires discussion and research among the people who the outcome effects.
2. Define: After researching the problem one can define it more clearly and possibly in the different way.
3. Develop: In this phase people are encouraged to give different solutions to the defined problem and searching for inspiration and co-creating the possible answer.
4. Deliver: testing and prototyping different solutions in small scale. In this phase one can reject the solutions that are not working and improve those that work.

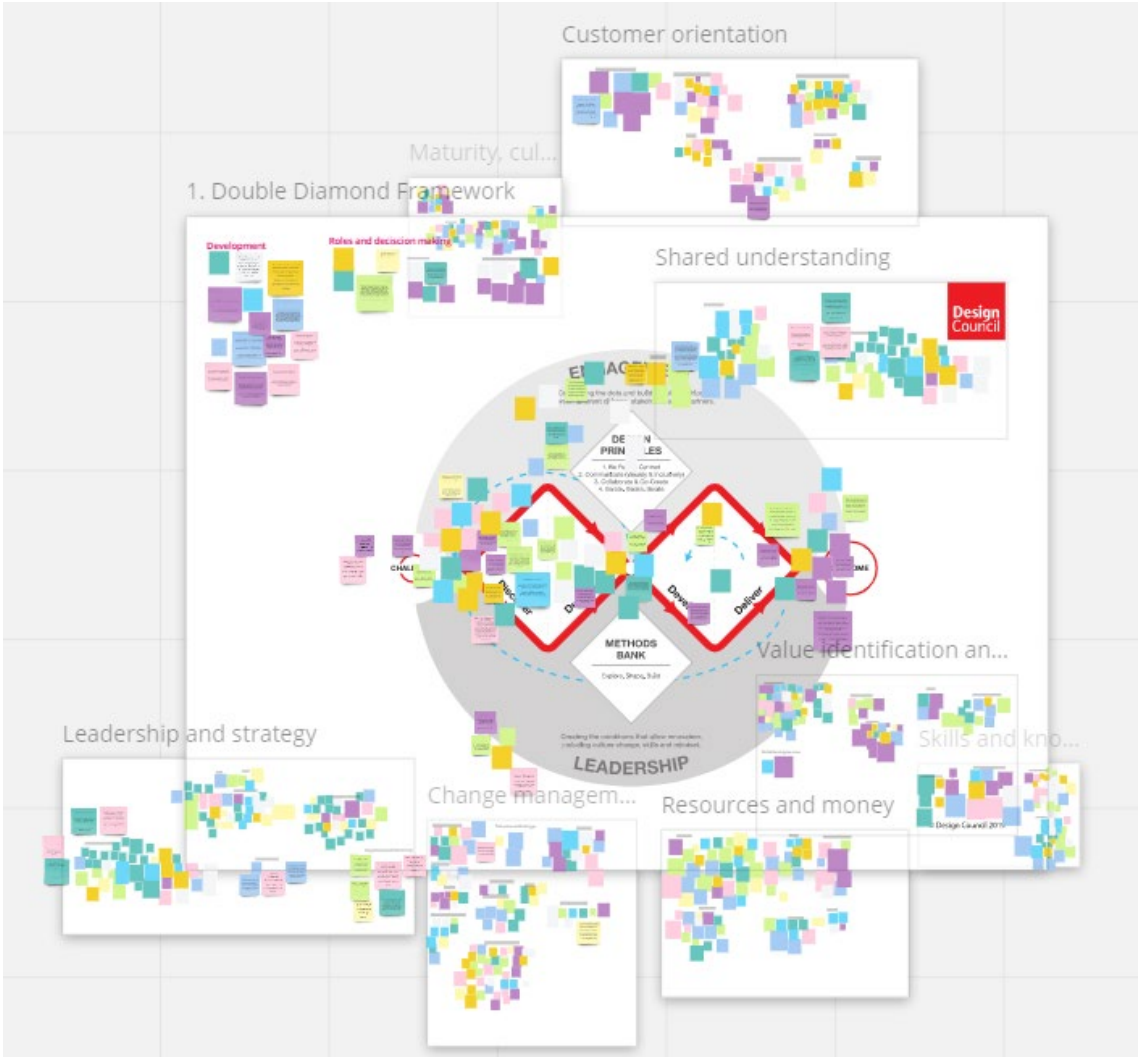
Design principles give four core guidelines that helps designers to work more effectively, and methods bank is a portfolio Design Counsil has for their customers (Design Council, 2021). Interviewees discussed this for example for developing method banks for internal use.

Leadership and engagement describe the culture of success in the organizations. It is found to be as important as the process and principles (Design Council, 2021). This has been seen among the interviewees also since all of them talked about culture, leadership, change management or customer orientation.

As can be seen in comparison with Picture 4 Simplified model of innovation process (Tidd & Bessant, 2014, 59) below, While Double Diamond and innovation process have similar phases, the Double Diamond model visually represents the iterative nature of the process. Also Double Diamond framework describe the definition and prototyping parts more precisely.

Picture 4 Simplified model of innovation process (Tidd & Bessant, 2014, 59)

The results show that all the findings' obstacles and contributing factors can be connected to the Double Diamond framework. As the Picture 5 Topics related to Double Diamond framework below illustrates all aspects of diamond have been discussed in the interviews.



Picture 5 Topics related to Double Diamond Framework

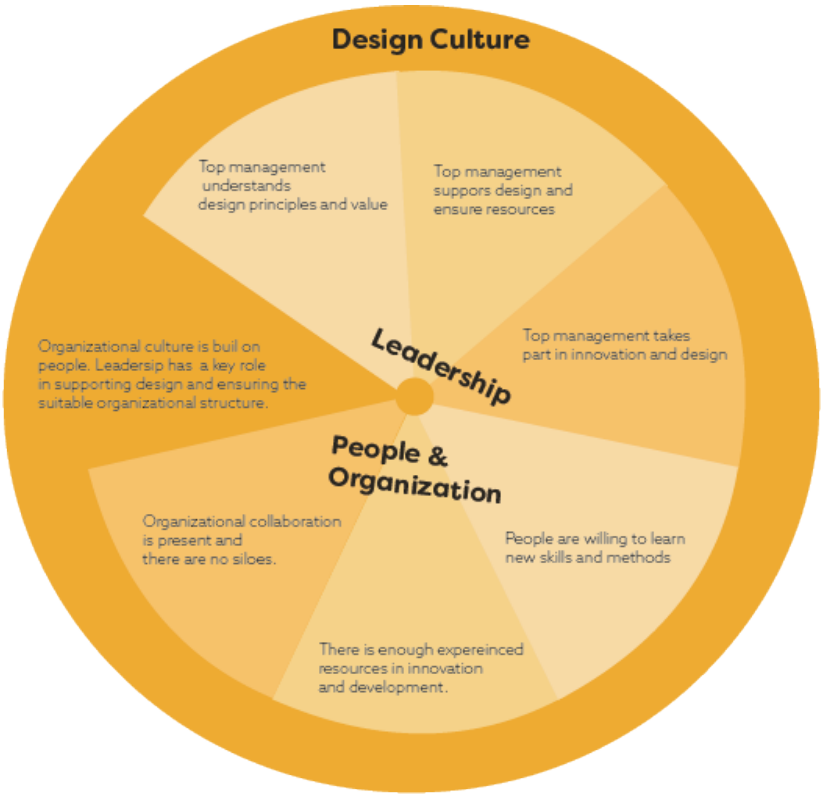
Upcoming chapters will further examine the discoveries in the various stages and parts of the diamond, beginning with the most discussed factors in the interviews of organizational culture and the leadership as a basis for succeeding in building design culture.

4 CULTURE AND ORGANIZATIONS MATURITY

4.1 Design culture

Design thinking and human-centric design are wide concepts. As noted earlier in the study: design thinking is, at the same time, strategy, culture, process, and methodology. Elsbach and Stigliani (2018,6–7) have studied the relationship of culture and design tools. They found that there is a link between the culture and usage of design tools. Not only is using design methods changing organizational culture but also existing organizational culture can help or prevent integrating design. Organizational culture that is defined by productivity, performance, and siloed specialization prevents usage of design tools. Their findings suggests that causality runs in both directions.

Causality is also evident in the interviews. Findings are divided into three themes that emerged: culture, leadership, and people and organization. Themes are discussed separately in chapters 4,5 and 6.



Picture 6 Design culture elements

As described in Picture 6 All three topics are interdependent and as such are the factors that build both culture and maturity in the organizations and the design process itself. But since culture is the starting point for change, it is important to be cognizant of current organizational culture. In the study a link between design projects, capabilities and resources and leadership as a two-way factor in building design culture was discovered.

Design as a discipline is nothing new, but in many organizations design thinking is a new kind of approach to solving problems and organizational maturity in design is not very high. Integrating design can be lead as any organizational change. That's why many of the barriers are in fact leadership and change management related issues. Leaders and top management decide strategy, priorities, and resources. The top management's commitment and support is crucial for succeeding. If there is lack of support, it is almost impossible to succeed in implementing design for the entire organization and as a result design projects remain fragmented and at the stage of individual experimentation. Each interviewee talked about leadership and as a single factor, it has the greatest significance for success or failure in building design culture.

The culture of an organization is built around people, so integrating design also needs competence in personal level to build the organizational capabilities. In many cases interviewees discussed not getting enough support from the top management. This usually accumulated in the actual doing as a lack of time and resources as well as cutting corners in the development process. This effects in the change altogether and possibilities for integrating design are low.

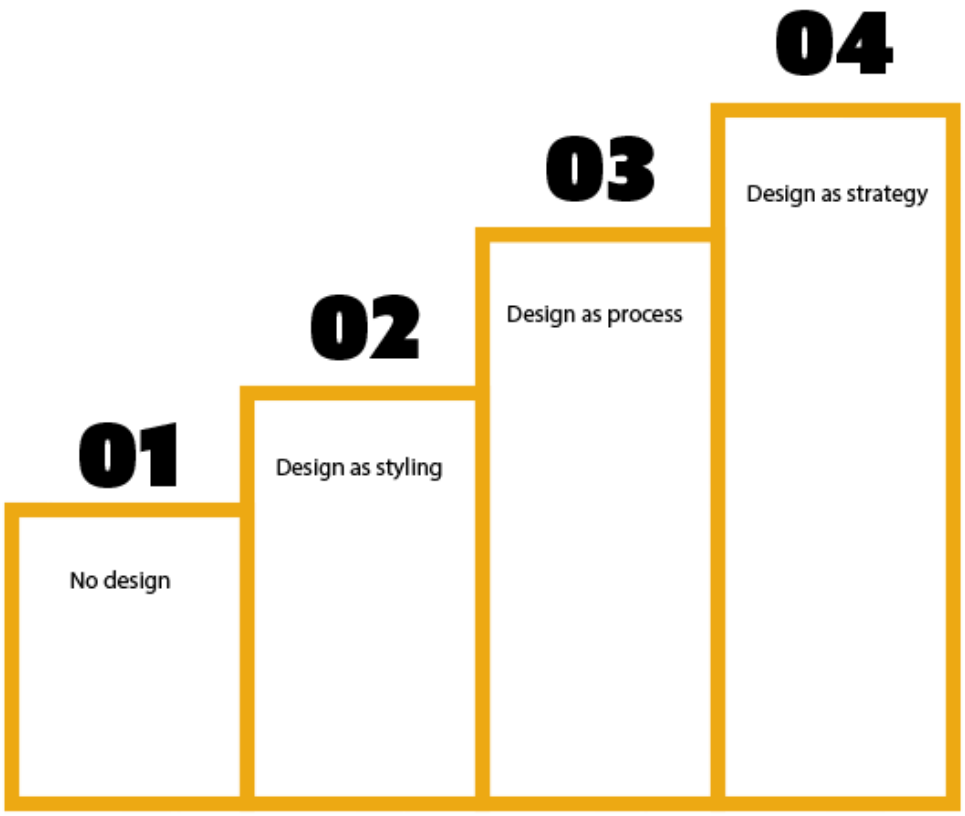
These matters are discussed in the study more thoroughly in the further chapters. This chapter focuses on the organizational culture and maturity in the perspective of the interviewees. However, the reader should note that there is a connection between an organization's culture, design practices, and leadership so it is impossible to discuss the culture without discussing the other two.

4.2 Design Ladders as a maturity framework

There are different specifications for design maturity. In this study Danish Design Ladders and Design Management Ladders are used to give overall glance at how much an organization uses design. The higher the maturity in the ladder are the more strategic design approach is and the culture is built more on design thinking. In the research was

used two set of ladder frameworks. During the interviews the framework was changed from Danish Design Ladders to Design Management Ladders because Design Management Ladders is visually more informative.

Danish Design Center has developed the Design Ladder model (Picture 7) in 2001 for illustrating the how different organizations use design in their business. The first two steps have design as an addon to business. Two higher has design to structure organizations. Ladder is based on Danish research that found the correlation between strategic design and business revenue. (Danish Design Centre, 2001)

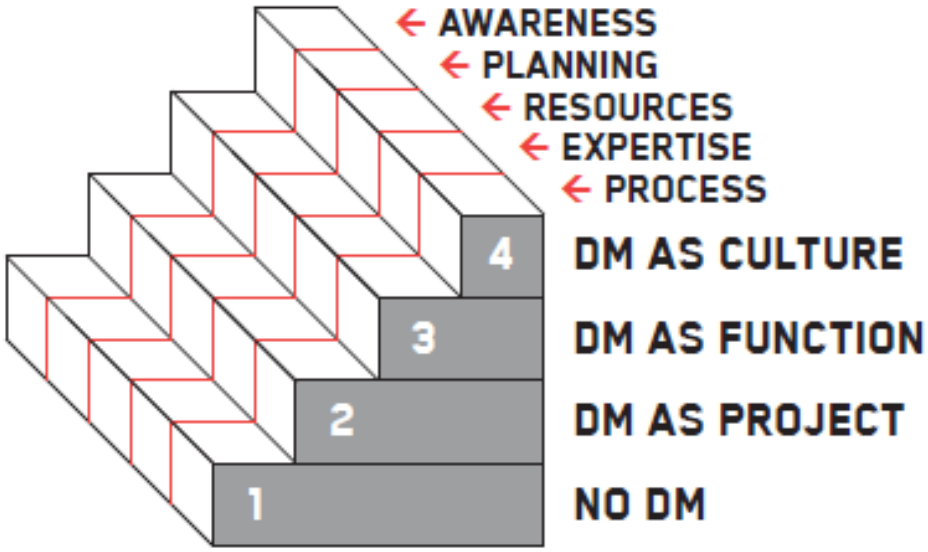


Picture 7 Redrawn picture based on Danish Design Ladders (Danish Design Centre 2001)

Koostra (2009,9) found in his study that in creative and business realms there are different cultures and values in operating. If management is missing competence methods and focus or comprehension on using design as a business tool, the full potential of design efforts is not utilized. Design management focuses to connect design

and business, because organizations, which use design fully are more innovative, profitable and grow faster than companies that do not.

In the study Koostra also presents Design Management Ladders (Picture 8) which are similar to the Danish Design Ladders, but visually more detailed. All the ladders are defined with five factors. The Design Management Ladders also focuses on design management and not the use of design.



Picture 8 Design Management Ladders (Koostra, 2019,12)

In the Table 1 below is a comparison between the two different staircase model in brief. These staircase models were in use in the study interviews for understanding what the maturity of design culture in the organizations is int the view of the designer.

Table 1 Design maturity explained (Danish Design Center, 2001; Koostra, 2009,3)

Level	Danish Design Ladders	Design management staircase Model
Step 1 / Level 1 Non-design / No Design management (later DM)	Design plays an invisible role in product design. Usually not involved professional designers	Business does not use design management.

(Continue)

Level	Danish Design Ladders	Design management staircase Model
Step 2 / Level 2 Design as form-giving / DM as a project	Design is focusing on the end product. Can be done by professional designers.	Design management is limited to direct business needs as marketing tool. It is not used in innovation.
Step 3/Level 3 Design as a process/ DM as a function	Design is seen as a way of doing and not just end product. Solutions are driven by problems and customer insight.	Business has started to recognize design as a tool for innovation and it is integrated into the development process.
Step 4 / Level 4 Design as a strategy / Design as a culture	The designer works in top management and rethinks the business concept and visions.	Business is design driven and design is part of differentiation strategy.

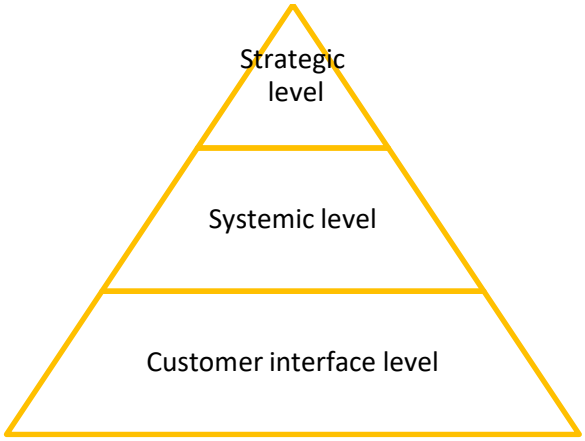
As can be seen there are similarities between the models' levels three and four. In the level three organizations start to see design as a tool that it can be integrated into different development projects to solve problems with customers in focus. The level four is strategic level where design is in the core of the organization's strategy and culture.

4.3 The role of the design and how it is understood in organizations

None of the interviewees described the organizations to be in the first step, which was to be expected as all interviewers were working on customer-driven development or design. But in some cases, when discussing the maturity of the organization and how design is understood and done in the organizations, it seemed that the maturity remained low. In couple of the cases organizational maturity appeared to be in first level or step one even if there had been efforts to change that. This is because the effort was mainly by one or two individuals and other people in the organizations were not committed to design.

Koivisto, Säynäjäkangas & Forsberg (2019, 55–56) describe how service design can be used in different levels (Picture 9). Strategic level means using service design in creating vision, targets, and guidelines for achieving a competitive advantage. Systemic level

mean creating standards and guidelines for developing services and the customer experience and customer interface level mean individual service development.



Picture 9 Redrawn picture based on Design Usage Levels (Koivisto et al. 2019, 55)

If Koivisto et al. description is used for determining the level of service design, in many cases service design is started at the level of the customer interface and the design often remained as individual development projects. In these projects, the link to the goals of the entire organization was somewhat remote. A few companies, on the other hand, had clearly started to define and implement change at the strategic level. In this way, development projects in the customer interface can be linked into the strategy. Also, there will be shared understanding what is the aim in implementing design and what it means in practice.

The barrier what designers usually face is that design and customer centricity are vague, and people have many ways to understand the terminology and meaning. Some of the interviewees describe that design or customer-centricity is not fully understood in top management and inside the organizations or there are too many different definitions for it. There also was discussion that there is not a shared understanding about the objective and the value of design.

> Very often, in fact, it feels like design thinking and the term that it has to do with it, whether it is about service design or conceptualization, or wherever, everyone understands in a really different way. (Interviewee 6)

Succeeding in design implementation is highly unlikely if the importance of differentiation is not understood or valued or company do not truly believe the value of design. In these cases, design efforts are fragmented and there is no clearly defined process. This leads to the fact that results are inconsistent. (Koostra, 2009, 12).

Some interviewed said that design is not seen as “actual work”. This factor was discussed in multiple different perspectives. The implementation of the design had not been managed as a change, but the implementation and training had been “left” to individual designers without a clear link to the strategy. In other words, design had not been raised as a major issue in the organization even though results were expected. According to the analysis, this is because the management does not have shared vision and because of that they are not fully committed in design thinking. This is even when the customer-centricity or design are written in the strategy.

> So, they just didn’t want to give the time and resources, because there were other priorities out there. Although this was brought to the core of the strategy and design unit was set up. I think it’s because management didn’t just understand what service design is and what it takes when done properly. (Interviewee 3)

Interviewees described the challenges of getting participants into workshops and projects, because the projects were not seen as real work but as light fun. They had even run into contempt for their work. They said they encountered comments like “this is just full of hot air” and “we have actual work to do“ these were mostly the comments from the ones who did not want to participate in workshops.

> He said: "Yes, development work like that, it must be nice and fun.” Then I thought you probably have never done development if you think it is fun. (Interviewee 7)

Rauth, Carlgren, & Elmquist (2014,50) also found that in some organizations design-thinking is not found serious enough because the “fun” element of the process of learning and creating wild ideas for solution. But there is a value in the odd ideas, alternative perspectives, and the process of learning, unfortunately it is not always possible to measure at the moment.

There were different examples too where design started from the top management. In these cases, the interviewed designers started from the cultural maturity of first ladder of the staircase, but the change begun with the strategy work and implementation plan. This way the organization has vision, target, and guidelines for design implementation.

In these organizations designers were hired to develop the design culture, build the capabilities, and participate the design projects. They felt that support from the top management was high. This support from top management was seen as a key issue in succeeding or failing. There is more about this topic in chapter 5.3 Support from top management. In the interviews there were two organizations which started with strategy work and implantation planning. Interviewee 1 described it as follow:

> I think it was great that design implementation was started at such a strategic level when nothing has been done here before. Instead of starting for example as a small-scale student pilot project somewhere. Now we started at the level of strategy, and I think it's great because this is a strategic matter and not any "put a little nicer color on the wall" -thing. Everything goes better with the customer experience because, design and strategy affects everything about how a business is done if done properly. (Interviewee 1)

All the organizations had customer-centricity or design in their strategies at some part, but the difference was in the execution. Friction between design and other priorities were high if there was low commitment in top management.

The interviewee 1 was the only one who said their organization to be on the fourth stair of Danish Design Ladders (Design as strategy). This was because the organization started with the strategy work. Since the integration had just started the organizational maturity was actually lower. Limitations in Danish Design Ladder -model was noted during the first interview. Ladders are not self-explanatory and for this reason Design Management Ladders was taken into use in the research. Design management ladders give more wider perspective to the matter. If one combines Koivisto et al. leveling with the ladders one could say that interviewee 1 started to develop from the top of the pyramid (Picture 9), but cultural maturity at that point started from step one.

In all the rest of the interviews the maturity was discussed with Design Management Ladders and all the interviewees described their organizations maturity as something between project and a function (steps 2 and 3). During the discussion and how interviewee 1 described their design implementation and culture the actual step would also be 2 in the Design Management Ladders. The analysis of study suggests that there were not many of the organizations higher than step two, since there were not a lot of principles and structure in the organizations for design. The organizational culture was also in the level of using design as developing more individual services. The progress is slow, but ongoing in all the organizations.

4.4 Culture is built on people

Building a design culture requires effort. It requires shared understanding about the value and purpose. Design is not just about the visuals, but research and interactive development for planning and executing customer experiences. Creating a design led culture needs training and mentorship across the organization as well as involving people and building cross-functional project teams. (Adobe and Forrester, 2016, 4-5, 8).

As one can see getting into the fourth step requires going through all other steps as well. It was discussed in the interviews and noted that organization cannot skip a ladder, since it takes time and effort to build capabilities and culture in the organization. Designers tried to be patient because they understood that even the smallest steps promote the change.

> I also must remind myself all the time that we are at the very beginning of this change, that even if we just make a descriptions of customer persons and talk about the need of customers, it is really much more than what we did before. We are moving further one step at a time (Interviewee 1).

Organizational capabilities in design are also important for building a culture. There are different roles in the organization and different roles require different level of knowledge in design. Björklund et al. (2020,106) found in their research that integration is successful if there is co-evolution between deep design expertise and widespread support and understanding of design efforts.

> Service design became a buzzword at some point throughout the country. So people from different areas of the organization were sent to small service design courses. At the time, it was thought that, in a way, it would somehow be enough to get this customer-driven approach set in motion. However, there was lack of understanding, because design maturity in general is still pretty low in our organization. There was not understanding of the different roles and capabilities needed in the organization and that of becoming a service designer doesn't come with a two-day course. (Interviewee 2)

There is more information about people, organizational structures and design capabilities in chapter 6 People and Processes.

4.5 Value and metrics of design

One obstacle in using design to build competitive advantage is that the value is not fully understood in the organizations. The reason organizations invest in design is because design is enhancing innovation. And, because by design organizations can differentiate their services and products and possibly even open new markets. Design is also used in Strengthening branding, expressing the company's values, and raising awareness. (Design Council, 2014, 6)

It is found that the organizations where organizational culture is built to emphasize numbers and efficiency, tend to have more resistance once embedding design-thinking. The tension is between cultural approach to failure and, experimenting and uncertainty,

which are more acceptable in design thinking culture. (Rauth et al., 2014, 50, 55.) Differences in the business approach and creative approach can cause tensions inside the organizations if there is lack of design management to bring these two objectives together. (Koostra, 2009,9).

Organizations don't have objective ways to set targets for the outputs of design teams (Sheppard, et al., 2018). Measuring the value of design thinking is somewhat challenging, even if successful product is being developed it is hard to trace back to design process and isolate design contribution to the success, since it is always part of larger context (Rauth et al., 2014, 51; Whicher et al., 2011, 51). If there is no link between the business and design the leaders are unwilling to give resources for development and design (Sheppard et al., 2018).

Organizations often want to build innovative culture and leaders hope their employees emphasize innovation and experimenting. But the problem is that the structure is not supportive, because measuring success and rewarding programs are not in line with creativity but more in line with the performance and fault-free work. (Martins & Terblanche, 2003, 69-74).

There is also a hidden pitfall in requiring design to demonstrate its contribution. The greater the demand is to have in advance through detailed analysis, the more conservative the approach, which degrades performance of the design. (Design Council, 2016, 6,11,20). Even when there is evidence of design value for business performance, the role of design is somewhat isolated and therefore it remains as a subject to skepticism (Whicher et al., 2011, 51). If design value is constantly questioned it creates friction in the process and the impact will be lower. (Design Council, 2016, 6,11,20).

> This shows the deepest essence of quarterly management. Everything has to be predictable before we start doing anything, we need to know in advance what we are going to do, how much it will cost and how much it will bring us. And this is really a really difficult thing, given the nature of the design. (Interviewee 6)

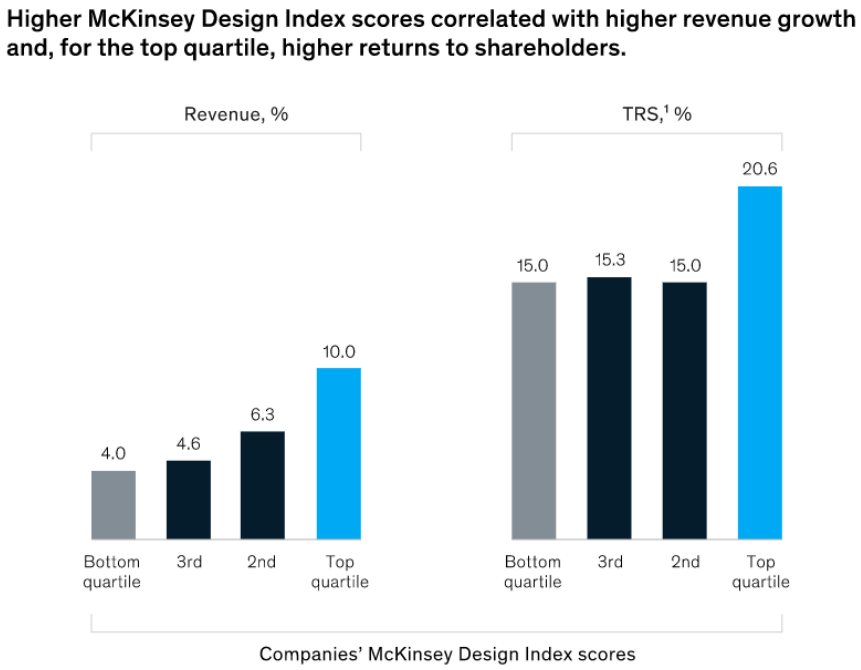
Interviewee 6 describes the situation where design efforts are easily destroyed by forcing a strict definition in advance. This removes the core of design, i.e., learning, iteration, and redefinition. In this case, the configurations are locked too strictly from the beginning based on assumptions that have not been validated. The result is often slowness, increased costs and a service that does not meet the customer's need.

In some part designers have not been active in linking design metrics with business goals (Sheppard et al., 2018). But also, common definitions and parameters for design discipline are missing as are commonly available measures and indicators. There is a need for measurement and adding value in individual organizations will have effect in the design discipline altogether. (Whicher et al., 2011,51). The results of the research in this study support the results of previous studies in the importance to find the right metrics and indicators. It is important that designers actively develop suitable metrics for design and report the link with their designs to business performance. This would be crucial for top management and business unit leaders to understand the value of design.

As mentioned before, interviewees did not raise design specific metrics that helps designers to link design and business performance. There were metrics like Net Promoter Score in use but defining the design factor in that kind of metric is difficult. Interviewees spent quite a lot of time justifying the benefits of design. A demand for metrics among designers exists, but designers struggle with finding the right ones.

> With some people, I've had to spend more time reassuring them that "hey, that's a good thing, and this affects the end result, because we're doing better." We should be thinking about the scope, and then we need to have such metrics as to what benefits this will bring, but we need to measure the right things. (Interviewee 9).

There is evidence between growth and design but also about intangible benefits such as brand awareness and improved recognition (Design Council, 2014, 6,11). The impact of design can be measured in the higher level. Consultant organization McKinsey has developed a McKinsey Design Index (MDI) which aims to demonstrate the importance of design intensity for competitiveness. McKinsey followed 300 listed companies for five years and found that companies that had received good MDI scores had also performed excellently from a business standpoint. The metrics highlight analytical management, the utilization of multidisciplinary teams, the user experience of concentration, and continuous iteration as the most important factors in the design intensity of companies. The Picture 10 Growth rate and the shareholder returns of the high design organization (Sheppard et al., 2018) below shows that growth of the organizations which performed high in the MDI is higher. (Sheppard et al., 2018)



Picture 10 Growth rate and the shareholder returns of the high design organization (Sheppard et al., 2018)

Problem with these kind of universal metrics and examples is that they are not relatable. There can always be excuses like “the organization operates in different field” or “they are bigger and have more resources”. Interviewees said that the best examples are inside the organization.

> People need concrete examples that they can identify with. The more they are within our own organization the better. It is useless to talk about the internal customer experience that their administration offers, in some other organization, such as DHL, because it is difficult to identify with it. If I have examples of our own organization or a service, they have experienced and I can explain how it is done, then the answer for doing the process is usually “OK, let’s try that” (Interviewee 1).

Some successful design projects are needed for getting to this point. Many interviewees said that after people had participated and had good experiences in design processes, they started to volunteer to be messengers in design process. This helps designers to embed design into the organization.

> Understanding will probably emerge as you begin to design according to the process. This is a new approach and participants may think this will bring more work. Yes, it makes it momentary, although outcome is that development makes work easier. The best thing is when after the project someone says, "we can tell others that this was really good" (interviewee 7)

Most of the interviewees found the metrics to be important for managing design and measuring the impact but also how much design is utilized in the development work could be useful.

> It would be a good idea to measure our customer focus in some way, even seemingly, by how much we have in customer decision-making or how many projects are done according to the service design process with the participation of customers. (Interviewee 5).

The development of a measurement system and the selection of the right indicators were considered challenging. Some organizations measured for example customer experience, but as mentioned earlier, it is hard to point out the value that design has brought to the experience or product design.

Measurement is often not aligned with customer focus and metrics tend to guide leaders into making decisions without considering customer impact. Many companies are measuring customer satisfaction and retention, but key performance indicators should include more indicators for understanding the depth of the customer relationships and brand over time. These could be such as customer lifetime value, real-time customer satisfaction by segment, and “leaky bucket” ratios. (Kilian., Sarrazin, & Yeon 2015, 2–3)

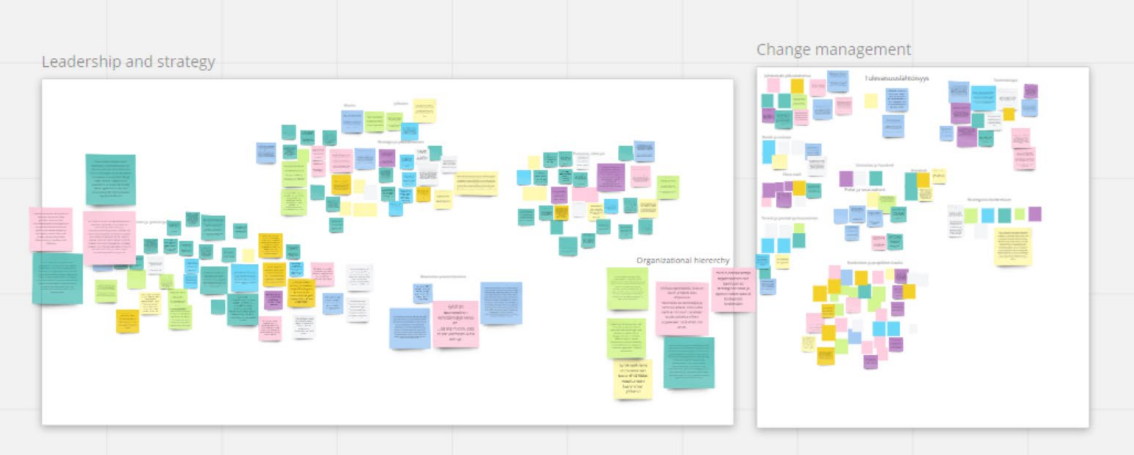
Osterwalder (2021a) suggests that for measuring organizations readiness for innovation the scorecard should have leadership, organizational design, and innovation practice. There are three simple indicators for design readiness: How much time CEO and Board of Directors spent in innovation, where is innovation in the organization and how do you practice innovation most of all: what is the kill ratio. Kill ratio means the number of ideas, prototypes and solutions that are rejected during the innovation process. Higher kill ratio leads to more focused investments because the outcome is built to meet the market needs.

There is not a simple way to develop metrics for design. There could be indicators about the progress of change for example in the first step or there could be more functional indicators such as how many customers were involved in the process and that process involves prototyping. There are examples of the metrics that can be used such as number of terminated ideas, number of customer interviews and so on. Designers should discuss this in the organizations and choose metrics that supports the vision and target.

5 LEADERSHIP AND STRATEGY

5.1 Leadership prevents or enables success

In the interviews the most discussed topic was leadership. Leadership was the single most significant thing that can either prevent or enable success in design thinking. In the analysis phase the leadership, strategy, and change management category had 266 entries (Picture 11 Miro analysis leadership and change management). There were supportive top management and leaders who encouraged designers and supported change. There were organizations where top management was not committed to design. Because this study is about the obstacles the topic in this chapter is discussed in negative point of view.



Picture 11 Miro analysis leadership and change management

Six from nine interviewees discussed that the biggest barrier was the leadership. Four interviewees said that they get enough support from the top management and management acted as sponsor and enabler for change. One of the four discussed two different organizations: one where person had support and one where there was none.

> I see it as critical, very critical, that the leader spoke in favor of this approach. If this person hadn't been there as a backup and created that state of mind, then it would have been impossible. (Interviewee 7)

What organizations had in common was that gave most support for design was the shared understanding of the value and goal. Also, there were a "spokesperson" inside the management team, someone who owns the design and development process. All

the interviewees highlighted that this is very important even if the person is not familiar with design practices. The importance of the owner is high, and the mandate of the owner is also relevant. The CEO is the best advocate there could be.

Design thinking and human-centric design challenges leadership. Madsbjerg and Rasmussen (2014,160–161) explain two leadership roles: decision makers and sense makers. Decision makers analyze and solve problems with common linear problem-solving style using quantitative methods. Sensemaking leadership requires different approach; leader is the creator who looks forward to finding new possibilities and meanings. Madsbjerg and Rasmussen point out that sensemaking leaders are constantly connected with information and they have a sense on the connections, patterns, and cause-and-effect relationship.

Oakley discusses differences between traditional management role and design management. There are some similarities with decision makers and sense makers as can be seen in Table 2 Differences between decision makers, sense makers, traditional manager, and design manager (Madsbjerg & Rasmussen, 2014, 162; Oakley,1984, 80) below. The interviewees did not analyze the status of leadership roles as presented in the table, but since leadership and lack of design skills in the management teams were in discussion It is informative to present these key differences in approaches to information and decision making.

Table 2 Differences between decision makers, sense makers, traditional manager, and design manager (Madsbjerg & Rasmussen, 2014, 162; Oakley,1984, 80)

Aspect of Leadership	**Leaders as decision makers**	**Leaders as sensemakers**	**Traditional manager**	**The design manager**
Primary role	Make timely and informed decisions	Discover future direction	Standard operating procedures guide decisions	Decisions augmented by environmental and other inputs
Nature of effort	Evidence-based	Judgement-based	Task oriented, Action oriented, keeps physically busy	Goal oriented, Combines periods of reflection with action.

(Continue)

Aspect of Leadership	Leaders as decision makers	Leaders as sensemakers	Traditional manager	The design manager
Primary skills needed	Analytical skills	Synthesis skills	Technical and analytical skills emphasized	Skills needed to deal with ambiguity, complexity, and conflict
Relationship to phenomena	Detached from phenomena	Absorbed in the phenomena	Inward perception emphasizes internal, issues, competition	Inward/Outward perception includes societal problems
Role of Data	Data gives clear answer	Data can be conflicting	Individualist approach to problem solving	Interdisciplinary team approach to complex problem-solving

Leading with design requires leadership that encourages employees to take responsibility for development. Traditionally leaders have offered a solution to organizations problems. This kind of approach is no longer valid, but instead leaders should be curious and encourage curiosity and questioning in the organization. (Maula & Maula, 2019, 233-234; Tidd & Bessant, 2013, 111). Instead of telling people how they should work leaders should listen and give people opportunities to work more flexible (Maula & Maula, 2019, 239). When it comes to leading design and listening to customers as pointed it requires a certain kind of leadership and letting go of traditional way of setting priorities.

Design thinking is sensemaking and leading requires abilities such as asking the right questions, see the patterns in the data, make the right interpretations and shaping interpretations into action (Madsbjerg and Rasmussen, 2014 164). In practice this means that leaders and managers cannot isolate themselves from design and innovation.

Alex Osterwalder in the Oslo Business Forum 2021 gave three indicators of readiness to build innovation culture. Two of these are straight forward to c-level leadership and CEO:

- How much time does the CEO spend on innovation, and how much time was spent on innovation in the last several board of directors' meetings? A CEO should spend 20-40 percent of his or her time on innovation.
- Where does innovation live on your org chart? There cannot be too many layers between those responsible for innovation and the CEO. (Osterwalder, 2021a)

Leaders hold the keys for the successful change in organizations. They give the authority and credibility for change. They give their support for the organization and at the same time demonstrate that they are personally committed to the change. If the innovation does not live at the top, innovation does not happen in large scale (Osterwalder 2021b).

Madsbjerg & Rasmussen (2014,159) discuss the meaning of leadership in the context of organizational culture. They claim that background of people does not matter and also designers or anthropologists will adapt to the organizational ways of doing, if proper leadership is missing. To get the best out of human-sciences is to connect customer insight with business context.

Organizational culture and leadership are tightly intertwined. Both shape each other, but leadership and non-leadership have an impact on direction where culture is heading. Management shows the direction and goals with its own activities meaning for example guidelines and priorities. Based on the interviews, the top management teams could be divided into two groups according how their behavior and knowledge support building design culture and strategy (Table 3 How leadership supports design culture).

Table 3 How leadership supports design culture

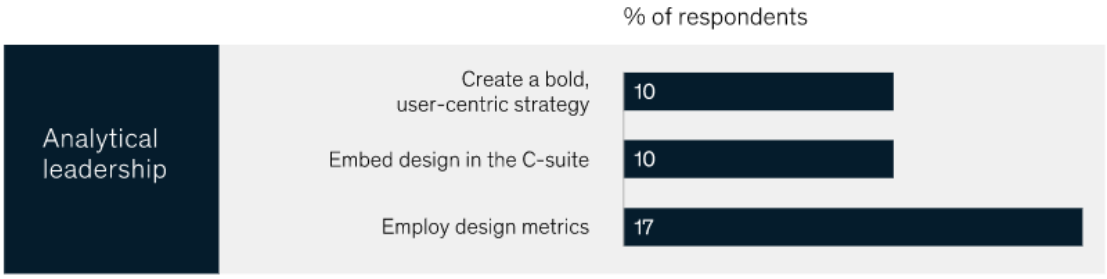
Developing design culture	**Non-developing design culture**
Top management actively supporting design thinking	Top management not committed to design
Active sponsor in top management. In best case CEO,	There is no dedicated person nor sponsor in top management
Design implementation starts with the strategy and shared vision.	Customer centricity is not in strategy/is in the strategy, but it is fully understood what it means
Top management participates in development and integrating	Top management do not participate, and they expect designer to do the implementation as well as projects.
There is a plan for building capability	No plan for education and capability building
Ensure adequate resources.	No resources provided

When design is seen as a strategy and culture there needs to be three elements:

1. The presence of a sponsor among senior management
2. The leading role of designer in an organization for influencing and educating, especially the decisionmakers.
3. Documentation and metrics are in place and reflection of the process success is done. (Design council, 2014, 6-7).

The organizations that are found to perform the best in design are the once which understand that it is a top management issue. In these organizations the performance of design is tracked the same way as revenue and costs. (Sheppard et al., 2018) On the other hand; if top management does not understand the potential and benefits of design, it forms an obstacle in the design process and implementation (Koostra, 2009,14).

Sheppard et al. (2018) in their study find that the top one single weakness in organization responses indicated three things according to leadership. These are almost the same that requirements presented above by Design Council. All the weaknesses found are also present in the study: metrics are missing (Chapter 4.5 Value and metrics of design), the design is not fully embedded in top management, and although there might be design or customer-centricity in the strategy it is not top priority and not executed well. The last two parts are linked together.



Picture 12 Top three leadership weakness in design (Sheppard et al., 2018)

Killian et al. (2015, 3) discusses in their article that it is vital for design driven organization to have design and customer advocate on the senior management of the organizations in other words someone to bring customer-centricity into discussion when strategic decisions are being made. That person must ensure that customer's point of view is brought to business decisions and business goals. This was not the case in most of the

organizations. Customer centricity is not a side show in organizations, rather it is the core of existence and needs to be in discussion.

> There is no one in the management who owns a customer orientation and that is definitely one of the reasons for the challenges that we face. (interviewee 9).

There was found an interesting disagreement between utilizing customer understanding and doing business. It is as if customer understanding is something beyond the basic that is not considered when making tough business decisions. From the designers' point of view the customer perspective is the business perspective, and only by utilizing customer understanding will a competitive advantage be achieved. Customer focus is on the core of business.

> While it is said that the business unit is responsible for customer orientation, they are under so much pressure in that business that it is understandable that running the business is their number one. Whenever prioritization and decisions are made, the customer experience is not involved in any way. (Interviewee 5).

Rauth et al. (2014, 58) found that it is hard to find support and acceptance for design thinking in organizations, because top managers demand proof for the value. In the Chapter 4.5 Value and Metrics of Design was explained how premature requirement for evidence of success can harm the design process and the result can be failure. This paradox can lead to situation where managers do not drive change in the organization and send mixed signals into organization. In the words of John Kotter (1995), about the obstacles to change: “Perhaps worst of all are bosses who refuse to change and who make demands that are inconsistent with the overall effort”.

Integrating design into organization needs a change in mindset and one should remember some principles in change management. John Kotter in his article Leading Change: Why transformation Efforts Fail (1995) discusses not only that the active support from the CEO is important but next to the CEO to succeed in change, more senior leaders and other people from organization are needed in coalition to a shared commitment. The coalition, at the first phase, does not have to involve all the senior leaders, but it must be powerful enough. This team also needs a shared vision to picture the change for the organization.

If there is not a shared vision it will lead to inconsistent efforts and practices. People end up doing a lot of work, but the goals are not achieved.

> “When it is not determined that what it is it is our goal then everyone goes wherever they want” (interviewee 5)

According to the interviews, the biggest enabler, and the biggest barrier for succeeding in change management and integrating design thinking into organizations seems to be the leadership. All the interviewees discussed how important it is that the top leaders to understand what design is about and the value, but also the effort that is needed in integrating design and in design project. In addition to this it is important that leaders lead the change, support, and prioritize design efforts and mandate designers into making decisions. All of this is only possible if design is embedded to top management.

5.2 Shared understanding and purpose of design

The change in the organization begins with embedding design into top-management and this requires recognizing the value of the design. Initially, terminology and concepts such as vision purpose and importance of design needs to be defined to ensure a mutual understanding.

In the interviews it was discussed that both design and customer orientation are terms that are understood differently in top management and among employees. In many cases, it was not clearly defined what they mean as a strategy and in practice. This issue was frequently raised in the discussions as an obstacle to the implementation of design.

The lack of a common understanding and vision was seen as a main reason why management was not fully committed to implementing the design. This was also evident to the employees of the organization, as the benefits and value of the design and the need for change were not communicated within the organization. As a result, everyone lacked a common vision of goals and policies. The lack of shared understanding was discussed a lot in the interviews.

> It's hard to get everyone to understand the same way. It is not enough that the boss understands in his own way and someone else in another way. We need to seek that common understanding where everyone understands what is being said and what it means. (Interviewee 4)

> Now, if we talk about top management, then I say that it may not be understood. It’s embedded in the strategy, but it’s not internalized, that’s what it really means in practice as well. (Interviewee 9)

> A new strategy has been made last year and it is precisely this customer orientation that has been mentioned, for example, but it is perhaps still unraveling what it means and there are very different views on the house. (Interviewee 2).

In some organizations top management understand their lack of expertise in design and human-centric development. The designers felt this was a sign of trust and support for their work. It shows a great leadership to admit that one doesn't know everything but is willing to use professional experts.

> My boss said it himself in the interview situation and it was in that job ad that they don't know anything about it yet. That's why they need someone who can show direction. I think it's rare and great to be open and say that I don't know. (Interviewee 1).

This kind of approach was common with the organizations which begun the change in involving designer into the strategy work. Leaders were open and willing to learn, and they gave the experts mandate to develop. It was also pointed out in the interviews that in these cases there were people in the management who had designers in their close circle or had good experience in design among their stakeholders. In these cases, the change process was designed carefully, and success seems more likely than in companies that do not recognize that the issue has not been understood.

Then there were situations where management actively talked about the customer and customer focus, but the actual actions were missing.

> The customer is very easy to understand, in other words, we understand that the customer is important and for the customers we exist. Our management has done a good job in recent years, and they have raised the importance of the customer and the level of thinking that the customer is important to everyone. BUT doing is missing. (Interviewee 6).

Interviewee 3 clarified that if management does not understand design, they cannot drive change nor provide sufficient resources for design projects.

> Engaging management and increasing managements knowledge in service design is vital. It cannot be properly embedded and resourced if it is not really understood what it even means. (Interviewee 3)

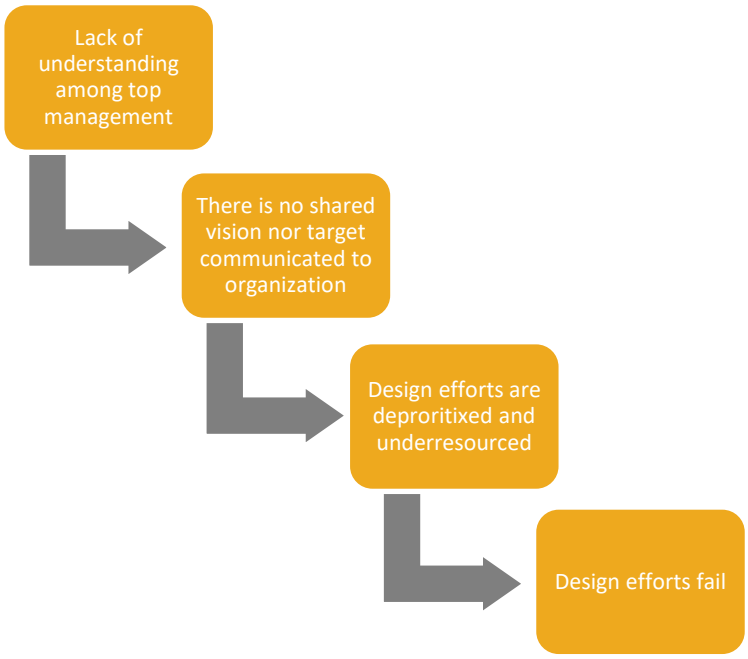
The lack of shared vision leads into the situation where design efforts are rather fragmented in the organizations and there is not clear process or metrics to track success. Some interviewees reported inconsistencies between speech and actions.

> Customer orientation came a bit from the outside. The consultant's comment on the strategy to management had been: "you have a pretty weird strategy when customers aren't mentioned anywhere". At that point, talking about customer orientation started to be a big deal in Finland. (Interviewee 3).

> Management talks about customer orientation and it reads there in strategy yes and that is it has been raised to be important, but then in a way there is a gap in

> the understanding of what it means in practice. For example, a manager will say that we are customer-oriented and on the other hand we do not have enough designers and customer understanding is not considered in decision making. (Interviewee 5)

Management cannot be committed to the customer centricity and design when the idea is not fully understood, and if they do not trust the process, it is highly unmotivating for designers. This could be described as following picture 13.



Picture 13 How lack of commitment leads to failure

In the worst case, a lack of understanding and a weak commitment to implementing the strategy can lead to the termination of the design. Sometimes this happens naturally, as in the case of the interviewee 3, when designers decided to resign and work for other organizations.

5.3 Support from top management

Implementing design thinking into organization requires design capabilities in all levels of organization. In practice support from the top management means ensuring resources and permission to make decisions. (Maula & Maula. 2019, 52.) For managers it can be hard to delegate responsibility of decision making to the team level (Rauth et al., 2014,

51). But commitment in top management ensures that design efforts are connected to business strategy (Maula & Maula. 2019, 52). An important factor in succeeding in implementation, is the level of management skills and understanding the benefits of design and customer orientation, and strategic commitment. (Alavuotunki et al. 2015, 37.)

As pointed out many times earlier common understanding about design and its value are crucial for successful implementation. Strategy, importance and priorities need to be communicated to the organization, otherwise design efforts will be deprioritized. This is demotivating for designers once they never fully know how much effort and resources they can use.

> It's important that management takes the concise message that "hey our strategic decision is that we want to reform a little bit of our company's way of doing business and development and now we're going down that line and I hope you're committed" But what's just as important is that the authors feel that they really have that time available. To avoid such contradictions that it is agreed between the team, that time will be used to conceptualize the services. But then the higher party will be communicating that it is not OK to use the time. Nothing kills motivation more effectively. (Interviewee 6).

Designers were quite confident that once they start to gain success in projects people will start to understand the benefits in utilizing design in business.

> Understanding will probably emerge as we begin with projects. At first, it's hard when you don't really know yet what to do and aim for. This is a new way of working, so it is easy to think that this will bring more work and that is what it will bring at first and for a moment. The result is that it makes the job easier. (Interviewee 7).

> I see my own role as such that I will enable a common direction to exist. In addition to that, we need support, tools, and methods to do so. (Interviewee 2).

The lack of leadership and commitment is, in some cases, reflected as the lack of operational powers and resources for designers. This, in turn, has a direct impact on design process and how committed the rest of the organization is to utilize design. If design is not led and design efforts are not supported, it will easily lead to individual projects and no significant impact will be achieved at the organizational level. (Björklund et al., 2020, 111-112).

Design as a method is introducing uncertainty to the process. Tidd & Bessant (2013, 110–111) discuss that accepting uncertainty and failure is in line with senior managements risk tolerance. For succeeding in innovation and design organizations should be prepared to risk and accept failure as opportunity. This is also seen in

rewarding programs that organizations have that are built on profit or efficiency. Martins & Terblanche (2003,71) states that personnel should also be rewarded for risk taking, experimenting, and generating ideas instead of being rewarded for fault-free work.

Interviewee 8 also talked about courage on acting with design. There is always a possibility that in challenging situations the old way of doing overrides the new way. This is because the values and norms guide behavior in organizations and if there is no room for mistakes personnel doesn't feel free to act innovatively (Martins & Terblanche, 2003, 72).

> The more volatility in business, the more we are forced to constantly adapt to change. In this case, design thinking is natural and important. But when reality strikes, volatility is also a greater opportunity to forget what we have just started and to focus on that core business. It's very much up to you whether you really have the courage to go and take the process even in a challenging situation. (Interviewee 6).

Companies which have design on a strategic level or as internal process are faster in developing new products. However, investment in design does not automatically bring success. To be successful organizations also need a well lead process and right skills. Many organizations are not using design as a systematic or strategic manner (Koostra, 2009, 10)

Lack of trust was one of root causes for the barriers found in the analysis. In many cases organizations did not trust the design process, so it was easy to deprioritize and fall back to old habits. There is an interest in using design to gain competitive advantage, but shared vision or understanding on what it means or requires in the practice, is missing. One might infer that in some cases design and customer centricity was just added to strategy because it is a trend.

The management team is responsible for developing the strategy in which design, and customer orientation have been introduced. The question is: Why are they not committed to implementing it? The short answer based on the interviews is the lack of management teams' expertise in design and no responsible advocate in organization. Because of that top management don't recognize that implementing design is a case of organizational change instead of using certain toolset.

According to Oakley (1984, 75) the on and off approach to design and innovation is because there is not the sense of urgency for change. For designers and innovators this shows as lot of talk but no action. This was found in the interviews also. Kotter (1995)

discusses the importance of sense of urgency for change. If there is none, the need for change remains unclear and it will be deprioritized.

In some instances, the management team did not recognize their behavior and lack of expertise. Inevitably in the cases where there no top management sponsor nor the shared understanding about design, there no possibility for the design to succeed. Based on this, it can be concluded that the change needs to start with leaders.

There were examples of the best-case scenarios. Some organizations included had top management fully committed to design and in these cases, designers felt very well supported which in turn made the design process smoother overall. Designers could reach out to top management for support when needed e.g., ensuring that right people and business units have time to participate in the process.

5.4 Implementing design

Integrating design can be more challenging than other organizational changes because of the nature of design. It is difficult to define the scope of the design since the design process is iterative and non-linear, and there is built in a constant reframing and abduction in the process. This is not compatible with most of the other organizational processes. (Björklund et al., 2020, 106). Linking design with business context and business problems requires ability to lead the process. Implementing just the method is only one part. (Madsbjerg & Rasmussen, 2014, 159).

There is correlation between people management and organizational performance. It is a challenge to build such an organization where innovative behavior can grow. (Tidd & Bessant, 2014 107–108). When organizations reach a certain maturity point, strategies become more defensive. For design this means more formal approach than adjusting to change. (Oakley, 1984, 76). Embedding design requires change in organizational culture and shift in the focus for experience delivering instead of mechanics. (Bailey, 2012, 1). It is found that the impact of design is higher when designers are involved throughout the process of new product or service development instead of seeing design as an independent organizational function with limited scope. (Design Council, 2014, 17.)

> Change management, engaging management, and increasing management understanding, and then also the understanding of service design that it can't be properly incorporated if it doesn't really understand what it even means. (Interviewee 3).

Building an innovative organization requires certain kind of components Table 3 below is from the Tidd & Bessant book Managing Innovation (2014, 108). In the interviews in this study most of these components are found to be missing partly, or completely. At some point, every interviewee discussed these matters.

Table 4 Components of the Innovative Organization (Tidd & Bessant, 2014, 108)

Component	Key features	Study section
Shared vision, leadership, and the will to innovate	Communicated and shared sense of purpose Stretching strategic intent Top management's commitment	Chapter 5
Appropriate structure	Organization which enables creativity, learning and interaction.	Chapter 6
Key individuals	Promoters, champions, gatekeepers and other roles to encourage innovation	Chapter 6
Effective team working	Appropriate use of teams to solve problems Requires investment in resources	Chapter 6
High involvement innovation	Participation organization-wide continuous improvement activity	Chapter 4, 5, 6
Creative climate	Positive approach to creative ideas	Chapter 4, 5
External focus	Customer orientation Extensive networking	Chapter 4.5.6

If an organization wants to adopt design thinking in a way that has an impact on the business, it needs a process for change. Tools and methods solely are not enough for design thinking, because it is a cultural change from organization-oriented to customer-oriented operations. (Koivisto et al. 2019, 163-164). Kotter (1995) argues that organizations often fail in leading change because they lack the sense of urgency. If

people don't feel the need for change if will not happen. For some reason, in the interviewed organizations, design was largely seen as tools or individual projects and not as a competitive operating culture. In most cases the change was left for designers to implement, and this led to schedule pressure on the designers 'own work and, on the other hand, that other participants did not see design as important.

All the designers thought they were change agents. Some of them had been hired to the organizations to be the first to drive change and they had mandate to do so, others considered it to be a part of the designer profession: because design concept was somewhat vague in these organizations, so designers were messengers in that. The latter struggled the most mainly, because they were alone in driving the change, in these cases there were not a spokesperson in management team.

> Our team is, as it were, a culture changer in how this agile development takes place and the specific goal of failure associated with it and how it is allowed. (Interviewee 8).

There were three organizations where the design implementation was considered as an organizational change process. In these cases, the top management had understood that implementing design is a strategic matter, which requires change management, principles, learning and metrics.

> We have the customer orientation written in our new strategy already, but implementation is a long process, and the strategy is for 5 years. We are still at the beginning, but there have been some good projects, but it has not yet cut through the entire organization. (Interviewee 9).

Design maturity was not very high in the organizations and participants had recognized that change process and implementing will take time and effort. As discussed earlier in the chapter designers also need a mandate for participating in change process as well as development and making decisions. The organizations that understand the value and the meaning of design for business are more likely to succeed in change.

If the top management is not committed to design and change management, it is more likely that they isolate themselves from the design and customers. In these cases, the design remained at the level of individual projects and experiments. Based on the discussions about designers' experiences in previous organizations the companies that were committed to design thinking and change management were more likely to succeed in implementing design.

6 PEOPLE AND PROCESSES

6.1 Design readiness and organizational structures

Design maturity in the point of how organizations use design is discussed earlier in section 4. Baileys (2012,34) research focuses on similar topic in which he discusses term design readiness in organizational change, i.e., the organizations' capacity to internalize design thinking and methods. Design readiness is not a static state of being, rather it evolves with the organization. For turning design readiness into action, it requires processes, methods, and structures.

The competition today requires more than one idea to solve business problems. To succeed leaders in the organizations must support innovation and provide the needed resources, permission to experiment and to learn. It is also important to connect with stakeholders inside and outside the organizations. This kind of culture supports open and agile development. (Design Council 2021).

The top performing organizations according to Sheppard et al. (2018) are those which can integrate design with other organizational functions and bring down organizational silos. Design thinking is built on collaboration, if people do not trust and respect each other, initiating creative collaboration becomes challenging. All the time wasted in selling design internally is out from creating value for customer. (Maula& Maula, 2019, 245).

> When you create such a concrete, holistic service path, it requires that customer needs are identified broadly enough. It is not enough to have just one department to tell you how to proceed. It is necessary to validate the whole that preferably 4 related parties are involved. At least two participants to tell me how it works and the third comments. (Interviewee 7).

It was found in the interviews that siloed organization slows down or even prevent design efforts and integrating design into organizations. If the vision and objective are clearly communicated and collaboration structure exists, separate business units do not create silos inside the organization. If the objectives of business units are inconsistent or contradictory, it is not clear who are allowed to make decisions during the process. This causes slowness and friction in the design process and therefore also affecting the level of success. Many of the interviewees spent a great amount of time educating and defending the value of the design for participants and for business unit leaders.

During the design processes, designers prefer to work in multidisciplinary teams across the organization. Otherwise, they tend not see a significant challenge between designer team and designers located in different units. The most important factor is that there are enough designers with suitable professional profiles, who will operate as an internal team or network and have sufficient decision-making power over the processes. However, what everyone want is a clear understanding where design is in an organization chart and who has the leadership responsibility for development, design, or customer orientation. In many cases, it was unclear to whom design unit reports to.

> But then there are the open questions: how does design fit into the organization and which sector should ideally have service designers? Ideally there would be few designers with different profiles, and they would form an internal network. Through design projects, that common model and common design thinking practices and its management would be shared. (Interviewee 2).

Design is found to be most influential when it is culturally embedded into organizations. In the best-case scenario designers are involved with the development process from beginning to end and design also shapes business strategy and decision. (Design Council, 2019; 5-6). The result is better when cross functional team has the ownership of their mission and the results (Maula & Maula, 2019, 245).

Friction in design process and other processes exist partly because of different operating cultures of the specialized teams and organizational siloes. Sometimes people do not recognize their own responsibility in creating collaboration between different business units. This leads to three situations:

1. The right people are not involved in the development process and workshops
2. The development is not done at all or only partially.
3. The service and customer experience are not holistic or do not fit the market.

In many cases interviewees discussed the friction in the design process.

> That is one of the challenges I face. People often explains to me why something cannot be done: “well yes, but it is the responsibility of another unit, or it is related to this, and that matter and it is not my responsibility.” Although it has been recognized that this affects the overall customer experience for which the person is responsible in total. (Interviewee 1)

Some research on design management takes a stand on how design should fit into organizations. For example, Björklund et al. (2020, 105-106) states that design driven organization is not build by creating a separate design unit into organization. This means that organizations cannot succeed in integrating design thinking if they are investing only

in design organization or deep design skills. Oakley (1984, 82) concurs and further argues that a separate design unit may cause an internal debate about whether design is important in relation to business objectives. The results of a design project may even be discarded because they come from the outside of the business units.

Oakley is talking about trust that reflects to design process. If there is no trust, steps are skipped over in design process one case can also be that the product is not brought to market because others question the result. Interviewee 3 described the problems in the process quite clearly.

> The projects went badly because organization didn't really want to make those changes. Participation in development sprints was poor because no one really believed in it. We in our own unit will not be able to develop those services without having the experts who do the service. They had a bit of a bad and indifferent attitude for design. It led to the fact that implementation was poor and since everyone has too much work nothing was really done and even if something was done, they were not used. (Interviewee 3)

Design is not an isolated function and deploying it requires organizations to build their design capabilities widely in all levels of organizations (Koostra, 2009, 9). Cultural distance between engineering, management and design is such that it requires investment in coevolution of design capabilities inside the organization for bringing operations together. Therefore, organizations should invest in both wide and deep capabilities. (Björklund et al., 2020, 105-106).

Alavuotunki et al. (2015, 37-38) found in their research that design expertise is somewhat siloed in the organizations. Organizations participating in the study felt that there should be more interaction between designers and business management. Björklund et al. (2020, 109) findings suggest that when design capability in organization is deep but not widely spread, designers may end up spending their time by “selling” the idea of design to business management instead doing the actual designing. This may also affect organizations willingness to use design approaches.

If organizations are expecting design to have influence in strategic decisions, it cannot be separated into individual function. (Björklund et al., 2020, 7). The top-performing organizations consider the full customer or user experience, and they break down organizational barriers between physical, digital, and service design (Sheppard et al., 2018).

> We are deep in our own silos. I come across quite a bit that "it's not our team's responsibility, it's not my problem to solve this." This is the way of thinking we are

> trying to change. To prefer to think that "OK that matter is their responsibility, it will be ensured that they get involved in this discussion because it will still affect the customer experience for which I am responsible" (Interviewee 1).

Most organizations which participated in the interviews had design as a separate function that did projects for different business units. Unit was, for example development and strategy function, marketing and branding or communication. This easily leads to the state that a lot of expectations are placed on design, but the responsibility for decision-making lies with someone else.

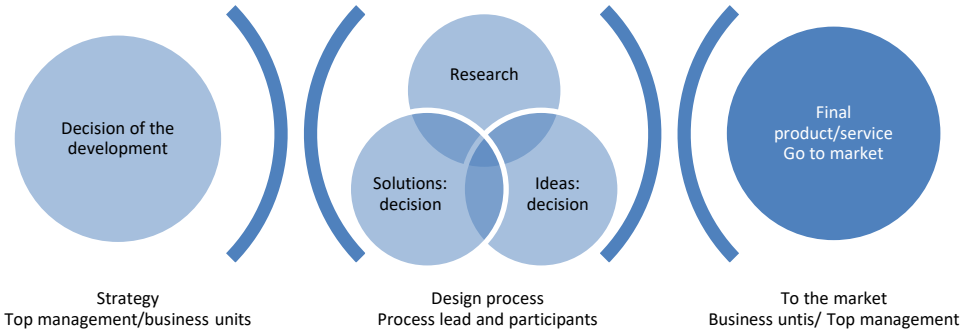
> We are close to it in our own teams and silos. There is no such thing as a common big picture of where we want to go and who our customer is. (Interviewee 2).

> This unit is a pretty good home base, but we don't have enough mandate to develop and do it. The management team has a strong idea that all businesses and all units are responsible for that customer experience. Then everyone does what they want and there is no unified line. (Interviewee 5).

The biggest obstacles that come from separating design into an independent unit are decision-making and prioritizing design. In a few cases, this was resolved so that during the projects, decision-making is with the project team and then the business unit decides on the way forward with the final product or service.

> The strategic level decides what needs to be developed. Then comes the developers who think about how that development process will be built and who will be involved in it along with the operational level. Then together we start to do development. (Interviewee 7).

Decision making process could be divided as following Picture 14 Example of decision-making process presents.



Picture 14 Example of decision-making process

Most importantly, decision-making is agreed on, and the responsible party is clearly defined in the organization. Essential to the work of designers is that they are allowed to make decisions about both progression and rejection during the development process. Otherwise, project completion will be slowed down or stopped altogether.

6.2 Design resources and expertise

Making sure that there are right people in the right place is important for design driven organization. (Killian et al. 2015, 3) When building design-driven organization there need to be coevolution of deep and wide capabilities in design. Deep expertise means the expertise in design practices for human and inquiry centered process. Wide capability means understanding the design process and practices as well as organizational structures and resources for design. (Björklund et al., 2020, 9).

> If we are talking about human resources now, then the fact that there are so few of us makes it difficult to scale up organization wide design thinking. (Interviewee 9)

A truly strategic approach to design requires designers to have access to teams across the different functions of organization. They should have the ability to bring insights and shared understanding; they can also be visionaries and collaborators. (Design council,

2014, 9). Killian et al. also discuss that designing capabilities should be build wider in the organization, and they suggest that designer could be the ones to bring together all functions in organization. (Killian et al. 2015, 3)

A study conducted by Finnish Ministry of Economic Affairs and Employment found, that one reason for not using design thinking is the lack of resources in the organizations. Case study interviews revealed that the obstacle in implementing design is organizations inability to adopt a new way thinking (Figure 1). This was evident especially in engineering-oriented technology companies where the starting point for development is what organization is capable to produce instead of focusing on customer's needs. (Alavuotinki et al., 2015, 36-37).

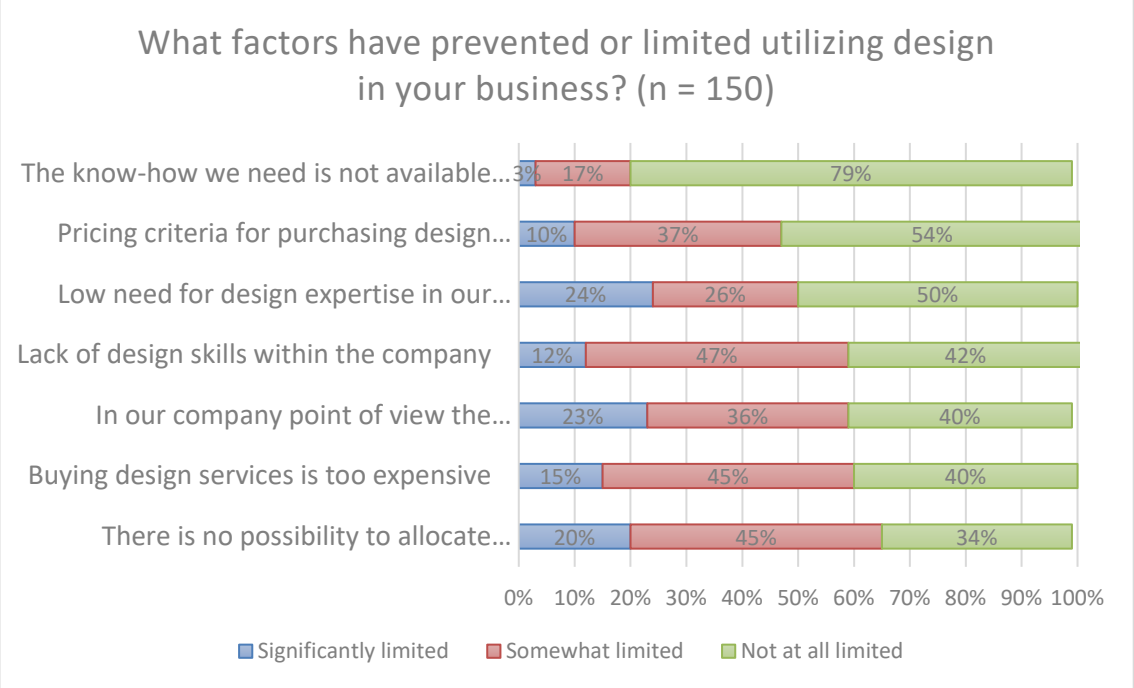


Figure 1 Translated figure based on: Factors effecting in utilizing design (Alavuotunki et. al., 2015,37).

Available resources are key to successfully completed customer-driven projects. Successful projects enhance the integration of design thinking in organizations. In many organizations this is an obstacle both with design and implementation. Maula & Maula (2019, 238-239) state that one obstacle to developing and leveraging an organization's creativity can be a workload that prevents employees from doing focused work.

If people are telling that they have "real work" they mean that innovation and their own work are competing (Kahan, 2013, 39). This topic has already been discussed in the

study in sections 4.3 from the perspective of the role of design and 5.2 from the perspective of common understanding. The challenge culminates in resourcing, as the challenge for designers is not only to use their own time, but also to get participants into projects. In the worst-case scenario, lack of resources prevents success altogether.

> We are so busy all the time that even if we want to develop, we will not succeed because there are not enough employees dedicated to it. (Interviewee 4).

In many cases, the scarcity of resources was also reflected in the fact that the implementers and planners of change are the same people who are expected to be actively involved in development projects in organizations as well. In discussions, it was often repeated that one or two people cannot do everything themselves.

> The team should be grown internally because one person isn't quite able to do terribly much at the same time. One is involved in projects and then as a leader throughout the implementation. There are problems with this due to lack of resources. (Interviewee 2).

> I have told supervisors that they must choose whether I do projects or whether I am in this capacity building when neither of them has time. (Interviewee 5).

This obstacle is linked to the top managements' understanding and commitment to the design. It was discussed in the section 5.3 that this can lead to deprioritization and under resourcing.

All participants discussed the problems of not having enough people doing design compared to expectations of the results and the amount of work. They discussed that management has not understood how much effort projects take not only from the designers' time but from specialists in the organization. This also influences the implementation whether there are enough people to take the service to the markets.

> Lack of resources or time is an obstacle. There is no time to listen to the customer or on the other there is no time or resources to implement what that customer said. We must consider if it is even possible to complete the project. (Interviewee 4)

Because innovation requires time, attention, and energy from the same people who are doing operative work, the innovation process should be built such way that ensures both the work and pursuing new growth. (Kahan, 2013, 39-40).

The problem with resources is not solely about the number of participants but also the fact that design needs certain kind of professionality. It requires certain kind of expertise in methodology and certain kind of mindset to understand why the iterative process is important. In 2016 Forrester report the expertise of the designer is also in discussion. In

some cases, organizations hire junior level designers. While this is good for the junior designers it might not be good for organizations and implementing design thinking, because juniors lack the experience, and they tend to be more tactical in their approach, so they need mentors and guidance.

> If we are talking about human resources, it is difficult to expand our thinking at the moment because there are so few of us who can do it. (Interviewee 9).

> This one workshop was planned and held by in-house professionals, and they are not designers, but all were substance experts. Also, all participants were substance experts. And it was not thought at all, that an expert in facilitation might also be needed for the workshop. (Interviewee 4).

Without adequate number of designers who have deep expertise in design practices, such as methods for research and prototyping, design is not scalable throughout the organization. Next to deep expertise, there need to be wider group of design thinkers who have a shared mindset to allow designers to do their best in development. (Björklund et al., 2020, 106-107)

> Management may not quite have the understanding that design requires deep expertise, but of course this also requires those eager people who have taken courses to know and know how to use design. Then they know how to ask us to join. (Interviewee 2)

Implementing design thinking is dependent on the organizations capability to use existing resources. Resources are the assets an organization have, and capability means the way those assets are used (Morelli et al., 2020, 4). Deep design expertise is necessary to get the most out of existing resources and to widen the expertise in an organization.

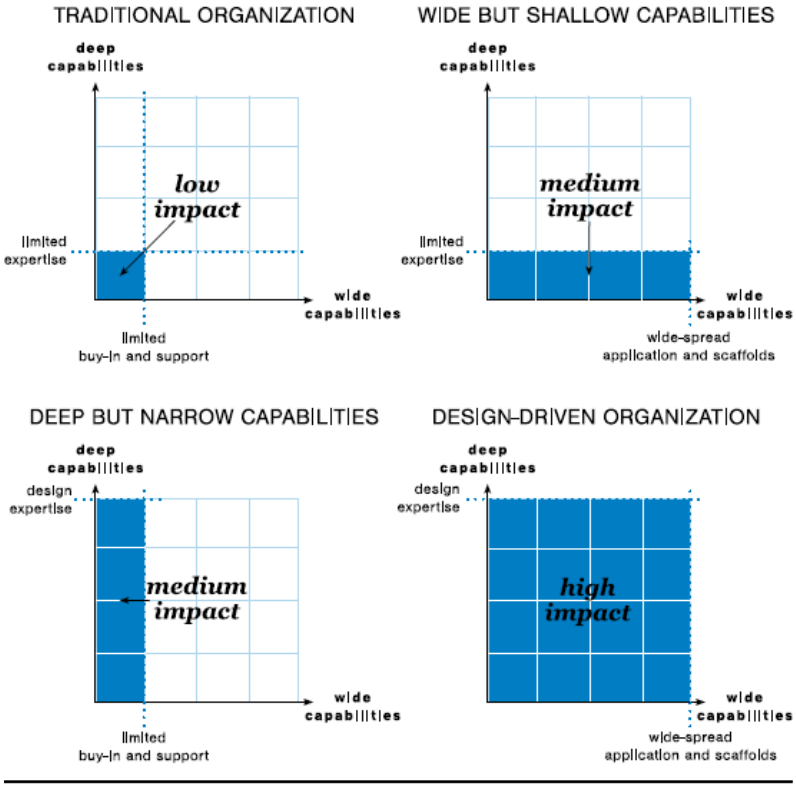
A great example about the importance of deep expertise and organizations maturity surfaced when one interviewee discussed that they had quite large development team that ended up being dismantled. The decision was due to the recognition that the organization was not yet ready to take full advantage of design and agile development, and the team did not have sufficient in-depth knowledge of design and agile methods. As the organization's design maturity was increased, they began to be rebuilt design team. This time, a decision was made to recruit expertise to the team from outside the organization. This had a significant impact on the efficiency with which projects were carried out.

> With this current significantly smaller team we will achieve so much more than having a larger team because the skills are in place. (Interviewee 8).

This underscores the importance of deep design expertise in design and development. With successful projects, the maturity of the organization also improves and the conditions for success increase. Therefore, when implementing the strategy, it is also worth considering how people's skills and organizational capabilities increase. Three of the organizations discussed in the interviews had a training plan as part of implementing the strategy.

> So far, we have invested a lot in developing the skills of individuals. We have had various online courses and trainings. They have all been good, but now I have realized that developing an individual's competence no longer takes our maturity forward or our organization toward the goal. Now we need to have the policies and structures that support doing it. (Interviewee 5).

Brjöklund et al. (2020) found that the impact of design remains lower when organization only has deep design skills or wide design skills Picture 15 below. Deep skills are needed for succeeding but designers need support and expertise from organization so that they can perform their best. One does not exist without another: deep design expertise is hard to achieve because designers work depends on the input of others. Design approaches also help others to be more effective in their work (Björklund et al., 2020, 106-107)



Picture 15 The effect of design investments at different level of deep and wide design capabilities. (Björklund et al., 2015, 107)

Wide capabilities mean shared understanding about the possibilities of design process in innovation and development. Individuals who understand the possibilities demand a model of people-centered development in their projects. In many cases this requires personal experiences in design processes, successful projects on the other hand are built on deep design capabilities (Björklund et al., 2020, 108).

In many cases designers were expected to build organizational capabilities in design. They trained within the organization also because the increase in understanding facilitates their work in the long run.

> I am expected to train more design thinking in the organization. That idea is excellent, but it's a pretty long way to go. If there were more of us then it would start to show more effectively in different projects. Sometimes, unfortunately, I have to say that it will not be possible, even if it is in line with the company's goals or strategy, for the customer orientation to be involved and the starting point in the planning phase. (Interviewee 9).

Many of the interviewees used design projects for implementing design thinking into the organization. They discussed that it is the best way to create understanding about design. They discussed that successful projects were a great way to convince people of the importance of design.

> We make some of the treasures of the archives visible. It's effective communication because things come to the attention of people who might not otherwise know they're doing it. (Interviewee 9).

Another significant issue that the interviews highlighted from the perspective of organizational learning was the actual design processes. Everyone shared the view that experience was the best way to internalize the way design works and its value. The same issue has been raised in Rauth et al (2014, 53–54,55) study. They discuss that one belief in integrating design thinking into organizations is that it cannot be learned and understood by lectures, rather it needs to be experienced. This can be done in workshops or have management take part in customer interviews.

> The eyes of the CEO and my supervisor opened in the two-week design sprint I pulled. Their understanding grew, especially because the results are good. Promoting design has been easier since then. (Interviewee 3).

Interviewees also had developed good practices to develop the process and that way learn more themselves as well as building the capabilities.

> We did a workshop with our experts and then we went through a retrospective with the participants, i.e., what the experience was like and what things worked and what was worth changing. (Interviewee 7).

Often, designers have little decision-making power over the final number of people, and they do their best to balance between training and actual projects. As mentioned, this causes static friction, which further slows down implementation. Management should therefore consider the level at which design is to be utilized and a plan made for both resourcing and training. It is also recommended to include designers as part of this planning process.

6.3 Differences between design driven process and old innovation model

Often the barrier is between different approaches and the development itself. Some organizations can be very focused on the company processes, products, or service development instead of asking about customer needs. There can also be misunderstanding in small things such as meaning of certain terminology. It is good to acknowledge these differences while planning implementation and change management. Bill Moggridge described it well when he described the different approaches to development:

> "Engineers start with technology and look for a use for it; businesspeople start with a business proposition and then look for the technology and the people. Designers start with people, coming towards a solution from the point of view of people." (Lupton, 2014, 21)

Design thinking and iterative innovation processes concentrate a lot on problem finding next to problem solving. This process is also called framing – reframing, unlike taught in engineering and business education where problem solving is in the focus. (Beckman & Barry, 2007, 44).

The design approach does not easily fit into the stage-gate development models which are used in many organizations. Designers begin the process by defining and validating the problem with customers, whereas business managers and engineers tend to move straight to "get things done". It can feel a bit uncomfortable when designers introduce uncertainty and questions to the process and not the solution straight away, but the purpose is to find and solve the right problem. This can cause friction between different approaches and embedding design can be major cultural change.

Rauth et al. (2014, 50,55) found that it is hard to motivate managers into design process because process is wider in the beginning even if it is faster in the end. This is because the discovery and definition of the problem is done in the beginning. The core of design

research is framing and reframing: in other words, questioning the problem itself. Designers can spend a lot of time with this to find and validate the right problem. Traditionally companies have started to solve the assumably known problem and this can cause tension between designers and others. (Björklund et al., 2020, 103–104.)

The interviews showed two kinds of approaches to development that has negative impact in the exploitation of design and challenge designers to justify the process for others.

1. Organizations were stuck in the traditional development model, where a lot of time was spent on definitions and no agile progress was made.
2. The organizations wanted to jump directly to development, in which case customer insight, data collection, and prototyping were omitted, or the acquired information was not utilized in decision-making. This led to longer projects.

It seemed that in both cases, the organization were not comfortable with experimenting and agile methods. Some organizations had heavy project management models where the definition itself took time from the actual development work.

> We're used to solving problems with a slightly more robust project management model. This is for all the problems, no matter how big or small. Everything is done as a project, although in some cases one could just start doing. (Interviewee 8)

Björklund et al. (2020, 105) has summarized differences in the development approaches that can cause tension inside the organizations. As can be seen in the Table 5 Differences in approaching innovation (Björklund et al., 2020, 105) differences are related to approaching the problems, learning, and innovation. These are the central features in organizations' design operations and represent cultural difference between approaches in design, engineering, and business.

Table 5 Differences in approaching innovation (Björklund et al., 2020, 105)

	Design	**Engineering**	**Business**
Ways of working	Nonlinear, customer driven and abductive	Linear, technology-driven, and deductive	Linear, Business result driven and inductive
Problem-solving	Reframing or finding the right problems	Solving given problems efficiently	Solving given problems efficiently

(Continue)

	Design	Engineering	Business
Learning	User research, prototyping to ask questions.	Technological development, prototyping to validate	Performance assessment, numbers and data driven
Innovating	Tailored solutions opening new possibilities for generalizations	Technical solutions opening new possibilities for generalizations	New generalizations opening new possibilities for specifications

The main difference could be summarized that in engineering and business way is to begin the development from the internally recognized problem and then follow by project planning that already includes the idea solution. The process is linear, when in design approach, it is iterative. Designer's frame and reframe the customers' problems and solutions also. It can be difficult for engineers and business management to give up their own perception of the problem, and consequently their own solution.

The difficulty of giving up the idea or solution was also discussed in the interviews. People tend to have difficulties in giving up their solution even when they personally know it is not working.

> It was painful for many people that a poorly functioning solution had to be dismantled. Although we all agreed that it is not good. Still, they were in pain that we had to go back to the beginning, and we started to think all over again. Although the need for development had been identified, it was still commented that "we have already done this". Maybe they were a little in love with that own solution. (Interviewee 3).

Some interviewees discussed the fears that can be inside the organization toward the new way of approaching design.

> There is a bit of confrontations between our processes here. We may have been allowed to do our own stuff without being related to the bigger picture (strategy). So, I think designing and developing this way can kind of make things stand out. It's scary if, in a way, you've been doing that own thing for 20 years and maybe pushing more of your own agenda than the organization's agenda. With the design, the work becomes visible and especially open. It can be scary. (Interviewee 2).

The project management model and the differences in approaches were discussed in the interviews several times. For example, Interviewee 1 discusses their project management model to be rather different from the design models. Interviewee states

that in many cases the problem is already defined before designers are taken into the process.

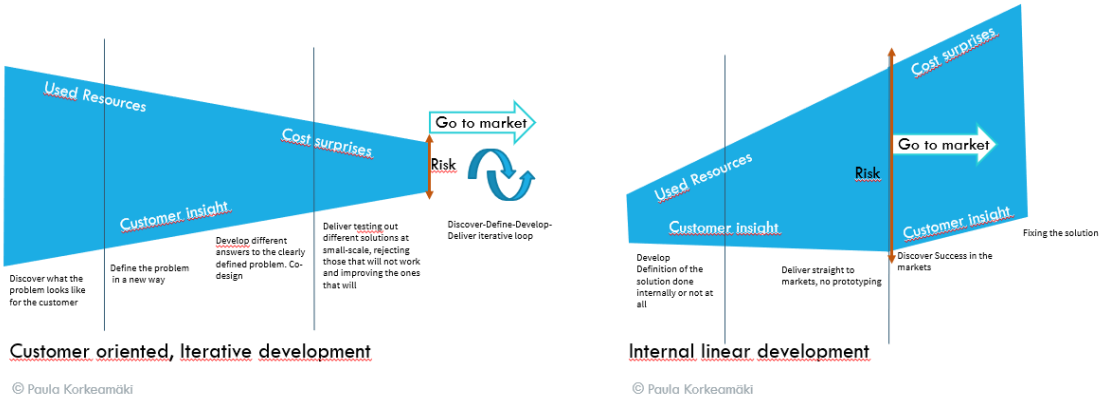
> “We develop according to the management model. First you define what the problem is, and then you define a business case on how to solve it. Then you have a description of the benefits it will bring when it succeeds and a definition of what your budget is. Often at this stage it is already kind of defined how to solve it or at least that direction pretty accurately.” (Interviewee 1)

The resistance in the organization can also be caused by the fact that design thinking process brings decision-making to team level and reduces the authority of managerial authority Also in some cases designer teams may find that their profession is being questioned when design thinking is introduced into other teams in organization. (Rauth et al., 2014, 51).

Differences in development approaches affect the actual development projects. The challenges tend to show in projects as slowness and skipping phases. In both cases, the result is often failure. There is evidence for this, for example higher costs in non-iterative projects where developers sticked with the original way of doing.

> We have such good evidence that when the scope has changed in the midst of everything and we are still slavishly adhering to that old way of doing things, then the costs have skyrocketed and badly. (Interviewee 8).

In many cases the friction is caused by the lack of understanding of the value of design and is culminated with the limited resources and taking shortcuts in development process. Picture 16 is drawn from discussions and literary review for illustrating the value of using design in the development through risk management. The process of framing and reframing loads the process upfront but reduces the risk of failing in the market and risk of rising costs.



Picture 16 Differences between iterative and linear development

Picture 16 was presented in the last three interviews as a prototype for three non-designers elicit feedback. The reception was good. It was thought that the image could illustrate benefits that are challenging to measure in advance. Non-designers also thought that the picture can be used for clarifying the design process. The picture does not solve the measurement challenge but could increase management confidence in the process along with verified measurement results. Communicating the value to the organization and creating a common development model could require more effort from designers. Of course, this is not only designers' responsibility but also leaders and managers.

Designers have found that iterative process is faster and cheaper than the old innovation model. Stickdorn et al (2018, 26) describe the characteristics of service design and iteration to be small and cheap attempts and experiments for learning and failing fast. This can be hard for people who have different approach to definition and doing.

> For example, we have this is one project in which the company is considering all kind of system investment and many other large developments for a long time. Our team went 6 weeks and got it the first minimum viable product ready and put into use. The old way has that slowness built in. We, on the other hand, take it upon ourselves and break it down into small enough things to get things done in a week. (Interviewee 8).

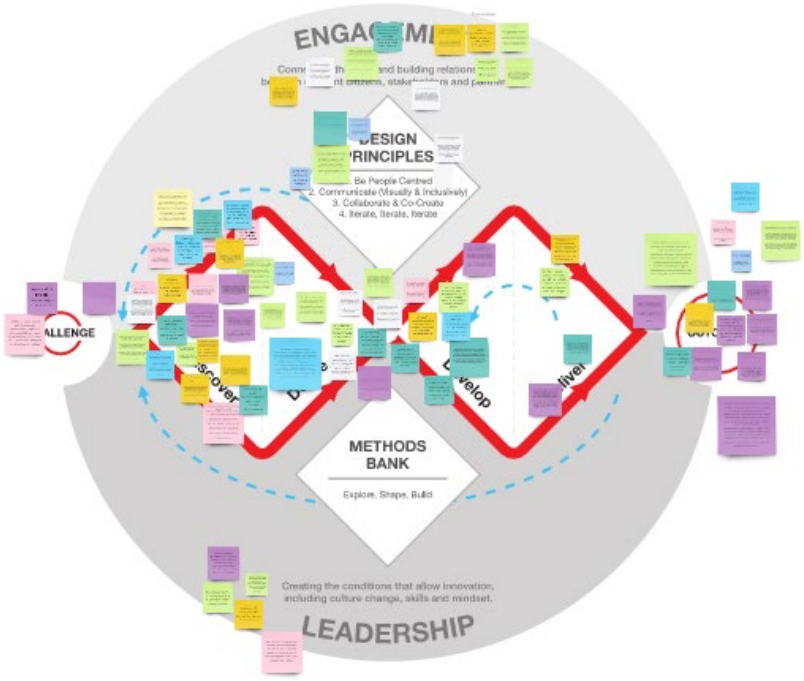
Clarification between design and other approaches to development is needed for this part. Different projects can have different approaches and it is important to understand the methodology and the process suitable for different cases. Design and agile approaches may seem complicated at first but once people learn to use the methods

and trust the process, it makes development faster, cheaper and the final solution is more suitable for use.

6.4 Friction in development process

Culture, leadership, and resources eventually emerge as challenges in the actual design processes. Everything one does is interconnected, meaning that a successful project develops culture, understanding and thus the commitment and resources of leaders. This section reviews how the challenges are reflected in projects based on the Double Diamond process model. There were many different obstacles in the actual process that designers raised into discussion as can be seen in the Picture 17 Discussion around Double Diamond process. The picture also illustrates good examples and the cause-and-effect relationships.

Many of these obstacles that cause friction can be avoided if leaders are committed to design and are fully supportive for the process. In practice this means prioritization, enough human resources, and organizational change management.



Picture 17 Discussion around Double Diamond process

Tidd & Bessant (2013, 110) discusses about uncertainty in innovation process, which often means that returns may not emerge fast and there can be a demand for short term wins over long term development plans. One of the interviewees in the study described the iterative process of design being chaotic in a good way.

> Development with design is chaotic, in a good way. You can never know what will come out of the process if you know that you have not questioned it enough. (Interviewee 6).

This friction can be alleviated, for example, by project participants making timely decisions from research to service testing, but the actual market entry is the responsibility of the business unit or management team.

> In our design process, the process is responsible for decision making. but at the stage when deciding whether to launch a product, the industry management team makes the decision to start productizing, scaling, and selling. (Interviewee 8)

It is good to understand that when methodology is not familiar and the goal in the beginning is not clearly defined as the case is with design, a quite a lot of trust and courage to lead and continue with the process are required. The starting point for the friction is that the methodology is sometimes questioned, and design thinking is often misunderstood. For some, it's an idea of commercialization:

> "Please put a beautiful stamp on top of our existing product. Make it one that everyone wants to buy." Then if we say that in fact, we should do a little something else, then they insist that "don't develop that service, it's perfect. Yes, we know how to produce it, you tell us how that customer buys it." (Interviewee 6)

Designers pointed out that there is a methodology for reason in design and development. Unfortunately, in some cases people don’t want to follow the principles and methods.

> This was a new and different way for us to develop. It is positive that we want to do it in a new way. but in all levels, it is not understood that there is a method or several methods behind the new way. And there are professionals who can do this. If you want this to work out, you must put resources and time into it. (Interviewee 4).

Development of new products requires knowledge and understanding about changes of behavior in cultural context. This kind of knowledge can be gathered through research. Companies also need to increase their understanding of the meanings that consumers attach to products. This is something that companies cannot dictate. (De Goyey et al., 2019 103-104)

In some cases, designers had to set the ideal process aside for building up shared understanding about customer centricity. Few of the designer discussed that they noticed that they couldn't start doing projects as planned by gaining customer insight properly because it was not seen important. Instead, they skipped the first step, and for example made customer journeys where they were able to point out the lack of customer view and that way, they were able to convince participant about the importance of the definition phase. In several cases, the project participants jointly decided to gather more insight for development purposes.

In the actual process designers face challenges from the beginning. In the best case they describe that they have enough time to define the scope and gather enough information for framing the problem. Many of the designers pointed out that this phase requires time because of the iteration in framing and reframing the problem. Due to the iteration in framing and reframing requiring time, some people want to skip discovery, which in turn makes defining the problem much harder. Designers need to reassure people that doing this is worthwhile.

> Some of the participants have had to spend more time convincing them that this is a good thing, and this will affect the outcome and we will be more successful. (Interviewee 9).

Also, sometimes it is hard to give up their pre-existing idea of the problem before it is validated with customers. One interviewee describes this as knowing on behalf of others and it is not the same as validating. It is a process of learning, which will help later in the process, because definition is done properly.

> I think the company thought that the center of the diamond was crystal clear for everyone and the first diamond (delivery) could be skipped completely. They imagined that it would be possible to proceed directly to that second diamond (delivery). They thought that yes, we already know this and yes, we know this. Although whenever those customers were involved, it was enlightening, and we learned more. (Interviewee 3)

A cause-and-effect relationship exists between each phase. Consequently, the skipped discovery phase has an effect later the process. This often happens when people think they have understood the challenge. But it is not clearly defined, and the same amount of time is spent later to solve the ill-defined problem.

> However, it would be worthwhile to do Discovery properly. In any case, when we start the develop phase, we are always running into the fact that information it is missing, and customers are not using the solution, and something has not been thought about at the beginning. Isn't that the same time that is used to fixing? Doing

> it right in the beginning could prevent those challenges then in the end. (Interviewee 7).

Non-designers often feel like the actual development is done in the later phases and discovery is basically “doing nothing”. But as all the designers pointed out skipping any phase in Double Diamond -process will lead to slowness and has effect in the outcome. As mentioned earlier, most of the skipping had something to do with discovery either being skipped totally, or not using the information in decision making. There was no discussion about skipping prototyping or other phases in the second diamond, but there was discussion on the effects on skipping the prior phases.

> It’s weird how time and development work is treated when you think about saving and being efficient. Not doing research but directly taking some system and then wondering when no one knows how to use it and it interferes with people’s daily work. (Interviewee 7).

> It can go completely wrong if you don’t even spend that month talking to people about whether this works or not. (Interviewee 6).

Because in many organizations’ principles were not very clear and the change process was at the beginning designers felt that they were taken into development too late, and the first definition had been done already. Sometimes this was done internally without relevant customer insight. In these cases, designers tried to add some nuances into the process by inserting customer perspective into process via questions. One interviewee had turned the process around by co-drawing service blueprints and then discussing the service from customer point of view. She said that it was an excellent way to get participants to understand the value of customer insight and discuss it with the service users. Often this led to going back to the discovery phase and gaining more information.

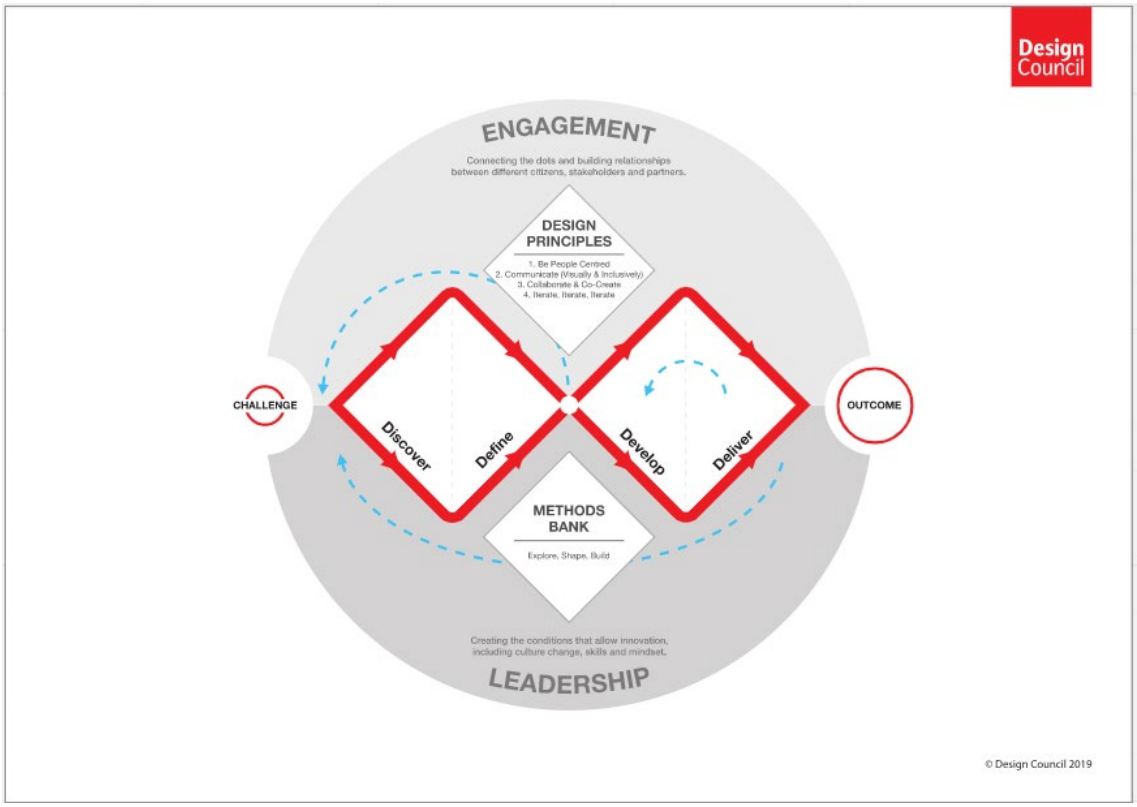
By this example it can be argued that in some cases it would be good for designers to let go of the process for a while and find another approach to hit the final target. This does not mean skipping important phases but using iterative methods to teach participants during the process. As most of the friction in development process is caused by the different approaches and views but understanding the participants and finding a compromise can go a long way.

7 FINAL CONCLUSIONS

7.1 Research summary

The purpose for the study research was to identify the barriers in implementing design thinking, human-centered development and innovation processes into organizations. Understanding the factors that cause slowness and friction in the projects helps to make implementation process smoother.

Double Diamond framework provides guidelines for design practices and methods. And as a short summary most of the obstacles can be discussed through the framework. The Picture 18 together with the list below presents the most common obstacles that rose during the interviews. The phases and obstacles are explained under the Picture 18 Double Diamond Framework (Design Council 2021)



Picture 18 Double Diamond Framework (Design Council 2021)

Leadership: If leaders are not fully committed, there is not enough resources and organizational structures do not support design. This leads to lack of engagement in the organization.

Engagement: The organization is not committed to the development process, and it leads to skipping phases in the development process and non-commitment of the participants.

Challenge: People don't take time with the customer to define the challenge. People think they have understood the challenge, but it is not clearly defined.

Discovery: If people don't fully understand the design process, they often want to skip the discovery phase and go straight to definition. They believe it takes too much time, although time spent in this phase saves time later.

Define: When there is not enough information gathered in definition phase validation is not possible. This leads to problems in the next phases.

Development: Poor definition leads to problems in development. It is problematic to resolve and develop something that is ill defined. Also, if problem is not validated the development may differ from the customers' actual needs.

Deliver: All the obstacles during the phases before are culminated into the final phase of delivery. The proper solution is not found unless all the work is done properly.

Outcome: The project might fail and solution may not meet the needs of the customer or organization may not consider the solution to be suitable and it will be failure in the market, cost surprises occur, or development process is terminated earlier.

The obstacles tend to have cumulative nature, one following another. Leaders play a big role in supporting design implementation. If leaders and top management are not committed, expectations for design to succeed are limited.

This cause-and-effect chain could be simplified as following picture 19 illustrates.

Picture 19 Obstacles as a process

Based on this small-scale study, it is challenging to make exhaustive recommendations for overcoming barriers. What was discovered during the literature review and research was that, the implementation of design thinking requires the co-operation and mutually evolving activities of designers, top management, and organization. During the implementation phase there is a ongoing process among these three. At worst, the imbalance among the three leads to the failure of design efforts.

1. Top management is committed and there is interest and wide capabilities in the organization, but deep expertise in design is missing. Usually, projects will be delayed or not finished at all.
2. Top management and designers are committed, but organization does not understand the purpose and value of design. In this case designers spend a quite a lot of time to justify their purpose.
3. If organization and designers are committed but top management is not. Most of the design efforts are deprioritized and there is a big possibility that design cannot be implemented at all.

When management systematically implements design in an organization, a common vision is achieved, and design can be utilized as a strategic competitive factor. If any of the participants are not committed or existing, implementation will slow down. In the absence of top management support, the implementation of customer orientation and design thinking can even be completely prevented.

Based on the interviews the best case to start with the design implementation seemed to be when top management introduces the idea, and they are fully committed to design thinking. In these cases, the implementation starts with strategy and building deep

expertise as well as wide capabilities in the organization. The literature and research support this view.

Certain similarities in the interviews appeared to indicate design maturity and organizational commitment to design. These similarities are presented as list of questions on Table 6, to help designers to understand the organization's ability to leverage design.

Table 6 Questions to understand the level of design

Question	Indicator
How much time and effort CEO and other top managers use in design and innovation?	The level of top management commitment
Is there a person responsible for design practices	The level of top management commitment
Is the person responsible given mandate to make decisions?	The level of trust in designers and design process.
How much time people in the organization are allowed to spend in development?	The level of prioritization of new ways of doing
Are the right persons involved in the design process?	the level of organizational commitment to design
Do you utilize customer insight in the decision making?	The level of customer-centricity
How much time you spend with your customers?	The level of customer-centricity
How much time and effort does designers use in justifying the discipline?	The level of shared understanding and change management
How do you measure design?	The level of understanding design value in the business

Further research is required to find indicators for certain obstacles. The solutions for avoiding these obstacles need more research and testing in practice. There are many good practices that designers have developed in their work. Designers use a lot of learning-by-doing approach to develop their own work and is good way. It also will be important to gather these good practices, because it develops design as a discipline and all industry will benefit from that.

Finding the key metrics for design success and process measurement is also important and they should be linked to business objectives. Similarly, designers would benefit from a shared way to define the level of design in organizations. This would help designers to advocate on behalf of the value and importance of design.

Although no solutions were presented in the course of this work to overcome the obstacles, the result of this study help to understand the most common obstacles faced by designers and the moderate generality of the obstacles. This makes it easier to locate and influence the root cause. Co-development is essential in design thinking, and the purpose of this work is to increase the common understanding of the challenges faced by design thinking and designers and thus bring things together. At its best, increasing understanding will help break down barriers between organizations.

In this study, barriers between strategy and implementation were identified from the perspective of designers and developers. Further research focus should be on collecting the views from leaders and managers on the same topics to gain an overall understanding of the barriers between strategy and implementation This would help to get an overall picture.

7.2 Validity and reliability of research

This study focused on increasing understanding of the challenges that designers and business developers face in their work. The basic principles of design were utilized in the study in accordance with the Double Diamond framework and qualitative research.

The basis of the Double Diamond is to increase the understanding of the chosen problem and to recognize the problem-customer dyad. This phase was carried out through a literature review and thematic interviews. Existing research and the results of the interviews were compared throughout the analysis and similarities and differences were sought.

The reliability of the study can be considered reasonably good. The interviewer did not guide responses during the interview, and respondents were allowed to respond freely. The interviewer was committed to anonymizing the conversations so that respondents could talk about the topic as openly as possible without being identified from the responses.

Each interview sought to find out the answers to the questions in the body of the interview without interfering the discussion. Notes were written about the interviews and in addition the interviews were recorded. The author of the study was able to treat the results obtained unchanged and her own interpretation remained at the processing stage. The responses to the interviews are subjective and the outcome of the response depends entirely on the respondent's perspective. The survey results largely met the interviewer's expectations and theory of design implementation.

Interviewees spoke very openly about the challenges they have faced in their work. The diversity of their backgrounds gives credibility to the generalizability of research results. On the other hand, in some cases, the challenge was posed by issues related to the diversity of operating environments, in which case the interviewer sought to better understand the activity in question by asking more specific questions. However, this study did not find any significant differences between the interviewees in terms of barriers, so the results of the study can be considered quite reliable and generalizable.

The reliability of the results of the interview is reduced by the small sample size and the starting point of the research design in the search for obstacles. Some factors may have been overlooked by the interviewer and the author may not have clarified all the points. As a follow-up study, the results could be validated by conducting more extensive research. Further research would also provide a better understanding of, for example, the indicators of different barriers.

Reliability is also affected by the author's choices about the importance of the issues to be addressed in the reduction and grouping phase, as these are her views on the relevance of the issues to the research. The chosen topics were taken into Miro platform, in which case some data may have been omitted. Not all the issues mentioned have been raised in this work, but the issues addressed are those that were repeated most often in the interviews.

The analysis utilized a visual Miro platform, where different themes were grouped and similarities and differences in the results were outlined. With a few rounds of grouping, all results were conceivable according to the Double Diamond framework. At this stage, it would have been useful to use co-development methods to make the analysis more objective. There is only one author of this study, so previous experiences may affect the outcome of the analysis. On the other hand, the literature clearly supports the findings.

Overall, the research can be considered as a good overview of the challenges facing designers and will certainly increase the understanding of the challenges. However, due to its small scale, it is not possible to draw conclusions about all the obstacles in the way of design.

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Appendices

Appendix 1. Recruitment post for interview 2.9.2020

Tervehdys muotoilijat ja kanssa kehittäjät!
Oletko koskaan tuskaillut, että miksi asiat eivät etene?
Teen YAMK-lopputyötä työnimellä: Lepokitka asiakaslähtöisen kehittämisen malllin jalkautuksessa. Hypoteesini on, että organisaatioissa on useita tunnistamattomia esteitä kehitysprosessin jalkautamisessa ja kipupisteet tunnistamalla jalkautus tulisi sujuvammaksi.

Jotta hahmottaisin paremmin, millaisia esteitä erilaisissa organisaatioissa on ja millaiset seikat näitä ilmentävät, etsin haastateltavaksi muutamia Inhouse-kehittäjiä. Sinun ei tarvitse toimia nimikkeellä muotoilija vaan voit muutoin tehdä/vastata/olla mukana kehityksessä.

Jos sinuakin on joskus turhauttanut ja haluaisit jakaa aiheesta ajatuksia kanssani noin tunnin ajan teemahaastattelussa, niin laita yksityisviestiä tai kommentoi tähän alle. Hyödynnän vastauksia opinnäytetyössä, mutta poistan kaikki tunnistetiedot sekä vastaajan että yrityksen osalta.

Mielelläni keskustelen ja sparraan aiheesta myös tässä postauksessa 🙂

Kiitos jo etukäteen!

Asiasanat: lepokitka, kehitysprosessi, muotoiluajattelu, tutkimus, opinnäytetyö

Appendix 2 Theme interview frame

Teemahaastattelu

Johdanto:

Kiitos, kun sain tulla tekemään tätä teemahaastattelua. Olen tunnistanut, että organisaatioissa on hitautta ihmislähtöisissä kehitysprojekteissa kuten palvelumuotoilussa, asiakaskokemuksen kehittämisessä jne ja näiden integroinnissa. Haluaisin tutkimuksen tässä vaiheessa ymmärtää paremmin, millaisten asioiden kanssa inhouse designerit painivat ja miten tekeminen näkyy organisaatioissa. Olen siksi pyytänyt muutamia designereita tällaiseen 60 min mittaiseen teemahaastatteluun. Onhan meillä sen verran aikaa?

Meillä on mielessämme kolme teemaa, joista haluaisimme käydä keskustelun:

Teema 1: Organisaation rakenteet ja kulttuuri

Teema 2: Oma rooli ja erilaiset muotoiluprojektit

Teema 3: Muotoilun jalkauttaminen

Teema 1: Organisaation rakenteet ja kulttuuri

- Kuvaile vähän millaisessa organisaatiossa työskentelet? Organisaation koko?

- Millaisella toimialalla työskentelet?

- Kuvailisitko organisaation toimialaa stabiiliksi vai uudistuvaksi?

- Miten organisaatio suhtautuu uudistuksiin? Miten kuvailisit organisaation kykyä uudistua?

- Miten kuvailisit organisaation hierarkiaa ja päätöksentekoprosessia?

- Onko organisaatiossa tehty designiä miten pitkään?

- Miten organisaatiossa suhtaudutaan designiin?

- Onko muotoilu mukana strategisessa päätöksenteossa?

- Kerro joku esimerkki, miten teillä suhtadutaan muotoiluajattellun ja muotoiluun/ kehittämiseen?

- Miten organisaatio on rakentunut: onko siiloja?

- Miten paljon koet, että joudut perustelemaan työtäsi sisäisesti?

- Onko muotoilu mielestäsi strategisella tasolla: näytä tässä neljä porrasta.

- Miten organisaatiossa resursoidaan muotoilu?

Teema 2: Oma rooli ja erilaiset muotoiluporojektit

- Miten kuvailisit sinun normaalia työpäivää?

- Millaisista asioista sinä vastaat organisaatiossa? Onko teillä millaisia muita designiin liittyviä rooleja?

- Millaisia palveluntarjoajia käytätte vai teettekö kokonaan inhouse?

- Millaisia projekteja teillä tavallisesti on? Keitä projekteihin yleensä osallistuu? Ketkä ovat projketeista vastuussa?

- Missä vaiheessa sinut yleensä otetaan mukaan erilaisiin projekteihin?

- Millaista palautetta olet saanut työstäsi?

- Millä perusteilla ja kuka päättää teillä päätetään viedäänkö tuote/palvelu markkinoille?

- Tunnistatko joitain seikkoja, jotka hidastavat työsi tekemistä?

-Tunnistatko joitain seikkoja jotka edesauttavat työsi tekemistä?

Teema 3: Muotoilun jalkauttaminen

- Miten teillä on jalkautettu muotoiluajattelua organisaatiossa?
- Miten organisaatiossa on koettu muotoilun tuominen osaksi kehitystä ja innovaatiota?
- Miten muotoiluosaaminen sijoittuu organisaatiossa?

Appendix 3 Table 1 Design Maturity explained (Danish Design Center, 2001, Koostra, 2009.3)

Level	Danish Design Ladders	Design management staircase Model
Step 1 / Level 1 Non-design / No Design management (later DM)	Design plays an invisible role in product design. Usually not involved professional designers	Business does not use design management.

(Continue)

Step 2 / Level 2 Design as form-giving / DM as a project	Design is focusing on the end product. Can be done by professional designers.	Design management is limited to direct business needs as marketing tool. It is not used in innovation.
Step 3/Level 3 Design as a process/ DM as a function	Design is seen as a way of doing and not just end product. Solutions are driven by problems and customer insight.	Business has started to recognize design as a tool for innovation and it is integrated into the development process.
Step 4 / Level 4 Design as a strategy / Design as a culture	The designer works in top management and rethinks the business concept and visions.	Business is design driven and design is part of differentiation strategy.

Appendix 4 Table 2 Differences between decision makers, sense makers, traditional manager and design manager (Madsjberg & Rasmussen, 2014, 162; Oakley, 1984, 80)

Aspect of Leadership	Leaders as decision makers	Leaders as sensemakers	Traditional manager	The design manager
Primary role	Make timely and informed decisions	Discover future direction	Standard operating procedures guide decisions	Decisions augmented by environmental and other inputs
Nature of effort	Evidence-based	Judgement-based	Task oriented, Action oriented, keeps physically busy	Goal oriented, Combines periods of reflection with action.
Primary skills needed	Analytical skills	Synthesis skills	Technical and analytical skills emphasized	Skills needed to deal with ambiguity, complexity, and conflict
Relationship to phenomena	Detached from phenomena	Absorbed in the phenomena	Inward perception emphasizes internal, issues, competition	Inward/Outward perception includes societal problems
Role of Data	Data gives clear answer	Data can be conflicting	Individualist approach to problem solving	Interdisciplinary team approach to complex problem-solving

Appendix 5 Table 5 Differences in approaching innovation (Björklund et al., 2020, 105).

	Design	Engineering	Business
Ways of working	Nonlinear, customer driven and abductive	Linear, technology-driven, and deductive	Linear, Business result driven and inductive
Problem-solving	Reframing or finding the right problems	Solving given problems efficiently	Solving given problems efficiently

(Continue)

Learning	User research, prototyping to ask questions.	Technological development, prototyping to validate	Performance assessment, numbers and data driven
Innovating	Tailored solutions opening new possibilities for generalizations	Technical solutions opening new possibilities for generalizations	New generalizations opening new possibilities for specifications

Appendix 6 Obstacles as a process