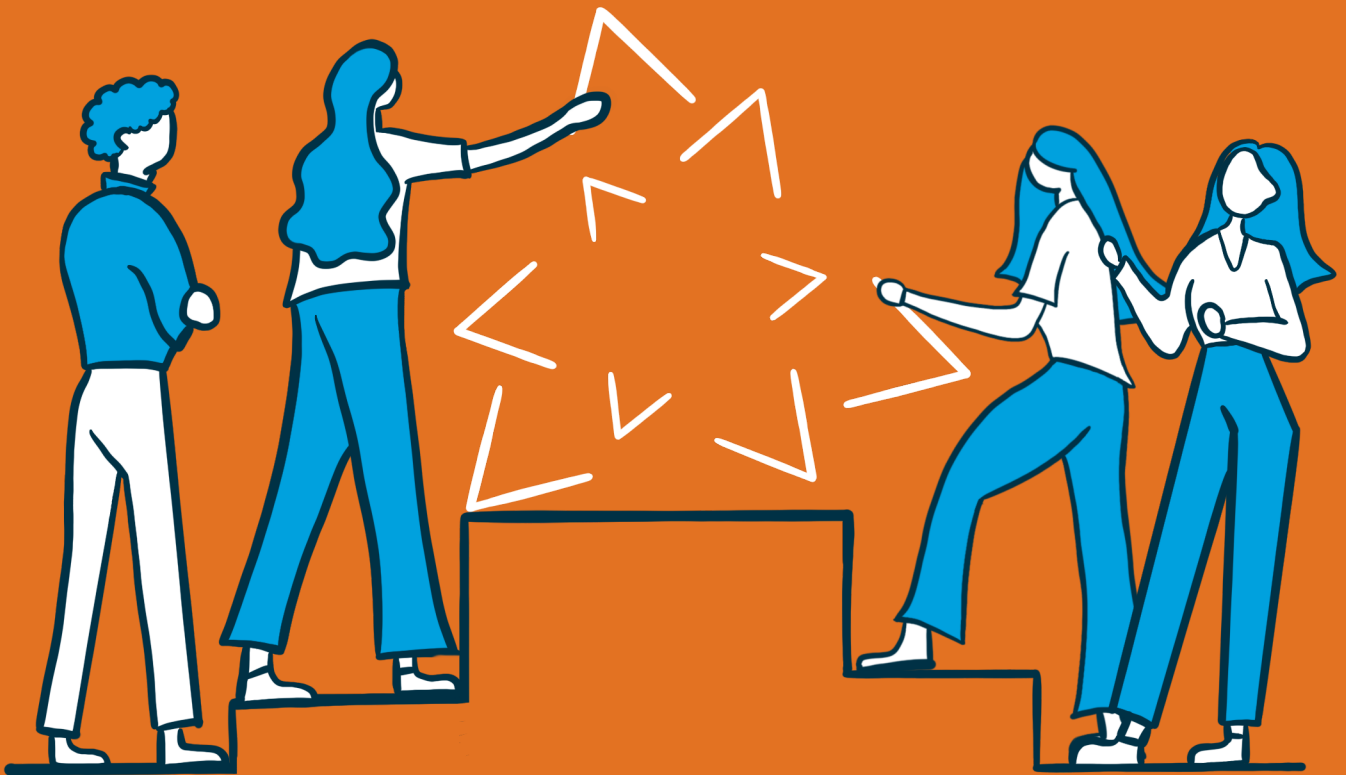


Onboarding initiatives for digital transformation with

# BLINK



**Master Thesis** by Aniek Toet

MSc Strategic Product Design  
Delft University of Technology  
March 2021

**AUTHOR**

Aniek Toet

**MASTER THESIS**

MSc Strategic Product Design  
Faculty of Industrial Design Engineering  
Delft University of Technology

**CHAIR**

Prof. mr. dr. ir. S. Santema  
*Department of Design, Organisation and Strategy*

**MENTOR**

Ir. C. Brinkman  
*Department of Design, Organisation and Strategy*

**COMPANY MENTOR:**

Lotje van der Kooij  
Portfolio Management Consultant

# You can't do everything, but you can do anything

- David Ellen -

## PREFACE

*With this report, I conclude my time at the TU Delft. In the past six months, I have had the opportunity to use my knowledge in the field of Strategic Product Design. I look back on an enriching, intense time that was the highlight of my studies. I want to thank DS for opening its doors for me in these strange times.*

*Sicco, thank you for your enthusiasm from moment one. You showed me the value of this project and pointed out things I didn't see. Your sincere and critical view has contributed to the quality of this project.*

*Carlijn, thank you for your dedication to my project. You responded quickly, regardless of the time of day (or night). Your clear and down-to-earth feedback has been valuable.*

*And Lotje, thanks for supervising my project. Because of our shared background and interest, we always had interesting conversations. Your personal approach made you accessible and has brought both this project and myself a lot further.*

*Liesbeth, thank you for making this opportunity possible.*

*To all my DS colleagues, thanks for all the inspiring conversations and your willingness to help. I hope our paths will cross in the future.*

*I want to thank all the people I have interviewed. Your input broadened my knowledge and prompted my creative brain.*

*Family, thanks for your sincere interest. For opening up your network, thinking along with solutions and participating in experiments.*

*And of course, I want to thank my IDE friends for participating in my creative sessions and the experiments.*

*Dorine and Paula, thanks for proofreading this report.*

*Kit and Vic, thanks for taking care of my physical and mental health, for listening to my stories and for your fresh perspectives.*

*Bob, thank you for always being supportive and understanding. I hope you enjoyed my thesis as much as I did.*

*And lastly, to everyone who has been involved in this project. Because of you, I can be proud of the designer I am today.*

*Enjoy the reading!*

*Aniek*

# EXECUTIVE SUMMARY

The European Airline is a big company that focuses on efficiency, sustainability and customer experience. Its department DS strives to make the company smarter and more efficient. They create value by experimenting with technologies and methodologies, delivering products into people's hands, and transforming the way of working. My project was conducted as part of the Portfolio Management team within DS. The Portfolio Management team enables decision-making on priorities and guides delivery of value.

On assignment for DS, my intent for the project was to design a concept that quickly generates and shapes initiatives, and creates insight into their potential value.

The project started with framing the problem. During the literature study, I concluded that three studies were leading for this assignment. Elements of successful portfolio management are described by Cooper et al. (2001) as strategically aligned, maximum portfolio value and portfolio balance. This can be achieved by having a portfolio mindset, being agile, and focusing whilst generating and shaping initiatives (Kester et al., 2011). The elements of portfolio orientation and structuring proved to be essential for the assignment as well (Meskendahl, 2010).

I conducted external interviews, during which elements from literature gained meaning within the assignment. I discovered how the elements of Cooper et al. (2001), Kester et al. (2011) and Meskendahl (2010) could be applied within the context of the problem. I concluded that all insights obtained could be divided between strategically aligned, maximum portfolio value, portfolio balance and portfolio mindset.

The underlying drivers of these elements led me to define design criteria. Different combinations of ideas resulted in four concepts, including the frame toolbox concept. The frame toolbox aims to transform the Frame Creation method (Dorst, 2015) into a tangible product, where initiative owners feel supported in the rapid generation and shaping of initiatives with maximum value as output. I subsequently developed the frame toolbox concept within DS' context by testing its assumptions, hypotheses and challenges. This testing resulted in finding a connection between the frame toolbox and DS' resources. This iterative design process led to my final design of **Blink**.

Blink is a digital toolbox that transforms all types of

innovations into valuable focus points for product teams. It quickly exposes problems, themes, solutions, and opportunities to their core and maximizes their potential value. By implementing a simple step-by-step plan, new opportunities are shaped that align with DS' strategy. Blink helps participants to reframe their mindset by discovering the drivers of initiatives to define where the "real" value lies. This value is assessed by the value check tool. Focus points are evaluated on desirability and viability; this clearly shows its potential value. A portfolio mindset among employees is ensured through Blink's structure and transparency. Blink can be performed in small and large groups, both online and offline. It enables participants to act flexibly due to the short turnaround time. It prioritizes speed, as it focuses on rapid screening of the initiative's potential value.

This thesis describes the process I followed in developing Blink and concludes with an implementation plan, a final reflection, Blink's limitations, and recommendations for future designs.



**A problem  
can never be  
solved from the  
context in which  
it arose**

- Einstein -


## MEANING OF WORDS

European Airline	A synonym for the company.
Focus point	Indicates the focus of initiatives.
Initiative	Refers to all types of projects DS executes (problems, opportunities, solutions and themes).
Onboarding	Refers to the moment an initiative is spotted until a product team executes it.
Opportunity backlog	The phase when new intakes are accepted and go through the stages "validated", "explore" and "ready".
Problem	Refers to the problem of the thesis.
Product team	Consists of multiple roles throughout the department and is the basis of DS.
Scrum	Is a framework that proposes how organizations should work.
Starting point	Refers to the initiative when it has just been spotted.
The design	Refers to the design/solution of the thesis.

## ABBREVIATIONS

DS	Refers to the department.
MT	Management team
MVP	Minimal Viable Product
PM	Portfolio management team
NPD	New product development
WWWWWH	Who What Where When Why How method

## COLOURS

Blue text	Is always an insight or interpretation concerning the thesis's scope.
Orange text	Is always an important part of the text.
	Is always a conclusion.

# TABLE OF CONTENTS

## INTRODUCTION

1 Approach	p. 10
2 Project introduction	p. 12
3 Problem definition	p. 15
4 Assignment	p. 16
5 Research set-up	p. 16

## PROBLEM FRAMING

6 Literature study	p. 20
7 Internal findings	p. 24
8 Challenge	p. 25

## EXPLORATION

9 Interviews	p. 28
10 Design criteria	p. 31
11 Ideation	p. 33

## MINIMAL VIABLE PRODUCT

12 Concept	p. 38
13 Theory	p. 40
14 Hypotheses	p. 42

## VALIDATIONS

15 Method	p. 46
16 Results	p. 47
17 DS resources fit	p. 51

## FINAL CONCEPT: BLINK

18 Description	p. 54
19 Users	p. 56
20 User scenario	p. 58
21 Blink's tools	p. 60
22 Usage in DS	p. 62
23 Digital application	p. 64
24 Criteria fit	p. 66

## ROADMAP

25 Implementation	p. 70
26 Final reflection	p. 72
27 Limitations & recommendations	p. 74
28 Personal reflection	p. 75

References	p. 76
------------	-------

# INTRODUCTION

*The first chapter introduces the approach and background of the project. Moreover, it gives information about the defined problem and the assignment. The chapter closes with an overview of the research set-up.*



# 1 APPROACH

*Dear reader, I want to stress that this report is a concise version of the thesis's thoughtful process. It only discusses the essential results and choices. For a detailed overview of all actions, findings and outcomes, I refer you to the appendix.*

A fourfold iteration of the "Double Diamond" method is applied in this thesis. This model is a design process in which four phases can be distinguished, successively named discover, define, develop and deliver (Design Council, 2007). In the original model, the wishes of the users are mapped out in the first phase. In the second phase, ideas and inspirations from the define phase are filtered into a selection of ideas. These are then analyzed, defined and redefined. The next diverging step develops the idea. In the final stage, the concept is completed and implemented into the market. The figure below illustrates the double diamond approach. It is not a linear process; participants can iterate through all the phases.

The adjusted "Double Diamond" recognizes the value of diverging and converging to arrive at new insights. Since the graduation project is a large independent project, the quadruple model supports to maintain continuous focus. Readers should be aware that it involves an iterative process in which the four phases in reality are sometimes intertwined.

The thesis's process is divided into four phases: "Problem Framing", "Exploration", "Build, Measure and Learn" and "Deliver". The "Double Diamond" is applied once in each phase and consists of diverging and converging processes. The following page visualizes the application of the method during this project. The core actions have been transformed into practical activities within each phase. Each "Double

Diamond" forces the designer to merge insights from the exploration phase in the converging phase, so the thesis maintains its focus.

Furthermore, other design methods have been applied in the thesis. In the "Problem Framing" phase, various design techniques were used to reveal the problem. Interviews and observations have been used to conduct qualitative research. One of the research techniques included the "Who What Where When Why, and How" (WWWWWH) method. The tool provides an overview of essential questions that will guide you to a detailed understanding of the problem (Tassoul, 2006). This research technique is applied several times during the project.

In addition, co-creative sessions were performed in the ideation phase. Scenario creation is combined with a self-invented method in which abstract concepts are transformed into concrete examples.

**This report has been built upon insights and will not precisely follow the double diamonds' process.**

The usage of assumptions turned out to be one of the findings of this thesis. This has influenced my process by becoming aware of the (unconscious) use of assumptions. A structured way of working in which all information and insights were plotted has limited this. Discussing findings with colleagues and external parties made the thesis's Umwelt (more about this later) as open as possible. Existing patterns have been reframed to insights relevant to the research. Finally, it should be mentioned that every design project depends partly on the personality of the designer. Instead of combating this, it is powerful to embrace the personal aspect of design.

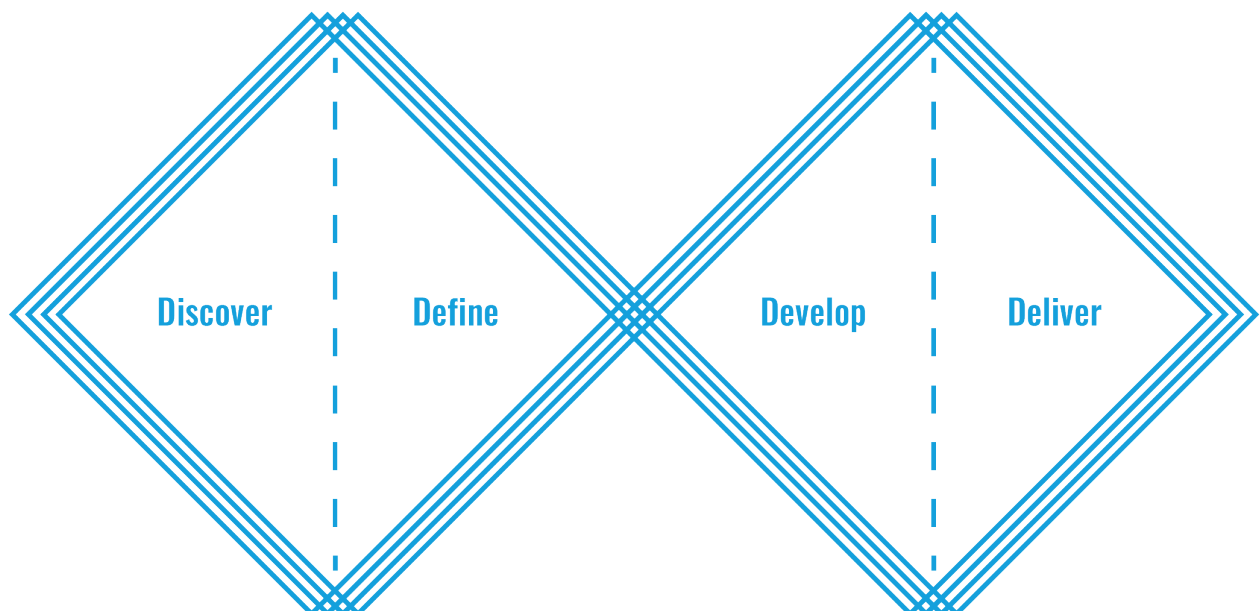
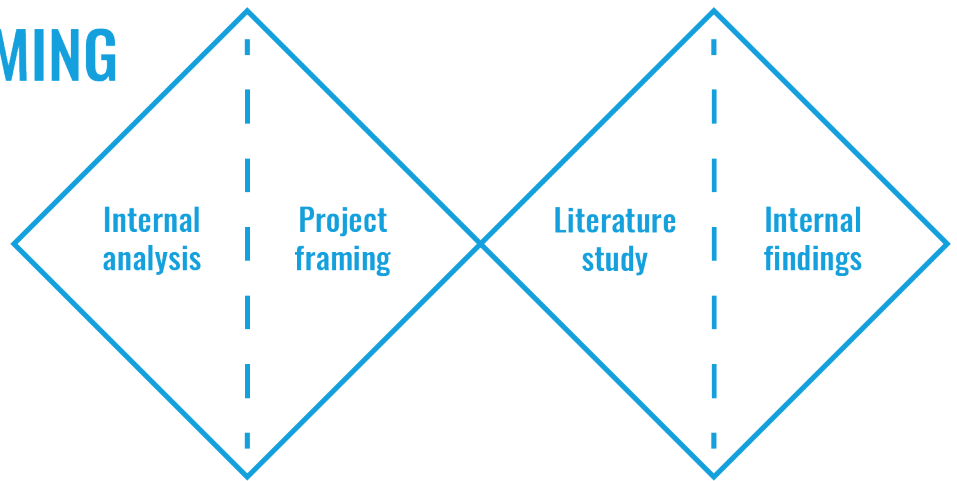
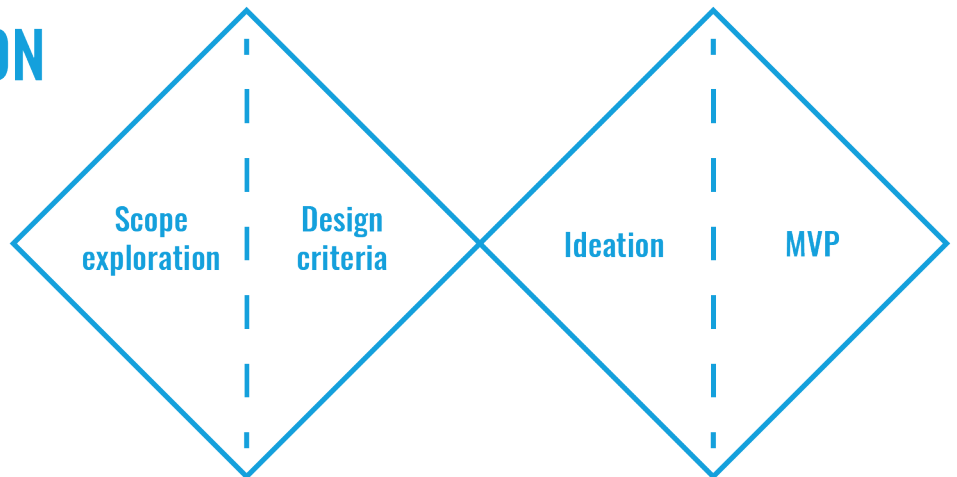


Figure 1. Double diamond

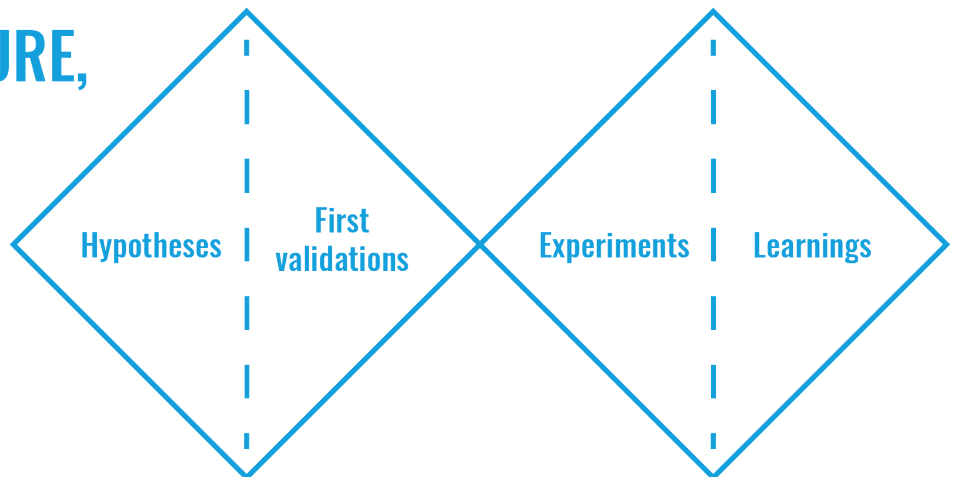
## PROBLEM FRAMING



## EXPLORATION



## BUILD, MEASURE, LEARN



## DELIVER

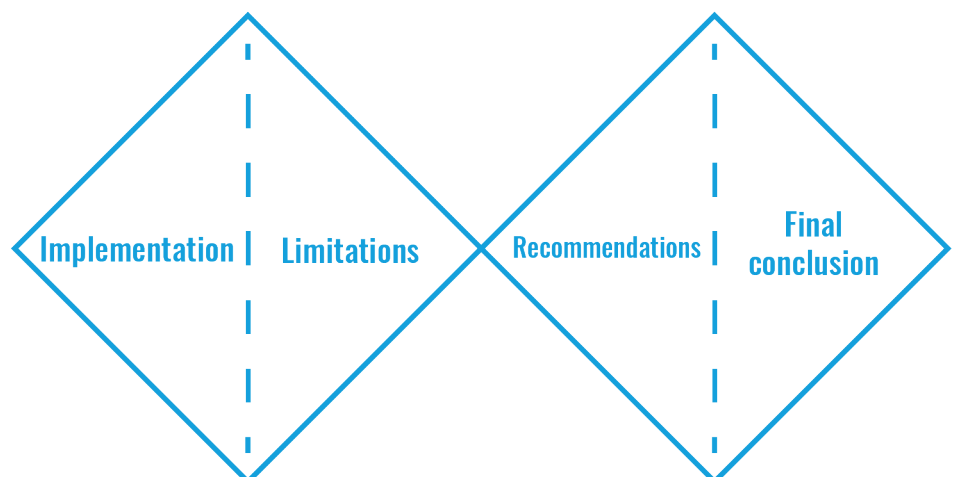


Figure 2. Approach of the thesis

# 2 PROJECT INTRODUCTION

## 2.1 INTRODUCTION

The European Airline is a big company that focuses on efficiency, sustainability and customer experience. A few years ago, DS opened its doors: a department that unites the archetypes "caregiver" and "magician". The caregiver reflects a personality that gives attention to others and is empathetic. The magician is passionate and creates the energy to make dreams come true. DS is separate but also connected to the organization. It is a place to innovate, inspire, collaborate and co-create. They strive to make the company better and more efficient internally to achieve their purpose. Value is created by experimenting with technologies and methodologies (blockchain, AI, Robot process automation, VR, AR and IoT), delivering products into people's hands (co-creating with the end-user for example) and transforming the way of working. DS focuses more on incubating new ideas into a proof of concept rather than the optimization of a product. When DS scouts a problem or idea, it is called an initiative. **The broad term initiative includes: problems that arise at employees at different departments; possibilities derived from new technologies; and inspiration from other industries.** The term initiative shows the responsive and pro-active approach of DS.

These actions result in a diverse portfolio related to the Innovation Ambition matrix (Nagji and Tuff, 2012). Nagji and Tuff describe what they call the ideal balance between core innovation, adjacent innovation and transformational innovation. This balance could be applicable within the European Airline, where DS mainly focuses on transformational initiatives.

## 2.2 SCRUM

DS adopted the Scrum framework in 2017; it allows them to be more disruptive, quickly learn from failures and take further steps. They strive to follow the Scrum Values of Openness, Respect, Focus, Commitment and Courage. They work agile; the product teams have a central position and strive to quickly create minimum viable products (MVP). Unique about DS is that they have a helicopter view of the company; they collaborate with all different departments. The process of how an intake form "flows" into the portfolio is illustrated in appendix 2.

## 2.3 ROLES

An overview of the roles within DS is visualized in figure 3. It is relevant to understand the way-of-working of DS, responsibilities and who should be involved in the scope. Importantly, this is not a hierarchical overview.

All roles in DS are equal, and the Product Teams have a central position. **Thanks to DS' open attitude, every employee can become an initiator regardless of his or her role.**

## 2.4 EVENTS & ARTEFACTS

The portfolio sync occurs every week with at least the management team (MT) present. During this meeting, decisions are made about new initiatives; whether time, money and energy will be invested and what value it expects to deliver. Next, during the portfolio event new intakes are discussed. It is an open event for all DS employees, and it is meant to be transparent about progress, create synergy between teams where possible, and resolve impediments.

The portfolio wall provides an overview of all current projects. It also communicates the project's core, progress and owner. COVID-19 has converted the portfolio wall into a digital overview, JIRA. Besides, there is the intake form. The intake form contains a strategic filter, which checks whether new initiatives fit with DS' strategy. Moreover, accepted initiatives are processed in an Epic. In this format, the title of the initiative is summarized together with a description. Details about DS' values and way of working are further explained in appendix 2.

## 2.5 CURRENT CIRCUMSTANCES

It is decided that in 2021 DS will cease to exist in its current form. It does not expect to have a direct influence on the practical matters of this thesis. Whether DS can be transformed in the reorganization to an alternative department is still uncertain, but plans are being made.

## 2.6 PORTFOLIO MANAGEMENT

The thesis research is conducted as part of the Portfolio management team within DS. The project is supervised by the Portfolio Management Consultant, whose supervisor is the Strategic Portfolio Manager. The Portfolio Management team enables decision-making on priorities and investments and guides the delivery of value. The Portfolio Management team is responsible for selecting relevant initiatives; since the European Airline is a big company with many departments, it is challenging to choose the most pertinent ones. **DS longs for a way to quickly screen initiatives and prioritize on relevance and value creation. Before much money, time, and energy is invested in an initiative, it must be validated based on feasibility, desirability, viability.**

An overview of all Portfolio Management tasks is shown in figure 4. You may perceive that Portfolio



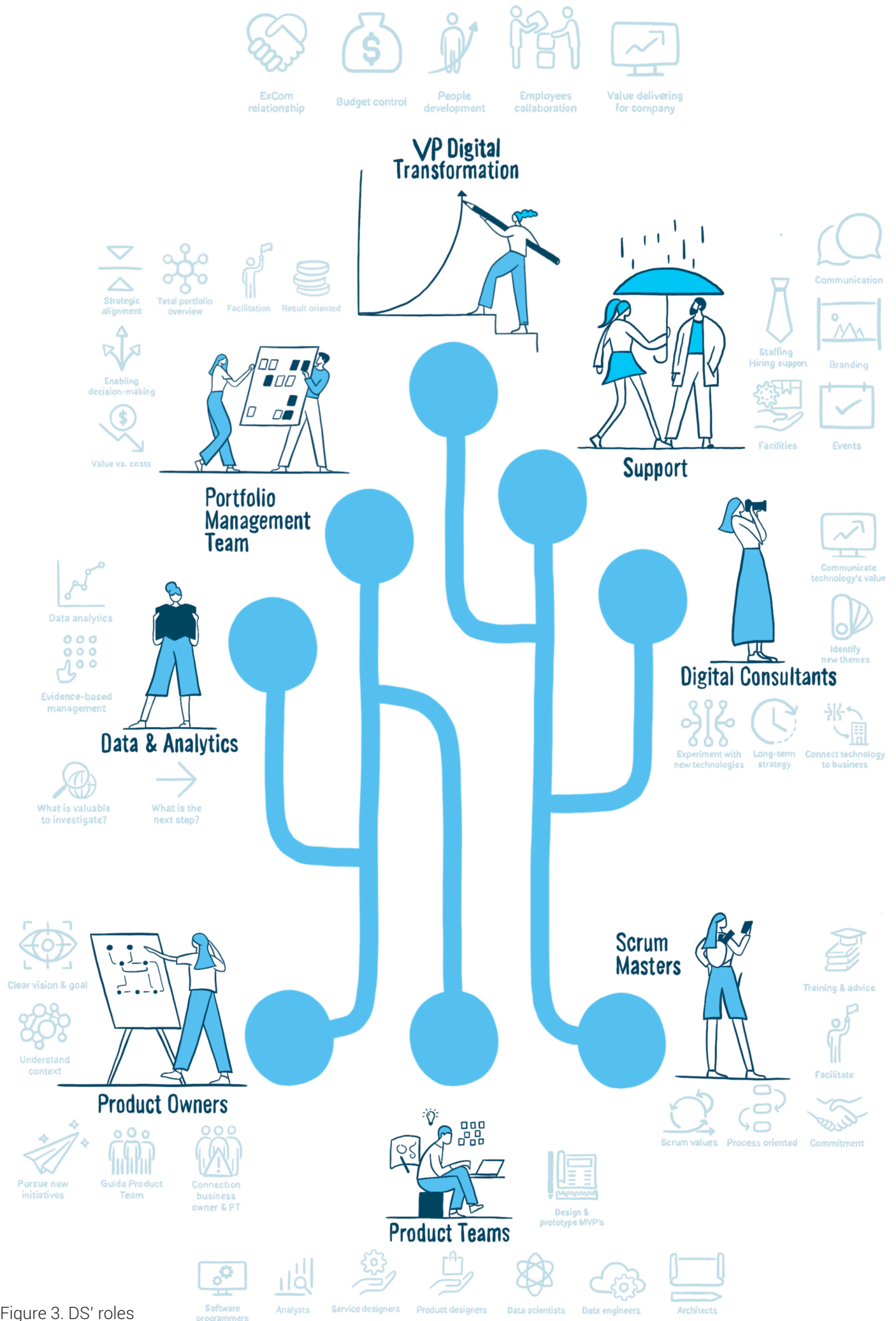


Figure 3. DS' roles

Management is mainly involved in the early stages of the Scrum Framework. **This thesis is about “the beginning of the process”, which roughly means the framework’s first two phases.** However, Portfolio Management is responsible for creating an overview of all the projects and guiding the delivery of value during all the Scrum framework steps. The tasks

“examining to strategy”, “prevent overlap”, “check connection with business”, “gather new opportunities”, “problem statement” and “value estimation” have a direct relationship with the research question: these are the actions that Portfolio Management is currently carrying out. It does not mean that these actions are set in stone; they can be changed during the thesis.

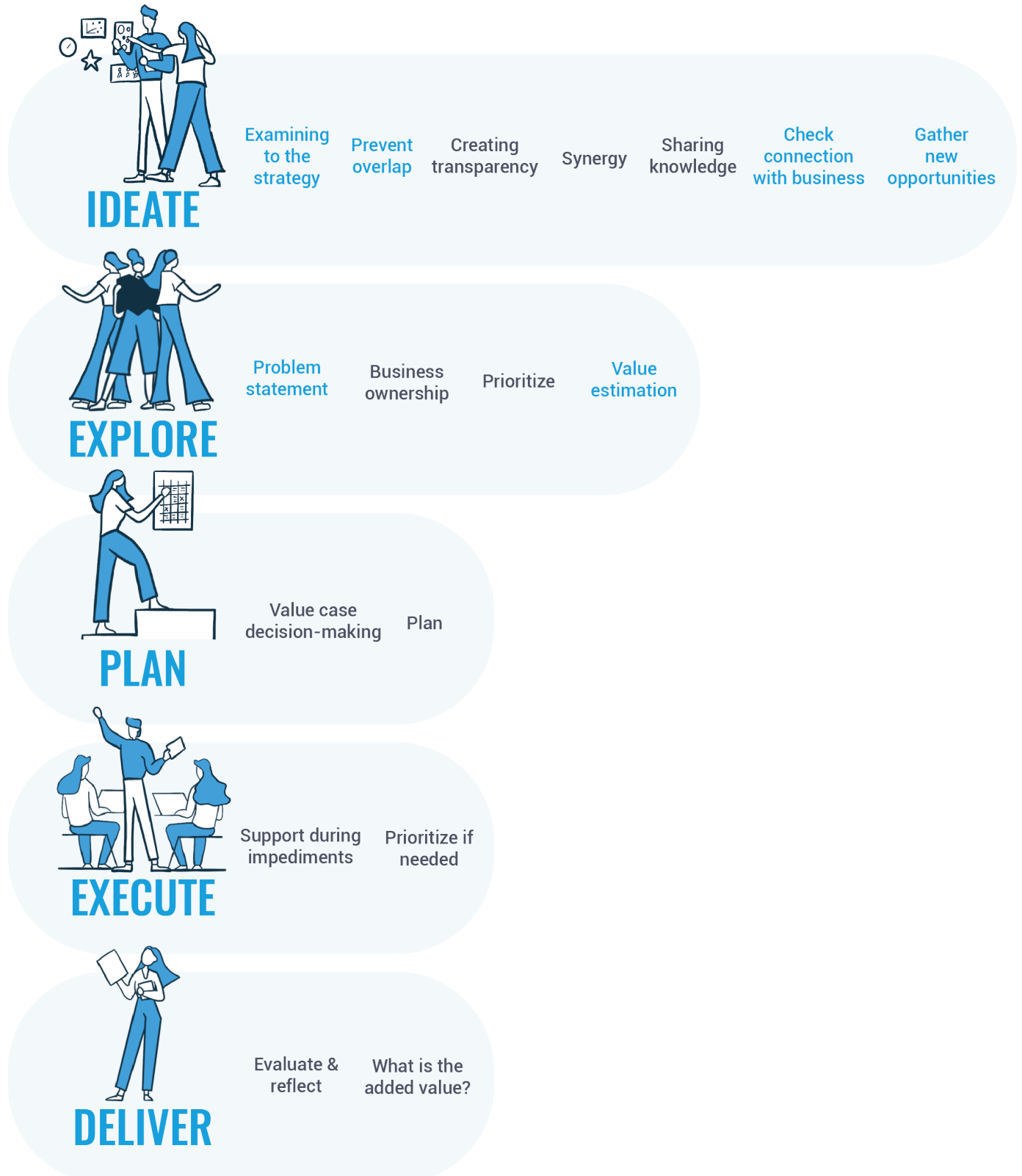


Figure 4. Portfolio management tasks

# 3 PROBLEM DEFINITION

Portfolio Management is responsible for collecting new innovation initiatives. Because initiatives' content varies widely, there is no fixed format that helps to generate them. In an ideal situation, all employees of DS are enthusiastically looking for new initiatives. Therefore, **it is desired to have a structure that indicates how to generate and identify new initiatives.**

Next, initiatives must deliver value at the end of the process. **A precise formulation of the initiative at the beginning of the process increases the chance of a successful outcome.** This formulation indicates what to focus on. Besides, product teams work more efficiently when they have a clear goal in mind. The question is how to shape the initiative at the beginning of the process.

As mentioned before, **DS longs for a way to create insight into initiatives' potential value.** DS' portfolio consists of initiatives that differ significantly in terms of content. On one side, you have core initiatives; these are more focused on contemporary problems. On the other hand, there are transformational initiatives; they aim at long-term visions and are very abstract. These differences make it challenging to compare initiatives' potential value. **Creating insight into the potential value** (consisting of feasibility, desirability and viability) **in an early stage helps DS to prioritize in a later phase.** These issues are central to this study and have led to the main question. The question is divided into three sub-questions.

## RESEARCH QUESTION

***What method/product/service can be designed to quickly generate and shape initiatives by DS that enables them to choose the most relevant initiatives in line with DS' strategic vision?***

## SUB-QUESTIONS

- 1. How can you generate new initiatives for DS?**
- 2. How can you shape initiatives in order to add value to the strategy?**
- 3. How can you quickly create insight at the beginning of the process into the added value of an initiative?**

## 4 ASSIGNMENT

*The assignment is to design a method, product, and/or service that can quickly generate, shape, and create insight into an initiative's added value, so that it contributes to DS' strategic vision.*

**The design should be future proof; this means strategically aligned and deployable in the long term (where other visions may apply).** It is required to have an understanding of the problem's scope. The context factors and relevant stakeholders should be mapped to find connections and possibilities. This involves research into stakeholders within and outside DS and inspiration from other industries. Digital transformation plays an essential role within DS and must be included in the analysis. Part of the assignment is the strategic alignment of initiatives with DS' strategy. At the moment, DS focuses on digital innovations and transformations. In the (near) future, this strategy will be adjusted. Co-creative sessions, literature reviews, and an iterative approach will validate the design. **This graduation project will investigate a current issue at DS, a structural and flexible outcome in line with strategic vision might be implemented in the future.** The research question falls within the domain of Portfolio Management as they are responsible for it. A good design that solves the problem is essential for Portfolio Management. However, they take an open attitude about the approach and how it will be resolved.

in the development of ideas.

The research takes place simultaneously within DS, in literature and other industries. Knowledge obtained during the literature study is applied within the observations and interview set-up. All this knowledge is collectively transformed into ideas during the ideation phase. Findings and concepts are then tested and validated within DS.

**Since much information and many details have been used throughout the project, it can be overwhelming to track the project's main points. The overview on the next page serves as a guide and communicates the essence of the process.**

## 5 RESEARCH SET-UP

The following page shows an overview of the research set-up of this thesis. The triangles indicate what kind of knowledge is obtained in what form of research. Interviews result in explicit information where you follow what people say. A disadvantage of this method is that it often results in the "say/do dilemma"; what people say is different from what people do (Sanders & Stappers, 2012). Therefore, this technique is used in interviews with external industries. These interviews are meant to inspire the ideation phase, and subjective information is allowed. Observations have been carried out within DS to discover what people do and how they act. These observations will be carried out throughout the master thesis, especially during the portfolio sync and the portfolio event. Generative sessions are also conducted with IDE Students. Future scenarios, knowledge and feelings are applied

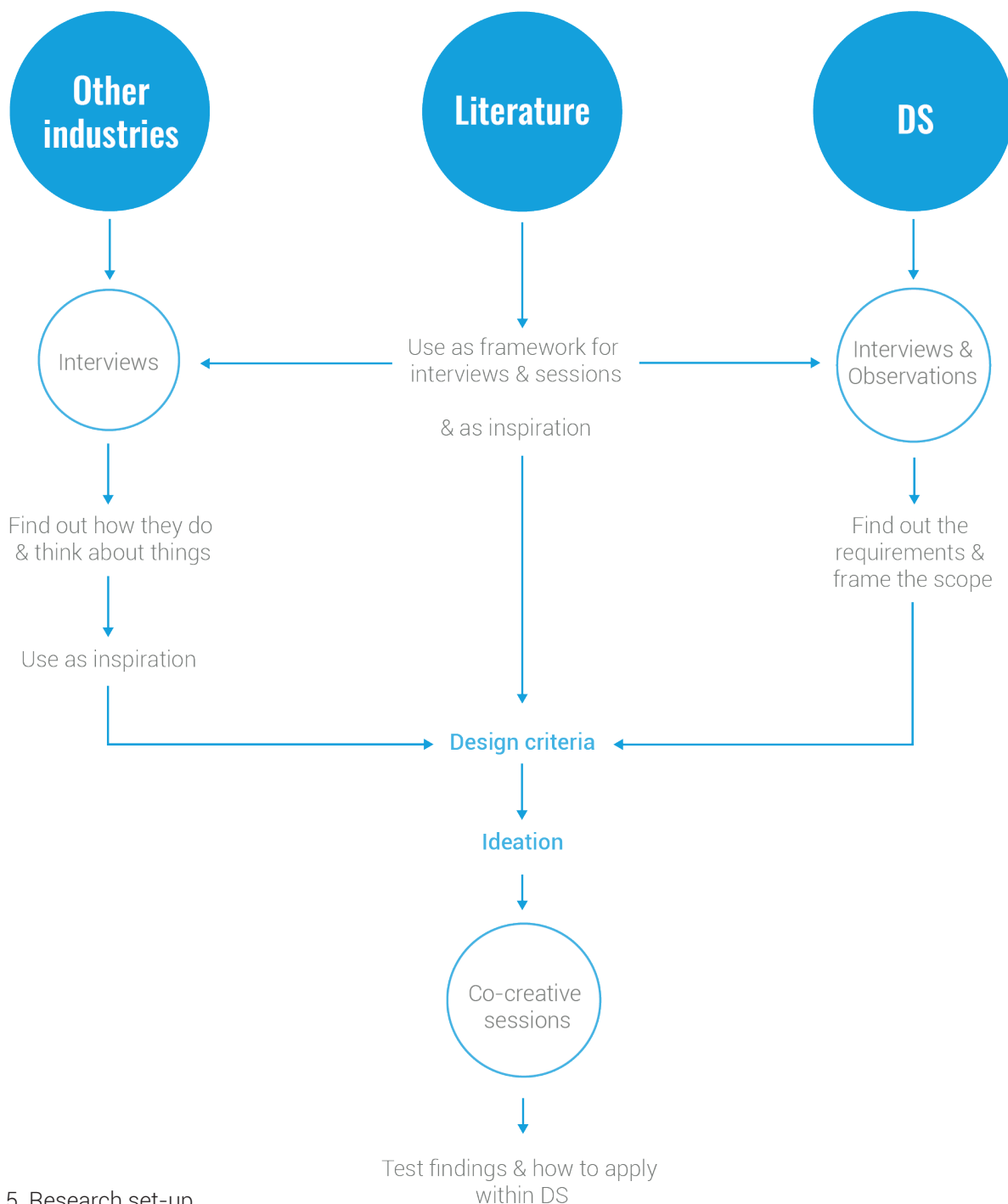
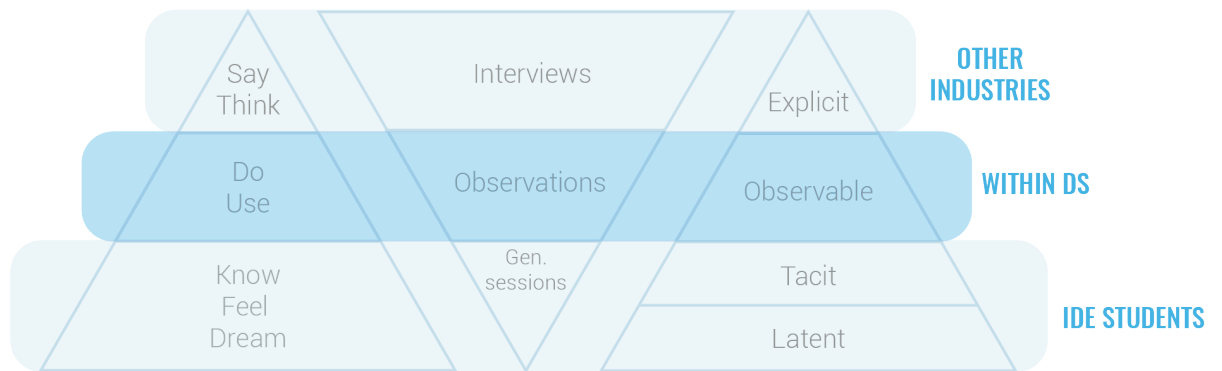


Figure 5. Research set-up

# PROBLEM FRAMING

*During this chapter, a literature study within the scope is performed. The literature study concludes with the most important insights within the assignment. Furthermore, observations and interviews within the DS context are conducted. Based on these insights, the challenge is redefined.*



# 6 LITERATURE STUDY

The literature discussed in this chapter forms the basis of this thesis. It broadens knowledge on the subject and provides possible frameworks that can be used later on. Figure 6 shows the areas related to the research question.

Scientific studies have been complemented with articles published by companies (which have conducted research as well). Scientific papers provide reliable reasoning. However, the thesis is practice-oriented and will be supplemented with examples and articles from practice. Articles published by IDEO, Harvard Business Review and McKinsey & Company, often contain extensive studies and therefore contain valuable information. The literature study covered three primary studies about portfolio management, which were later be applied in analyzing interview results. In addition, research was conducted into other studies concerning the sub-questions. The thoroughness of all reviews is explained in appendix 3.

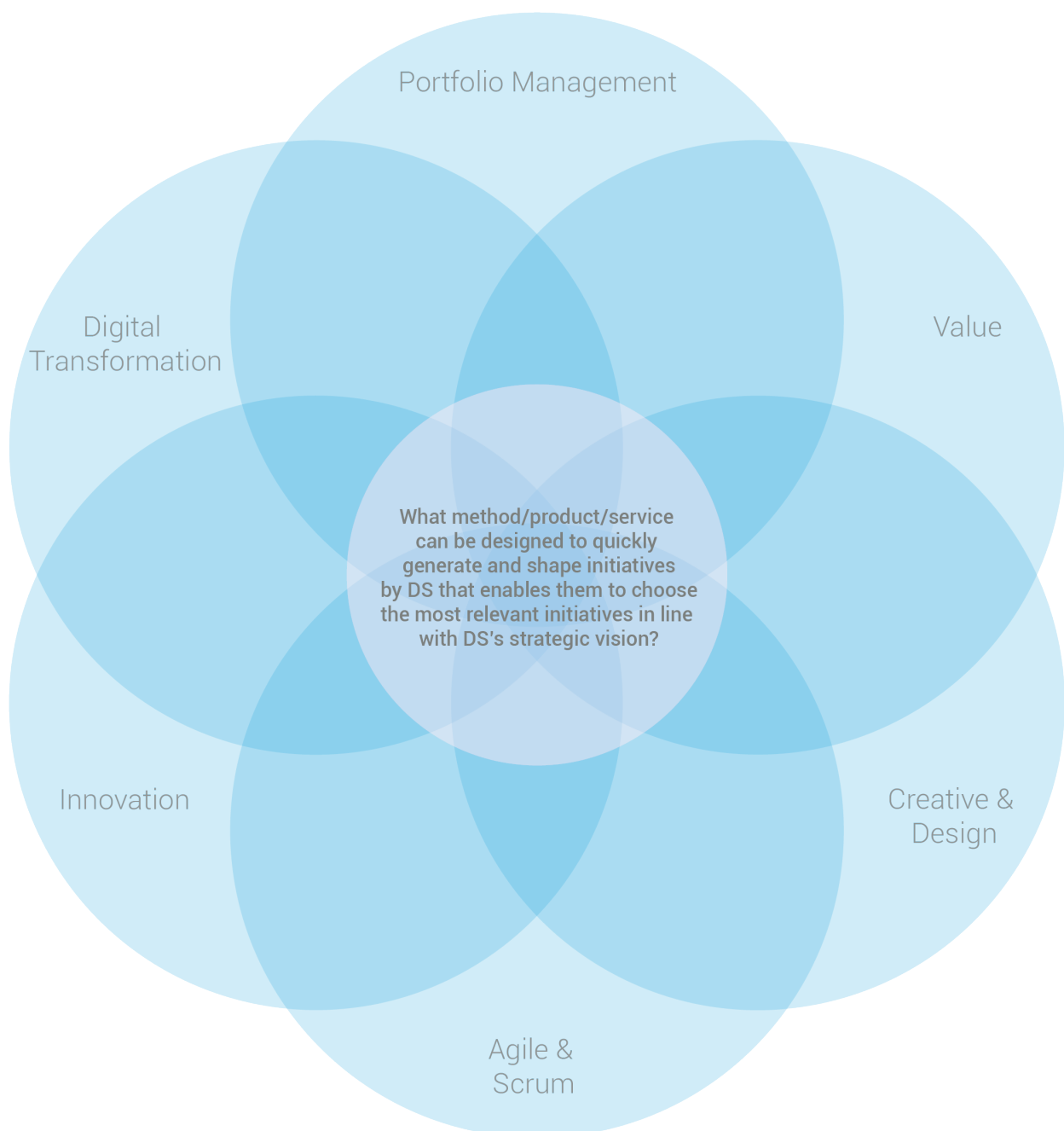


Figure 6. Scope assignment



Three studies about portfolio management that contribute to this thesis have been reviewed. Figure 7 shows the relationship between the various studies.

Previous research resulted in three successful new product development (NPD) portfolio performance outcomes: strategic alignment, maximized portfolio value and balance (Cooper, Edgett, and Kleinschmidt, 2000; Cooper et al., 1999, 2001a, 2001b). When a company possesses these three performance qualities, it will have a positive effect on their market performance (Cooper, Edgett, and Kleinschmidt, 2000; Cooper et al., 1999, 2001a, 2001b).

The reflection of a company's portfolio and the associated projects on the strategy of the company is called strategic alignment (Cooper et al., 2001). The ability to maximize the portfolio value refers to the relationship between the input of resources (efficiency) and output of value (effectiveness) concerning the company's strategy (Cooper et al., 2001). In other words, how can you ensure that the right resources are used in order to maximize the output? Lastly, a balanced NPD portfolio reflects an optimal portfolio distribution, which concerns the degree of risk per project. Jansen, van den Bosch & Volberda (2006) conclude that a company should divide its attention and energy between incremental and radical innovations at the same time.

Kester, Hultink and Griffin (2014) identified three elements of portfolio decision-making effectiveness that lead to portfolio success. The term "effectiveness" indicates the extent to which the desired organizational goals are achieved (Ostroff and Schmitt, 1993). Companies use three elements to evaluate their portfolio decisions: portfolio mindset, focus and agility. Portfolio mindset refers to the extent to which companies decide on activities to achieve a portfolio of options best supporting the company strategy. Everyone involved should have a clear understanding of each project's contribution to the firm's strategic goals. Therefore, it is important that companies centralize information about innovations (Obwegeser, Yokoi, Wade and Voskes, 2020). The second element of effective portfolio decision processes mentioned by Kester et al. (2011) is focus. Once the right strategy is formed, it must be fully embraced by the company (Catlin, Scanlan & Willmott, 2018); everyone needs to understand the business goals and how to achieve them.

Finally, agility is an increasingly common term in literature but also in practice. According to Kester et al. (2011), companies need to respond quickly to changes in the market to make effective portfolio decisions. An agile company is flexible, reacts quickly, and reprioritizes projects and reallocates budgets when necessary.

**The design must meet the elements mentioned by Cooper et al. (2001): strategically aligned, maximize portfolio value and portfolio balance. During observations and interviews with DS, it will be discovered what maximal portfolio value for DS entails. The same applies to DS' portfolio balance. Furthermore, the design must create a portfolio mindset. A portfolio mindset supports DS in making decisions, which can be backed by centralizing information. Moreover, the design should empower employees to focus on DS goals whilst generating and shaping initiatives. Finally, agility must be part of the design so that DS can respond quickly and flexibly to unexpected events.**



The study of Meskendahl (2010) has designed a framework that involves implementing strategies. The framework's different elements are strategic orientation, project portfolio structuring, project portfolio success (based on the research of Cooper et al. (2001)) and business success. The elements "strategic orientation" and "project portfolio structuring" are essential for this research, as these are the actions that influence portfolio success. Strategic orientation is about the overall mindset of a

Figure 7. Three studies about portfolio management

company (Venkatraman, 1989). Analytical behaviour refers to a companies' skills to systematically collect information and build knowledge from there (Morgan and Strong, 2003). When the company can analytically collect and interpret data, it will result in competitive advantages (Morgan et al., 2003). According to Archer et al., (1999), companies must carefully consider internal and external data before making strategic portfolio decisions. A risk-taking posture describes the extent to which a company seeks out new markets, trends, developments and technologies (Miller and Friesen, 1978). A risk-taking posture is essential when a company wants to achieve transformational innovations (Nagji and Tuff, 2012). An aggressive stance describes how companies secure their market position vis-à-vis competitors (Fombrun and Ginsberg, 1990; Lumpkin and Dess, 2001).

The first element of project portfolio structuring is consistency. Consistency is about the extent to which portfolio planning and strategy are related (Park, Hartley and Wilson, 2001; Reitmeyer, 2000; Schäffer, 2007). Portfolio goals must be clear to everyone before a selection of projects is made. The second element, integration is about the degree in which other departments are involved in making portfolio structuring decisions and how different perspectives are considered (Archer et al., 1999). Thirdly, portfolio structuring is about capturing procedures, schedules, agreements, etc. These actions are called formalization. Finally, a certain degree of diligence is significant for the structure of the project portfolio. Diligence is about a precise and motivating way of working. According to Cooper et al. (2000), it has to do with the company's perception of its portfolio goals and whether it can make decisions that positively contribute to the firm's strategy.

**Meskendahl's elements refer to a portfolio mindset and focus (Kester, 2011). For instance, consistency, integration and formalization can be part of a portfolio mindset. Formalization shows that a structure is needed within the portfolio process. Furthermore, Meskendahl advocates that a mix of analytical, risk-taking and aggressive behaviour affects the overall portfolio results. Therefore, this can be perceived as an element of the maximal portfolio value (Cooper et al., 2001). External interviews will discover which behaviour is essential for innovation departments.**

Various studies contribute to gain insights in how to generate initiatives. According to Wilson, Greenberg and McKone-Sweet (2011), leaders should be intensely aware of what they know, whom they

know and who they are. Moreover, entrepreneurial leaders must ensure that the company conducts conflicting activities which shift between "prediction" and "creation". Prediction is about using existing information (analytical behaviour), and creation is about using new data (risky behaviour). Another study investigated nine building blocks for digital transformation (Westerman, Bonnet and McAfee, 2014). These elements can be divided into three subparts; customer experience, operational processes and business models. No company that participated in the study appears to have been successful in all nine elements. Therefore, just as Kester et al. (2011) claim, focus is essential. Companies must be continuously looking for new opportunities and redefine their ways of working (Westerman et al., 2014). According to Rosemann (2012), organizations must have an intrinsic motivation to innovate. Innovation must arise from strategy (this adds to previous research (Kester et al. (2011); Cooper et al. (2001))).

**The design must ensure that those involved are aware of their "bubble". In addition to shaping and generating, innovations require a combination of analytical and risky behaviours. The European Airline must continuously be on the lookout for innovation opportunities.**

Shaping is about creating new initiatives so that they ultimately yield as much value as possible. The Frame Innovation method developed by Dorst (2015) explains how to address an initiative once it has been identified. The method guides users in first exposing the problem, then creating an overview of all parties involved, and finishing with a new context. Dorst lists four basic reasoning patterns people use when solving problems. These reasoning patterns stem from the distinction between elements, patterns of relationships and outcomes.

**Dorst's method may be relevant to this thesis as it creates new solutions, proposes an original approach to complex problems in order to maximize potential value.**

Theory suggests the importance for companies to perform a quick screening of the potential value of innovation projects (Rosemann, 2012). Several studies explain how to create insight into innovation projects.

Companies often use numbers in prioritizing projects; the disadvantage is that it does not provide clear insight into the evaluation criteria (Lin and Hsieh, 2004). Moreover, it appears that decision-makers often have to make decisions based on incomplete

information (Lin et al., 2004). Linguistic variables may be a solution, meaning words or sentences in a natural or synthetic language.

Several tools were reviewed that may be of value for this thesis. The portfolio matrix (Lin et al., 2004) aims to provide insight into a company's market position based on its portfolio. A combination of external and internal factors is assessed. The 3Cs model (Hatten and Rosenthal, 1999) stands for customer relations, functional competences and process capabilities. Previous research (Obwegeser et al., 2020) shows that innovations can be categorized and assessed according to two dimensions: value potential and the degree of feasibility.

Another way to make value visible is to use Evidence-Based Portfolio Management (EBM). EBM ensures that companies build the smallest solution for a concept (MVP) as quickly as possible and based on that, validate whether it offers the desired result. Therefore, it is important to select experiments on their learning potential; otherwise, everything can be called an experiment (Pisano, 2019).

The Innovation Ambition matrix (Nagji and Tuff, 2012) is a framework that gives insight into a portfolio and the extent to which it can safeguard the business strategy. According to Nagji and Tuff (2012), companies with the strongest innovations have the right balance between the matrix's three horizons: 70% to core innovations, 20% to adjacent innovations and 10% to transformational innovations. However, the balance will vary from company to company according to several factors.

**From my research reviews, I conclude one cannot use hard data at an early stage to create meaningful insights. As, numbers do not reflect how decisions are made, I believe the use of words or subjective information may be better. Decisions are often based on desirability, feasibility and viability. EBM is already applied within DS, a design that immediately tests initiatives for value would fit within DS' vision. The proposed balance by Nagji and Tuff (2012) would apply to the entire company, where DS focuses mainly on transformational innovations and thus holds that 10%.**

## CONCLUDING THE LITERATURE

Below is an overview of the main conclusions from the literature study. The follow-up to this report will bridge the gap between theory and practice. The three main studies will be assessed on empirical findings, and these outcomes will serve as an inspiration for the ideation phase.

- DS' innovations should be **strategically aligned**, contribute to a **balanced portfolio** and **maximize the portfolio value** (Cooper et al., 2001)
- The design should create a **portfolio mindset, agility** and **focus** whilst generating and shaping initiatives (Kester et al., 2011).
- The elements **consistency, integration, formalization** and **diligence** from Meskendahl's study (2010) should be taken into account when generating and shaping initiatives.
- European Airline should balance the portfolio between core, adjacent and transformational innovations, allowing DS to focus mainly on **transformation innovations** (Cooper et al., 2001; Tuff et al., 2012).
- A mix of **analytical, risk-taking** and **aggressive behaviour** should be present while generating initiatives (Meskendahl, 2010).
- Innovation shapers should be **aware of their "bubble"** (Wilson et al., 2011).
- Companies must be **continuously looking for new opportunities** (Westerman et al., 2014).
- **The Frame Innovation** method proposes an original approach to complex problems (Dorst, 2015).
- Decision-makers often have to make decisions based on **incomplete information**, therefore figures and numbers do not reflect how decisions are made (Lin et al., 2004), and the use of words or subjective information is preferred.
- A variation on **desirability, feasibility and viability** is often used to assess innovations on value (Lin et al., 2004).
- Companies should **centralize** innovation information to get a portfolio mindset (Obwegeser et al., 2020; Kester et al., 2011).
- First determine your **goal**, then choose the initiative that realizes that goal. (Pisano, 2019; scrum.org, 2019).

# 7 INTERNAL FINDINGS

*This chapter provides an overview of the problem framed by observations and interviews within the DS context.*

## 7.1 OBSERVATIONS

*Observations within DS have led to interpretations of the problem. These interpretations were formed during the portfolio sync, the portfolio event and informal conversations. By using the WWWWWH method (appendix 4), the most important findings regarding the problem have been mapped and summarized below.*

One of the informal findings is that some European Airline employees tend to be more solution-oriented instead of problem-oriented. During one observation, it appeared that a few initiative takers tried to avoid criticism by first gathering information about the intake. Because time and effort has been put into the intake, a potential risk was that the person acquired a personal interest in the initiative's successful onboarding. One interviewee said that some people don't bother to review all projects although they have access (this is conflicting with the element "portfolio mindset" of Kester et al. (2011)). Because DS' portfolio consists of different initiatives in terms of content (core, adjacent and transformational innovations), several employees highlighted the difficulty of comparing added value between initiatives. No fixed criteria can be used. Furthermore, when intakes are just received, they are not assessed on their feasibility. Observations during the portfolio event and portfolio sync showed no structure was applied in the shaping of initiatives. Observations and interviews have shown that the problem occurs when projects are spotted and subsequently located at the opportunity backlog.

A few DS employees indicated that the problem applies to all DS employees: when they put effort into an initiative that is not selected, they want insight into that reasoning behind that choice. The portfolio management team is responsible for creating an overview of initiatives and an estimate of value delivery. When you think a step further, the entire company ultimately has an interest in the problem. The goal of DS is to improve the European Airline business. When the most valuable projects are executed, they will positively affect the rest of the company.

Informal conversations revealed a possible cause of the problem is a difference in thinking. When employees have a different mindset than DS' vision, it is challenging to adjust it. Next, intakes are discussed

in the portfolio event, always naming the five criteria of the strategic filter first. Because these criteria do not consist of hard facts and figures (impossible at an early stage, as Lin et al. (2004) suggest), employees may tend to make choices based on gut feeling. Finally, a few initiators indicated that they experience mandatory tools as challenging since they do not 100% fit their way of working.

The problem revealed appears to have three causes. First, people use different approaches and methods and are therefore used to a different structure. Second, technological developments in the world are accelerating, making executing the best projects increasingly important. And lastly, the crisis caused by COVID-19 makes quick validation even more important: time is money!

**From the observations and informal conversations, it can be concluded that the design should support employees to focus on problems instead of solutions. The design should prevent DS employees develop a personal interest in initiatives. It is important that DS employees gain an intrinsic motivation to maximize the projects' value. Lastly, the design must offer both freedom and structure during the shaping of initiatives, and alert participants to their biased truth.**

## 7.2 DS INTERVIEWS

*Observations within DS were supplemented with insights of three MT members during interviews. The WWWWWH method was applied again to gain a complete understanding of the scope of the problem (appendix 5). Reach out to the author of the thesis for the transcripts of the interviews.*

The interview results are combined in statements (figure 8) and aim to discover the interviewees' desired situation which will be included in the ideation phase. It might be confusing that "the how questions" are also answered. I want to stress that these statements are about the desired situation of DS.

The insights in the figure provide a better picture of the purpose and core of the assignment. To summarize, **DS' initiatives are insights, problems or solutions whereby you can improve the company's operational side in the short and long term by applying new techniques or methods. Everyone should always be on the lookout for new opportunities; you can find them everywhere. Initiatives should be shaped by shifting the focus unambiguously from solution to problem. Lastly, all essential elements should be defined within a two week time-box.**



	How can you generate new initiatives?	How can you shape initiatives in order to add value to the strategy?	How can you create insight at the beginning of the process into the added value of an initiative?
What?	Initiatives for DS are insights, problems or solutions whereby you can improve the operational side of the company in the short and long term through the application of new techniques or methods.	Value for DS is derived from the reason you exist; internally optimizing and improving the European airline.	The beginning of the process is visualized in 'PM scope'.
Who?	Everyone is responsible for generating initiatives, but not to the same degree.	Everyone could shape initiatives, it depends per time who should be responsible.	The initiative taker should feel responsible for creating insight for everyone in order to get feedback about the project.
Why?	You should generate new initiatives so that you can compare on value.	You should shape initiatives in order to shift the focus from solution to problem unambiguously.	You create insight because it clarifies where you actually have to deliver value.
Where?	You can find initiatives everywhere: other industries, inspirational speakers, other disciplines, etc.	<i>Part of research question</i>	<i>Part of research question</i>
When?	Everyone should generate initiatives always.	You want to understand all the essential elements of an initiative within a time-boxed phase.	You create insight at the beginning of the process, but it never hurts to do so at other times.
How?	You generate initiatives because it is in your DNA. Continuously explore, experience and share information.	You should frame the initiative into an opportunity with a multidisciplinary group.	DS is used to create insight by events, artefacts and tools. However, this is not set in stone.

Figure 8. Interview results DS

## 8 CHALLENGE

After conducting the literature study and internal observations, the problem definition has not changed. However, these actions have led to insights that refer to the possible solution (further elaborated on design criteria) and insights that reflect essential elements of the problem. The latter are briefly described below.

The question **"What makes the problem a problem?"** can be answered in several ways and refers directly to the problem's main parts:

- The value of **openness** makes it **challenging to give structure** and guidance to new initiatives.
- There is **no format** yet that **compares core, adjacent and transformational innovations** on value.
- There is a difference between saying and doing: **not everyone pursues DS' values with 100% certainty.**
- Not all initiators focus on DS' goal; **sometimes, personal interest plays a role.**
- The problem is **more significant than only the DS context**; inspiration can be sought in other industries.
- DS employees are **more likely to adopt free tools** than mandatory tools.
- Because **information is often incomplete** in an early stage, **gut feeling** appears to play a role in decisions.
- In an early stage, initiatives are assessed only on **desirability and viability.**
- A **fixed structure is contrary to the agile way of working**; performing activities must be flexible.
- When initiators work **alone**, they can "drown" in their **own and biased truth.**

# EXPLORATION

*The exploration chapter discovers the established scope. The meanings of literature insights are further explored within the range of the assignment. The design criteria derived from these insights and are used to ideate. Creative sessions have led to multiple concepts that are illustrated at the end of the chapter.*



# 9 INTERVIEWS

*This chapter further explores the established scope in the previous chapter. Interviews are conducted to investigate how other innovation companies perform specific actions related to the research question. The companies must be comparable to the European Airline in terms of size, to reduce the chance that certain striking features or activities do not work for DS. The purpose of the interviews is to generate inspiration and to assess literature theory in practice.*

## 9.1 INTERVIEW SET-UP

An overview of the interviewed companies and consultants can be found below. Due to confidentiality, the name of each company and participant is replaced by a number. As can be seen in the figure, each company is active in a specific industry. The type of industries to include in the research has been carefully thought out. Since the European Airline aims to create customer experiences, it would have been interesting to interview companies with many customer touchpoints. Nonetheless, one company with no direct customer contact was interviewed, which resulted in interesting findings. It was not possible to involve every desired industry due to a limited network of contacts. A consumer goods company could have led to exciting results as well. Furthermore, experienced consultants within the field of digital innovation management were interviewed. These questions were slightly altered to make it more suitable.

The structure of the interview is inspired by literature and scope findings. The questions stem partly from literature, intending to discover how to implement literature findings in practice. For example, the interview aims to learn how companies can ensure "strategic alignment" while generating, shaping and providing insight into innovation initiatives. The interview format was semi-structured, and the

participants entered the interview "blindly" to prevent unconscious steering. More elaborated information on the interview's structure, questions and content, can be found in appendix 6 and 7.

## 9.2 INTERVIEW RESULTS

The interview transcripts were transformed into statement cards and analyzed in different ways. **The two goals were to test which theory turns out to be essential and how to transition theory into practice.** For the complete overview of the matrices, consult the author.

First, the interview results were tested against the theory of Cooper et al. (2001) and Kester et al. (2011). Interview quotes indicated whether there is a connection between the theory and a sub-question. These quotes were then combined into summarizing statements and reflect the overall outcome per connection. See figure 9 for the results.

**These insights mainly indicate which elements of the literature are essential per sub-question. First of all, it is striking that "Create insight" and "Portfolio balance" are not related. This suggests that when making innovation projects transparent, no distinction needs to be made in the project type. At least not for this assignment. Furthermore, all relations appear to be relevant to the assignment. These insights will be used to generate ideas.**

Second, the interview results were plotted on Meskendahl's (2010) findings (see chapter 6). This analysis made no distinction between the sub-questions. There are no similarities between "aggressive posture" and the interview results (appendix 8).

**All elements of Meskendahl's theory prove to be essential to the assignment, except aggressive posture. Companies indicate the importance of**

### INTERIM/CONSULTANT

#### Knowledge questions

- Strategic Portfolio Management Expert
- Interim Innovation Manager
- Strategy & Product Development consultant
- Innovation Accelerator

### COMPANIES

#### Practice questions

- A globally operating tank terminal operator
- A logistic company in the Netherlands
- A public broadcaster
- Innovation in health care
- Theme park in the Netherlands
- Supplier of telecommunication and ICT services





Figure 9. Interview results

an open attitude. They suggest that innovation departments must share knowledge and inspire each other. This is contradictory to an aggressive attitude towards the competitor.

The other elements are in line with practice. First, you need to research the problem early, be well informed, and understand the problem. You have to dare to take risks; dare to dream and look at places that do not seem directly relevant. Consistency is also essential. This is applied in practice by coming up with ideas within the focus and having a clear goal. Integrate the innovation project as much as possible by involving all key stakeholders. Furthermore, clarity, structure and a standard format support group discussions. Finally, you have to be committed to the project, but especially to the user.

Subsequently, several "stances" emerged from the interviews (figure 10). A stance refers to an attitude that companies can adopt concerning the research question. All these stances have a positive relationship with the main question or with a sub-question. Take the stance "curious" for example; when a company is curious, it will positively affect the generation and shaping of initiatives. An overview of all stances that were discovered in this research can be found below. **Stances are valuable for this research because they reflect the purpose of the solution on an abstract level. These stances will have to be further tested in the DS environment. Questions are: which stances reflect the values of DS? Which stances are essential for the sub-questions? How can the stances be applied in practice?**

At last, triggering quotes are collected and categorized by sub-question. These quotes opened my eyes and serve as inspiration.

People who are not naive and who are more realistic, see more of a barrier on the road. It does help to start something with a good dose of optimism, guts and naiveté. - P1

If all goes well, you have scoped beforehand the criteria of a good idea; the frames of the idea. You could score the ideas in the same way. - P7

[...] especially if he comes into a safe environment where his ideas are actually taken seriously. - P5

If you say how does your creativity emerge, then it is undoubtedly keeping your eyes open, going out, being curious. - P8

We want to leave our feelers on by default. - P4

With an idea, the risk and uncertainty are very high, and it gradually diminishes. - P8

I believe that meaningful inspiration, [...], results from a good understanding of the problem you want to solve. - P5

It is crucial that you listen carefully to the group of people and that you empathize in their actual problems. -P6

CURIOUS	INVOLVED	ACCESSIBLE	COURAGE
OPTIMISTIC	POSTIVE MINDSET	TRANSPARENT	EMPATHIZE
LISTERING	FEELING	GOAL ORIENTED	CRITICAL

Figure 10. Stances

# 10 DESIGN CRITERIA

The three studies of Cooper et al. (2001), Kester et al. (2011) and Meskendahl (2010) formed the basis for the literature study, DS observations and external interviews. This chapter explains how all the insights derived from these actions contribute to the thesis's further course.

During the literature study, DS observations, and external interviews, many insights related to the assignment have been found. These insights can

be categorised based on the findings of Cooper et al. (2001) and Kester et al. (2011). This is visualized below. **The four factors that appear to be most important within this assignment are strategically aligned, maximum portfolio value, portfolio balance and portfolio mindset.** The visual explains the meaning of these four elements within the scope of this thesis. These four elements have led, in some cases indirectly, to the design criteria described on the next page.

Cooper et al. (2001)		Kester et al. (2011)	
STRATEGICALLY ALIGNED	MAXIMAL VALUE	PORTFOLIO BALANCE	PORTFOLIO MINDSET
DERIVED FROM LITERATURE			
<ul style="list-style-type: none"> <li>Decisions are often based on incomplete information (Lin et al., 2004)</li> <li>Desirability and viability (Lin et al., 2004)</li> </ul>	<ul style="list-style-type: none"> <li>Strategic orientation (Meskendahl, 2010): Analytical &amp; risky behaviour</li> <li>Focus (Kester, 2011): select initiatives based on potential value (Pisano, 2019; scrum.org, 2019)</li> <li>Agility (Kester, 2011): Flexible &amp; speed</li> <li>Continuously looking for new opportunities (Westerman et al., 2014)</li> <li>Be aware of bubble (Wilson et al., 2011)</li> </ul>	<ul style="list-style-type: none"> <li>Balance between core, adjacent &amp; transformational innovations (Cooper et al., 2011; Tuff et al., 2012)</li> </ul>	<ul style="list-style-type: none"> <li>Project portfolio structuring (Meskendahl, 2010): consistency, formalization, integration &amp; diligence</li> <li>Centralize information to support decision-makers (Obwegeser et al., 2020; Kester et al., 2011)</li> </ul>
OBSERVATIONS & INTERVIEWS			
<ul style="list-style-type: none"> <li>Applicable in long term</li> <li>Fit with scrum framework</li> <li>Initiatives should fit with DS strategy</li> </ul>	<ul style="list-style-type: none"> <li>Problem focused</li> <li>Multi-disciplinary teams</li> <li>Two week time-box</li> <li>Always generating</li> <li>Aware of assumptions</li> <li>Intrinsic motivation</li> </ul>	<ul style="list-style-type: none"> <li>Short &amp; long term</li> <li>In the future mainly transformational innovations</li> </ul>	<ul style="list-style-type: none"> <li>Structure</li> <li>Transparency &amp; overview</li> <li>Support decision-makers</li> <li>Include essential stakeholders</li> </ul>

Figure 11. Origin design criteria

The insights from the previous page are summarized into the design criteria. The design criteria will be used during the ideation, development and finalizing phase.

1.

## STRATEGICALLY ALIGNED

1. The design should be future proof: that means deployable in the long term.
2. The design should fit within DS' current way of working (Scrum framework).
3. The design should contribute to the realization of DS' strategy by maintaining focus.
4. The design should embrace that information is incomplete at the beginning of the design process.

2.

## MAXIMAL VALUE

1. The design should allow DS employees to act flexible and deal with unexpected changes.
2. The design should focus on potential value.
3. The design should shift the focus from solution to problem to maximize the value.
4. The design should have a maximum lead time of two weeks in which all essential elements of the initiative are defined.
5. The design should point participants to assumptions made.
6. The design should enable participants to display both analytical and risky behaviour.

3.

## PORTFOLIO BALANCE

1. The design should apply to all kinds of projects (core, adjacent and transformational innovations), with core (mainly problems) and transformational (mostly themes) being the most important.

4.

## PORTFOLIO MINDSET

1. The design should provide structure to set up innovation initiatives to obtain transparency and overview for all DS employees.
2. The design should support decision-makers to make decisions and to substantiate them.
3. The design should enable participants to integrate essential stakeholders.
4. The design should make the participants committed to the project and end-user.

# 11 IDEATION

*The research insights and design criteria have been used to generate solutions for this thesis.*

## 11.1 LITERATURE INSPIRATION

Frame innovation is a book written by Kees Dorst (2015) in which **he proposes a new method for solving complex problems**. The Frame Creation method provides a better understanding of the “real” problem and has an extensive range of solution directions. The Frame Creation method consists of nine steps in which only the first six are relevant to this thesis. An overview of the steps are shown below. A more detailed overview can be found in appendix 9.



Rik Vera (2018) says that managers should look at the world through the right lens. Furthermore, he mentions the **“pirate model”** in which an approach is explained to “freeze” the company while testing new and wild ideas. Experiments for the future are conducted, and safe havens for the company are created over time. Moreover, Vera (2018) mentions that you should convert impossibilities into step-by-step innovation. Significant problems or ambitions can be divided into small pieces to overcome obstacles step by step.

Jasper Baggerman has written a book about how to get a grip on innovation as a company (Baggerman, 2019). Start with creating and communicating the **“right” strategy**. Then determine what the innovation should deliver. Next, define the criteria and finish with engaging key stakeholders.

Lastly, there are a few lessons of De Waal (2017). As mentioned by Wilson (2011), every creature in the world lives in its bubble. This concept is referred to by Von Uexküll (1934) as the **Umwelt**. De Waal explains that it is essential to identify the Umwelt

when experiments are carried out. This also applies to DS and innovation in general, since it advocates implementing EBM as quickly as possible. Also, it is useful to test more than only the user. As De Waal (2017) says, you need sceptics to make progress; they keep you alert. Additionally, testing is an iterative process and very useful. De Waal (2017) mentions that researchers must always be **critical**. The same rule applies for innovation departments since potential value is often estimated in an early stage.

## 11.2 CO-CREATIVE SESSIONS

Based on the stances emerged from the interviews, various co-creative sessions were established with fellow design students. In the first session, **participants were asked to transform abstract stances into concrete examples**. The most relevant examples are shown on the next page. In the second and third session, these concrete examples were linked to the sub-questions, and therefore the participants created design scenarios. This session was intended to stimulate out-of-the-box ideas and create fictional solutions. Engaging scenarios or ideas that emerged from this are collected on an “Ideas Board” (appendix 10).

## 11.3 IDEAS

**The next page shows ideas that have been generated based on the design criteria, literature inspiration and interview results** (figure 12), **and combinations of different ideas have led to four concepts** (figure 13).

As you can see in figure 13, the first concept consists of many sub ideas. This means that the concept has potential to meet many conditions and criteria of this thesis. This concept will be developed further and is called the frame toolbox (inspired by Dorst’s Frame Creation method (2015)). As discussed earlier, **this method might be interesting for the assignment as it shapes problems into many solution directions**. The highlighted ideas from figure 12 are part of the frame toolbox.

Besides, three concepts have been developed that are not further elaborated for various reasons. The first concept to be eliminated is an app where people can generate opportunities and inspire others in the whole company. Another concept that is difficult to realize is the Umwelt Room: a space in which you can experience the Umwelt of others through the five senses. The last concept to be dropped is the Inspiration Room: an inspiring environment that stimulates employees to create new ideas.

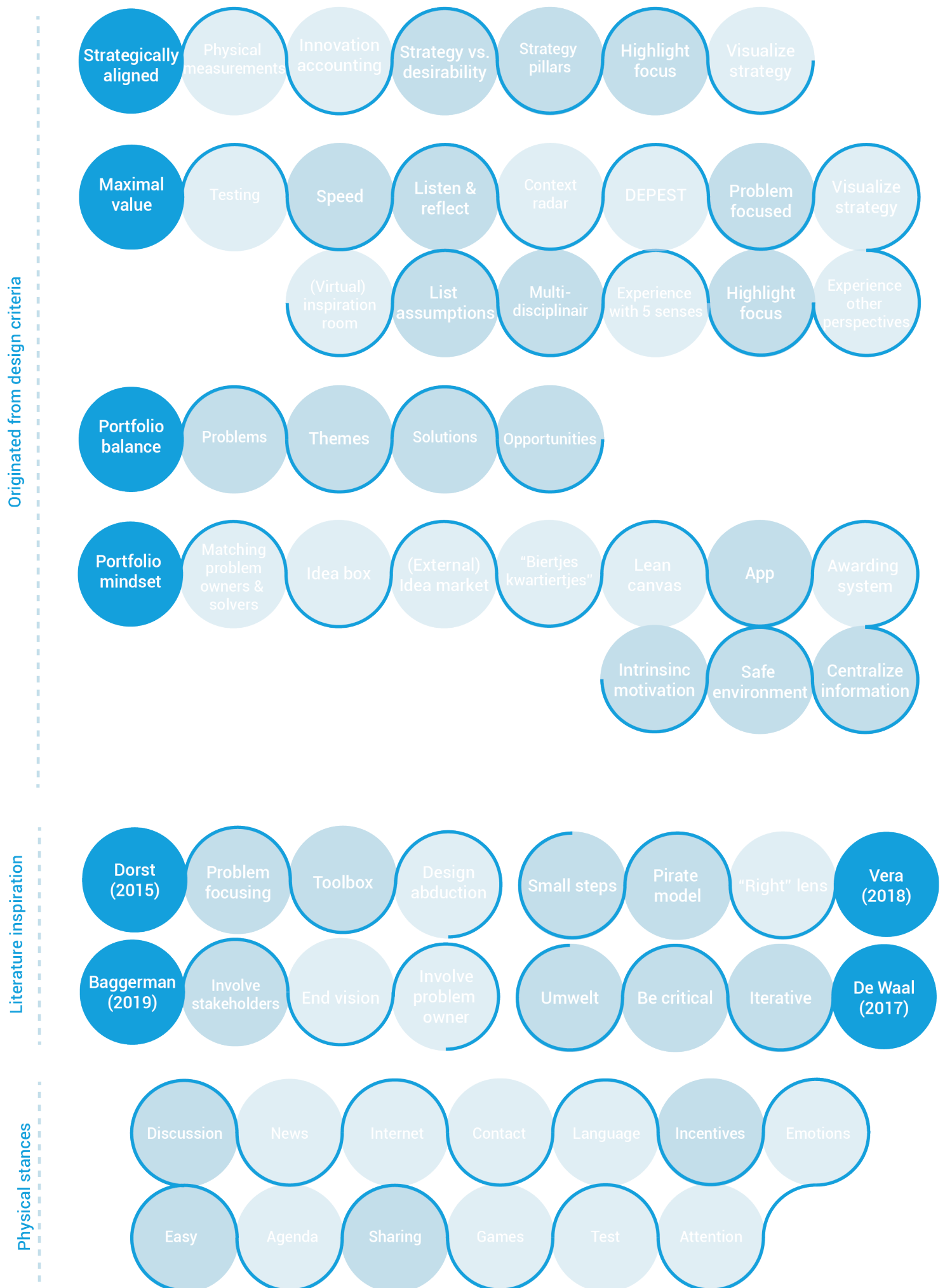
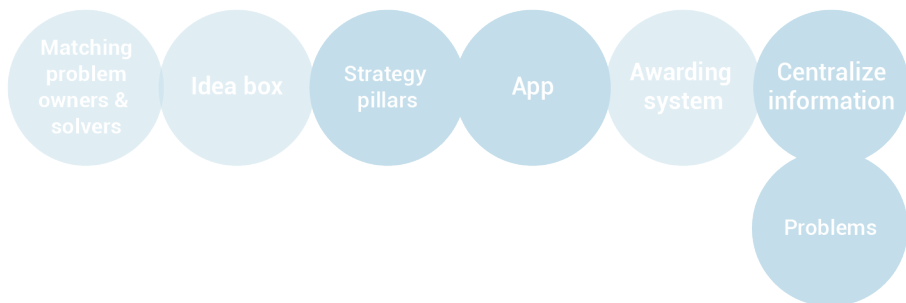


Figure 12. Ideation results

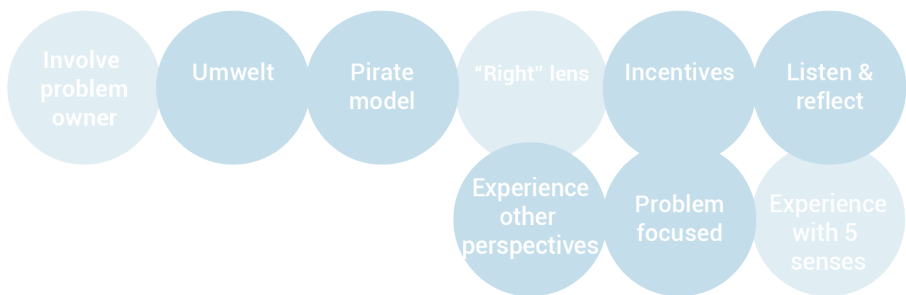
The **frame toolbox** consists of many sub ideas. This shows its potential to meet all the design criteria.



The **app that generates initiatives through the whole company**, appears to be challenging. It is complicated to create transparency throughout the company and it is impossible to give attention to all ideas.



The **Umwelt Room** is not feasible. It is (still) impossible to experience others' emotions. If technologies allow it, it would be cool to develop this in the future.



The **inspiration room** concept is not challenging enough as it mainly focuses on generating initiatives and not on the other sub-questions.



Figure 13. Four concepts

# MINIMAL VIABLE PRODUCT

*This chapter introduced the frame toolbox concept. It starts by giving a description of the content and its challenges. Next, a short explanation of the theory is presented. It ends with providing an overview of all the assumptions, hypotheses and questions underlying the concept.*





# 12 CONCEPT

From the ideation sessions, a concept has emerged that will form the foundation for the development phase. The concept is referred to as the frame toolbox.

## 12.1 FRAME TOOLBOX

The frame toolbox aims to transform the Frame Creation method into a tangible product, **where initiative owners feel supported in the rapid generation and shaping of initiatives with maximum value as output**. Performing the frame toolbox results in several outcomes that indicate what focus product teams can have. These outcomes are referred to as the focus points. The frame toolbox is based on the Frame Creation method devised by Kees Dorst (2015). The focus lies on the first six steps, of which the order depends on the initiative. Subsequently, the type of initiative represents the starting point. The method is applicable problems, opportunities, themes and solutions. An extra tool was added, which enables participants to create insight into potential value. The figure below shows how each element can be applied in the frame toolbox.

The Frame Creation method has been converted into

a toolbox applicable for the DS context. In order to solve the sub-questions of the thesis, the concept must meet the design criteria. The Pirate model of Vera (2018) enables companies to test new initiatives without influencing the company's current state. Therefore, the toolbox will be executed in a "bubble" at the beginning of the design process. This implies a fixed group of participants in a specific time frame. Next, Dorst writes that "the strength of the frame creation model lies in the fact that less experienced teams can also get really good results through the thoughtful application of the processes, principles, and practices outlined in this book" (Dorst, 2015, p.161). During experiments, it will be tested whether less experienced teams can successfully perform the frame toolbox. To work agile and meet the time-boxed criteria, the focus of the frame toolbox will be on speed. Moreover, the reframing process is about creating a new frame, whereby participants become aware of their assumptions. Dorst advocates multidisciplinary teams to conduct the Frame Creation method to unite different perspectives, causing a unique outcome. Finally, users of the method can respond flexibly to changes in the world by identifying themes.

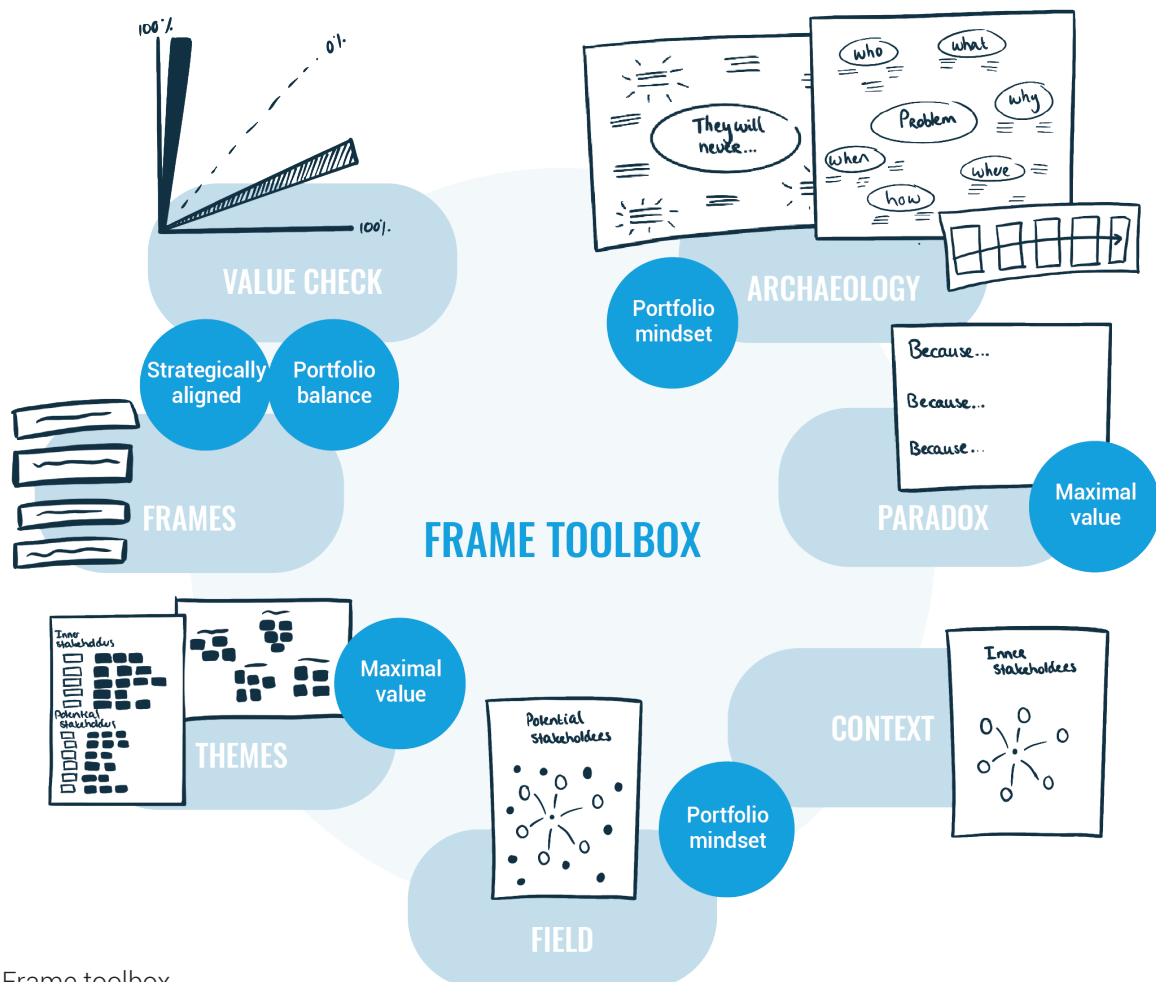


Figure 14. Frame toolbox

In the development phase, extra attention must be paid to creating intrinsic motivation, a safe environment, and centralizing information. These elements are not yet part of the frame toolbox in its current form.

## 12.2 VALUE CHECK

This thesis designed a value check tool that consists of two pillars which can both slide between 0% and 100%. The position of each pillar is determined by answering a few questions. The starting point of the initiative is assessed during the intake form. The starting point reflects whether the frame toolbox will achieve value to the end-user; this is called desirability. When the starting point matches DS' strategy in all respects, the starting point pillar will indicate 100%. The frame toolbox results in multiple focus points; these are all individually tested during the final stage "value check". The strategic fit of the focus points with DS is examined (viability). When the two pillars both indicate 100%, the framework has an "open attitude".

This represents the large number of possibilities the initiative has (see chapter 21 for more explanation).

## 12.3 TANGIBLE FORMS

The frame toolbox can be made both digitally and physically. Digital options are an app, platform or website. **The advantages of a digital toolbox are that participants are automatically supported in going through the steps, all steps are accessible and transparent, all participants can work simultaneously and from any location.** A physical form of the concept could be a toolbox with printed method cards and physical elements. An example of a physical toolbox is shown in the figure below. **A physical toolbox is attractive because users must be in the same room and stimulate each other.** Some people prefer real-life conversations instead of online. However, a physical toolbox is challenging when working from home (the current standard due to COVID-19).



Figure 15. Physical toolbox

## FRAME TOOLBOX CHALLENGES

1. How do I ensure that participants of DS also become motivated and convinced of this method?
2. The European Airline is a practically oriented company. The formulation of themes and frames, on the other hand, is an abstract activity. How can I transform these steps into a toolbox that fits the way of working of DS?
3. How do I ensure that DS employees pick up the frame toolbox?
4. What is the best tangible form? Choose one to develop as a prototype.
5. What should the steps look like and how are tools used?
6. How do I make sure that the stances from chapter 9 can be applied in the frame toolbox?
7. How do I make sure participants understand that speed is more important than accuracy in running the frame toolbox?

# 13 THEORY

Before the concept is further developed within the DS context, this chapter provides a brief explanation of the Frame Creation theory.

## 13.1 LEVELS OF ABSTRACTION

Participants can go through the toolbox in different ways; it depends on the starting point. This thesis visualizes the theory of Dorst (2015) into triangles, depicted below. The blue part of the triangle is located above the “surface”, which means it is a **concrete** element of the frame creation process. When you move to the bottom of the triangle (the light blue region), you'll find the method's **abstract** elements. These are the elements that are “invisible” to the outside world. Themes are universal topics that belong to several people in society. You can compare it with fuzzy trends in the human domain. However, themes don't have to be time-bound; for example, themes can exist for 30 years. Unconscious drivers

underly the themes; these are intrinsic motivations, values and needs. The unconscious drivers can be different for each person but contribute together to a common theme.

The figures below show the general steps participants go through when the starting point is a problem, theme, solution or opportunity.

The starting points “problem” and “theme” will be extensively tested in experiments. **A problem and theme are two extremes that are most relevant to DS. DS most often works with initiatives that arise from problems. Designing from themes represents the long-term goal that DS has in mind; experiment more and deliver fewer end products.** Due to the thesis's limited duration, “opportunity” and “solution” are not included in the experiments. However, the Frame Innovation book (Dorst, 2015) describes how to implement these starting points, which will be followed throughout this thesis.

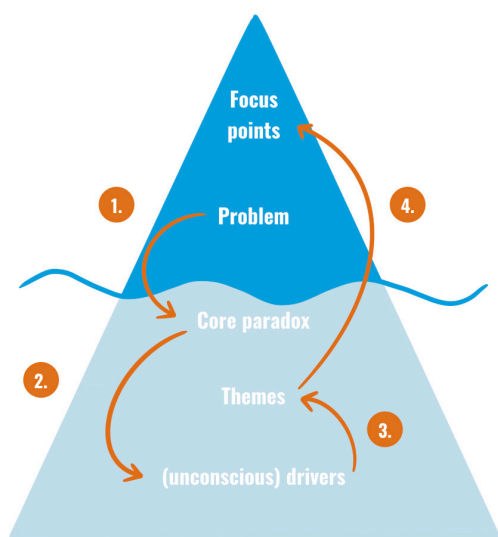


Figure 16. Problem as starting point

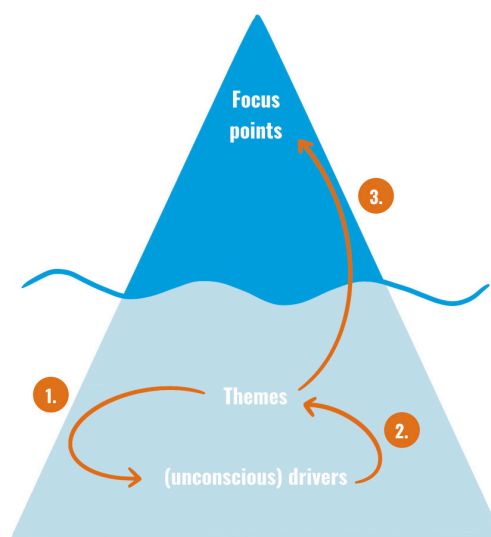


Figure 17. Theme as starting point

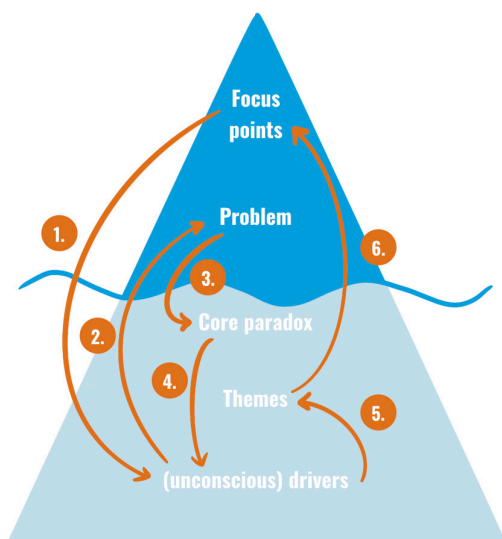


Figure 18. Solution as starting point

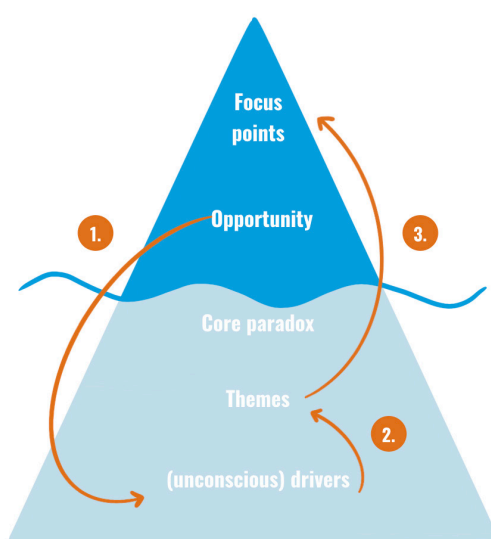


Figure 19. Opportunity as starting point

### 13.2 DESIGN METHODS & FRAMEWORKS

A design framework indicates a way of working. **DS follows the Scrum framework consisting of various elements: values, agile way of working, division of roles and beliefs.**

Various methodologies can be applied within a framework. The Lean Startup (Ries, 2013) is a method that is closely related to the Agile philosophy. Agile emphasizes speed and works in cyclical design sprints. The Lean Startup is a method that focuses on building, measuring and learning. Firstly, an idea is transformed into the simplest variant (MVP). The target group gives feedback that will be applied in the next MVP. The Lean Startup method immediately tests potential value without investing a lot of time, energy and money into prototypes.

Moreover, the Design Thinking method has been developed to solve complex problems (Rowe, 1987). Figure 20 shows **how DS follows the methodologies Design Thinking, Lean Startup and Agile within the Scrum framework** (Blosch, Osmond, Norton, 2016).

Frame Creation is also a method that advocates embracing the entire field of a problem (Dorst, 2015). Instead of simplifying problems, it is a method that delves into the core of complexity to arrive at precious solutions.

Tools can be used to implement design methods properly. Examples of design tools are the "5 why", "WWWWWH", "How might we?", "Clustering" and so on.

The frame toolbox follows the philosophy of the Frame Creation method. It focuses on quickly screening the initiative and what it may deliver. If you follow the order of figure 20, **the frame toolbox applies to the Design Thinking area. Besides, the frame toolbox follows the Agile and Lean Startup core elements: the emphasis is on speed to learn as much as possible.**

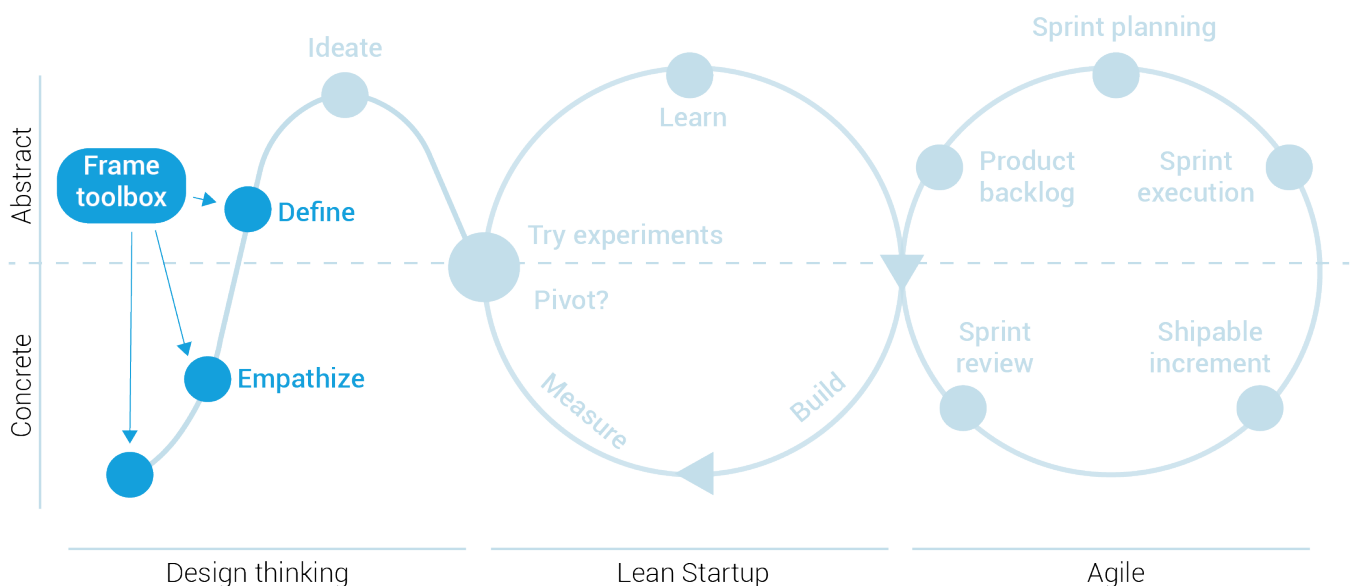


Figure 20. Design methods

# 14 HYPOTHESES

*This chapter provides an overview of the assumptions, hypotheses and challenges on which the frame toolbox is built.*

Research findings, interview results and the Frame Creation method show that the frame toolbox can be successful when specific requirements are met. In this phase, they are called assumptions because

it is not clear whether they will be successful within DS. The assumptions aim to discover whether these requirements also apply to the successful use of the frame toolbox in the DS environment.

The visual below shows the origin and the transformation of each insight into assumptions for the DS context.

## ASSUMPTIONS

1. The frame toolkit is a valuable tool to uncover initiatives within a two-week time box.

2. The frame toolkit forces participants to reframe their point of view and investigate the core of initiatives.

3. People with a lot of design experience are more likely to be convinced of this method than people without a design background.

4. A facilitator is needed to support the participants during the Frame Creation steps.

5. A multidisciplinary group increases the chance of success of frames.

6. The toolbox is more likely to be adopted when it is considered a positive resource rather than a mandatory activity.

7. In any case, a designer or expert must be present while performing the frame toolkit.

## DERIVED FROM...

- Two-week time-box (DS interview)
- "...the frame creation workshop, which normally lasts two to four hours." (Dorst, 2015, p.107)

*"Revealing the core paradoxes provides designers with an entry point for examining these assumptions." (Dorst, 2015, p.25)*

*"Experts with years of experience will have built up an acute intuition about which frames will be fruitful and lead to results and which will not" (Dorst, 2015, p.78)*

*"In this workshop, all the information is brought together, and the team is taken through the frame creation steps by a facilitator (Dorst, 2015, p.107).*

*"To achieve breadth and depth in the frame creation process, participants are strategically chosen for the different skills, experiences, and approaches they can bring to the table." (Dorst, 2015, p. 108)*

A few initiators indicated that they experience mandatory tools as challenging since they do not 100% fit their working way (internal findings).

*In studying expert designers, one can observe them making split-second decisions on fruitfulness all the time; they seem to have a special sense for this (Dorst, 2015, p.160).*

Hypotheses have been developed from literature insights and from the MVP. The combination between these early hypotheses and the frame toolbox has not been validated before. The hypotheses have been specially devised for this thesis and will be part of the

experimentation set-up. In addition, several general questions need to be answered through experiments. These questions arose from the frame toolbox challenges.

## HYPOTHESES

1. DS employees will receive the frame toolbox positively.	Intrinsic motivation (internal findings)
2. You need 3 to 4 people to complete the Frame Creation steps successfully.	Based on informal conversations
3. Examples & method cards support the participants.	Based on informal conversations
4. Potential value can be made transparent by testing the frames for desirability and viability.	Literature (Lin et al., 2014)
5. Motivated participants have less difficulty conducting the frame toolbox.	Based on informal conversations
6. The frame toolbox aligns initiatives with the strategy.	Literature (Cooper et al., 2001)
7. The frame toolbox maximizes the portfolio value.	Literature (Cooper et al., 2001)
8. The frame toolbox creates focus while generating and shaping initiatives.	Literature (Kester et al., 2011)
9. Participants will have a portfolio mindset while conducting the frame toolbox.	Literature (Kester et al., 2011)
10. The frame toolbox integrates stakeholders.	Literature (Meskendahl, 2010)
11. The frame toolbox has clear instructions and information can be shared conveniently.	Literature (Obwegeser et al., 2020)
12. The toolbox ensures the continuous generation of new initiatives.	Based on internal findings

## GENERAL QUESTIONS

1. Is the frame toolbox performing better online or offline?
2. What is the minimum required lead time for the frame toolbox?
3. How can the frame toolbox be practically applied within DS?
4. What should be on the method cards to support the participants as best as possible?
5. How can the stances be applied in the frame toolbox?
6. How do you create a safe environment for the frame toolbox?
7. What is the quality of the outcomes? How do the participants experience this?
8. How should the facilitator behave?
9. Are there other remarkable things?

# VALIDATIONS

*This chapter is characterized by building, measuring and learning. It explains the experiment's set-up, followed by a profound description of the results. It repeats the most critical findings in a separate part. Lastly, the fit of the concept with DS resources is explained.*





# 15 METHOD

*This chapter evaluates whether and how DS should apply the frame toolbox. Both validation discussions and experiments have been conducted.*

The validation conversations aimed to discover how the frame toolbox should be expressed if it is to be received positively. Validation interviews were conducted with DS employees and one external person. The DS employees either have much experience within the scope of the thesis or would ultimately be the ones who would play a significant role in performing the frame toolbox. The external interviewee is responsible for onboarding innovation initiatives in an external company. This interview aimed to discover elements of their approach that can be applied in developing the frame toolbox.

Experiments were conducted as an iterative process within the DS context and externally. Both problems and themes were tested as starting points. The purpose of the experiments was to discover how to use the frame toolbox within DS. The results of the validations have been incorporated into the concept and then tested in experiments. The results of each experiment were subsequently used in following experiments. For example, the validation interviews showed that an extra step had to be added to

become aware of your assumptions. Therefore, at the beginning participants were asked to write down their initial solutions. Furthermore, it became clear that step three and four could be combined and the themes step should be divided into separate steps. Lastly, the starting points did not always fit the DS' strategy in the experiments, and therefore, the "value check" step has been omitted. The experiments were analyzed using assumptions, hypotheses and questions.

A general overview of the experiments is given below. The method cards were improved after each experiment. Per experiment different elements were tested, namely: the use of examples, online or offline execution, time indication and guidance by the facilitator. Giving a fixed time duration per phase ensured that the experiment would not last longer than two hours (due to voluntary participation, the time had to be limited).

In the offline experiments, the participants received a lot of paper, writing material, and printed method cards. The online experiments were performed on a digital collaboration tool containing the method cards.

Appendix 12 shows the set-up of validation interviews and experiments.

PROBLEM AS STARTING POINT			THEME AS STARTING POINT		
	INTRODUCTION + EXAMPLE EXPLANATION			INTRODUCTION	
	SMALL QUESTIONNAIRE			SMALL QUESTIONNAIRE	
	PROBLEM DESCRIPTION			THEME DESCRIPTION	
1:00 min	0.	POSSIBLE SOLUTIONS	30:00 min	1.	ARCHAEOLOGY
15:00 min	1.	ARCHAEOLOGY	10:00 min	2.	CONTEXT
15:00 min	2.	PARADOX	10:00 min	3.	VALUES & NEEDS
15:00 min	3.	CONTEXT & FIELD	20:00 min	4.	THEMES
20:00 min	4.	VALUES & NEEDS	15:00 min	5.	FRAMES
20:00 min	5.	THEMES			QUESTIONNAIRE
15:00 min	6.	FRAMES			
	QUESTIONNAIRE				

Figure 21. Experiment set-up

# 16 RESULTS

The validation interviews and experiments were analyzed based on the assumptions, hypotheses and questions. The first part of this chapter discusses the outcomes of the assumptions and hypotheses. The set-up is as follows: the assumption or hypothesis is supplemented with observations, followed by learnings regarding the assignment and, in some cases, supported by quotes. In the end, an overview of the general questions outcome is shown.

## 16.1 ASSUMPTIONS

### **1. The frame toolbox is a valuable tool to uncover initiatives within a two-week time box.**

The experiments had a maximum duration of two hours and resulted in surprising results. During the experiments, decisions were based on assumptions as much information is still uncertain at an early stage. Time slots forced participants to make decisions quickly and to keep focus. **Schedule extra time so that participants can talk to stakeholders and users. In this way, personal information is supplemented by other perspectives. Since the portfolio events are every two weeks, the turnaround time can be two weeks. Extend the time slots to gain more depth and insert breaks in between to keep the energy level high.**

### **2. The frame toolbox forces participants to reframe their point of view and investigate the core of initiatives.**

At the beginning of the experiment, participants had to write down their expected outcomes. There was a clear difference between these outcomes and the frames. *"Impressive. It went very quickly and the difference between the start and end frames was remarkable."* The frames focus on the causes of the initial problem. **Implement a step at the beginning to write down expected outcomes. An informal kick-off session will contribute to preventing prejudices. A clear distinction between your truth and objective information can also be of value, do this by using different colour post-its for example.**

### **3. People with a lot of design experience are more likely to be convinced of this method than people without a design background.**

Participants with a design background asked a few questions and immediately understood what to do. Non-designers, in many cases, did not understand the essence and were a bit skeptical at the beginning. However, they became very enthusiastic while executing the steps, and it turns out to be an accessible method. Non-designers can also achieve

excellent results with the frame toolbox. **The frame toolbox could be best onboarded in a design environment since inexperienced non-designers would not perform the steps independently. After the frame toolbox has been positively received by designers, I recommend involving external parties and non-designers!**

### **4. A facilitator is needed to support the participants during the Frame Creation steps.**

The method cards are already quite self-explanatory. When assessing the paradox and themes, some direction is needed now and then. The facilitator proved to be crucial in encouraging the participants to make decisions in a specific time. *"I think there should definitely be someone who can facilitate it well and ensure that you go towards a goal!"* **In all cases, involve a facilitator when participants are inexperienced or when a large group is conducting the frame toolbox. The facilitator must ensure that participants have enough self-confidence to estimate whether the quality is good, and she must keep track of time.**

### **5. A multidisciplinary group increases the chance of success of frames.**

Experiments with different disciplines led to interesting insights. However, experiments with IDE students only also yielded good results. The multidisciplinary team's advantage was that less subjective information was used. **When possible, involve different disciplines to include as much diverse knowledge as possible.**

### **6. The toolbox is more likely to be adopted when it is considered a positive resource rather than a mandatory activity.**

When participants performed the frame toolbox for the first time, they needed a lot of guidance. *"A pleasant amount is mandatory; it gives enough direction."* Participants liked to have structure and clarity about the process. Emphasizing speed over accuracy provided more self-confidence for the participants. **Give experienced participants freedom while performing the toolbox and communicate the purpose of each step. Also, emphasize that it is impossible to have a 100% correct frame.**

### **7. In any case, a designer or expert must be present while performing the frame toolkit.**

IDE students went quickly to a deeper level without realizing this. They investigated the "why" behind insights and discovered the underlying idea of problems/themes. **It is valuable to have at least one designer on the team.**

## 16.2 HYPOTHESES

### **1. DS employees will receive the frame toolbox positively.**

During the validation interviews and experiments, DS employees responded very enthusiastically to the method (non-designers as well). DS employees were enthusiastic about discovering the core of the problem and excited to perform the steps in a team. **Make the frame toolbox as easy and straightforward as possible so that non-designers can use it as well.**

### **2. You need 3 to 4 people to complete the Frame Creation steps successfully.**

The participants indicated that 2 to 4 participants would be perfect. *"Three people makes it quite effective to follow this method and it keeps discussions streamlined. Although if I would do this in reality, I might need a bigger team with more different perspectives."*

It also depends whether the toolbox is used online or offline. You want to discuss thoughts during clustering. Experiments with five participants led to a lot of input, although it was more challenging to supervise online. **Several small groups could work in parallel, solving the same starting point. In the end, you bring the results together to merge all the insights and perspectives.**

### **3. Examples & method cards support the participants.**

The examples were supportive because it was everyone's first time performing the steps. *"When formulating sentences, I am always a fan of 2-3 examples because it can be challenging to understand what is being asked of you. Different contexts can help."* When the participants have more experience, the examples are useful for retrieving information (not as guiding as the first time). It also appears that examples need some context to make it real. The examples would be even stronger if they are more visual. **Use method cards to explain each step. It is recommended to build short animation videos to explain the steps and give examples.**

### **4. Potential value can be made transparent by testing the frames for desirability and viability.**

In the ideation phase, a tool has been developed that tests frames for desirability and viability. This was received positively during the validation interviews. This tool was not tested in experiments because its content did not match DS' strategy. **It is recommended to validate further the value check tool in the DS environment in a follow-up study.**

### **5. Motivated participants have less difficulty conducting the frame toolbox.**

It was surprising to see motivated participants continued to talk about the frames for a long time after the experiment and the other participants didn't. In general, it can be concluded that intrinsically motivated participants have little difficulty going through the process, as long as a good facilitator is present. **Make sure you have participants who are intrinsically motivated to onboard innovation initiatives. Besides, make sure you interview problem owners in the values & needs phase but do not include them as participants (they may have developed a subjective image of the problem).**

### **6. The frame toolbox aligns initiatives with the strategy.**

By applying the pirate model's philosophy (Vera, 2018), participants distance themselves from the company when running the frame toolbox. As frames are discovered, the start and focus points are assessed against the strategy. This easy tool immediately visualizes to what extent an initiative fits with the strategy. **Apply the value check at the end of the frame toolbox.**

### **7. The frame toolbox maximizes the portfolio value.**

As Dorst (2015, p.97)) emphasizes: *"The reframing of issues has both given a much better understanding of the real problem and pointed to a much broader repertoire of solution directions"*. Themes arise from intrinsic motivations underlying the initiative. Defining focus points based on these themes seem to offer help in convincing stakeholders, and to show potential value. **The frame toolbox exposes initiatives to its core to create focus points with maximal value.**

### **8. The frame toolbox creates focus while generating and shaping initiatives.**

The frame toolbox supports participants to focus on the potential value of the initiative. **A facilitator is needed to support the participants in maintaining focus.**

### **9. Participants will have a portfolio mindset while conducting the frame toolbox.**

Because the frame toolbox follows the pirate model, there is no overview of the total portfolio. **Make sure that information is centralized and always accessible to everyone to create an overall portfolio mindset.**

**10. The frame toolbox integrates stakeholders.**

The frame toolbox combines stakeholders in the context and field phase. The experiments have shown that it takes a lot of time in the subsequent steps if you involve all stakeholders. This is also not necessary during pre-screening. **Expressively explain that it is not about a complete picture. Emphasize speed over accuracy.**

**11. The frame toolbox has clear instructions and information can be shared conveniently.**

The structure of steps appears to be supportive for inexperienced participants. It provides guidance and efficiency. In addition, the structure helps non-designers in the execution of the steps. **Centralize information and ensure that the frame toolbox has a clear overview.**

**12. The toolbox ensures the continuous generation of new initiatives.**

The frame toolbox helps participants to reframe their individual mindset to a common one. If participants keep thinking unconsciously from their perspective, the result to be achieved is not maximized. Participants become aware of their frame through multiple elements (kick-off session, step 0 and step 6). **Participants "reframe" a new mindset; gaining a unique view of the world and seeing and generating new initiatives.**

**16.3 GENERAL OUTCOMES**

Next to the assumptions and hypotheses, the general questions stated in chapter 14 resulted in several insights. Firstly, it appears that the toolbox can be both performed online and offline. Pros of online are an instant overview and access to information for everyone. Offline performing of the toolbox is preferred when the group consists of more people. Also, it is more spontaneous; you may achieve more depth and quality. And it is easier to stimulate each other offline. Also, DS employees indicated that the frame toolbox must be designed as visually as possible to be received positively in the department. The experiments also showed that the method cards should provide a concise explanation of the essence of the steps, followed by clear actions and real examples.

Figure 22 explains **how the participants perceive the stances while performing the frame toolbox and what stances reflect DS values.** Seven stances appeared to be essential for the frame toolbox. During the kick-off, the facilitator should emphasize the importance of these values. The facilitator must provide a safe environment. When the participants get stuck or stray from the topic, she must ask the right questions to regain focus. The facilitator ensures that everyone has the floor, and not one person is dominant.

CURIOUS	Curiosity is expected of the participants. Everyone feels an inner urge to discover more about specific topics and is interested in each other and new developments.
LISTENING	Participants have to listen to each other to create a common language. Besides, participants must listen to the interests, values and wishes of the stakeholders.
INVOLVED	"Involved" indicates that participants research the problem, talk to problem owners, and are involved in the business.
CRITICAL	Even though speed is more important than accuracy, participants must be critical and stimulate each other to achieve interesting results in a time-box.
POSITIVE MINDSET	At the start of a design process, there are a lot of uncertainties about the added value. If participants are not optimistic, it is tempting to give up quickly. Participants must have confidence in an ultimately valuable outcome.
GOAL ORIENTED	The facilitator should be clear about the purpose of the assignment and remind participants of this as they complete the steps. At least the facilitator must be goal oriented, but so should the participants.
EMPATHIZE	Participants must be able to empathize with each other, but also with the users and stakeholders.

Figure 22. Stances meaning



It was remarkable that all results during the experiments were good. Interesting focus points were discovered quickly, which turned out to be the case every time. Experiments 4, 5 and 6 worked with the same starting point (see appendix 12). The participants in these three experiments were all IDE designers, and the group size was comparable (2 to 3 participants). As a result, the outcomes of these experiments can also be analyzed in terms of content. In all three experiments, the essence of the paradox was the same. The paradox of experiment 4 was a bit shallow compared to the other experiments. Experiment 5 did not quite capture the paradox; this may be because experiment 5 was carried out in only 50 minutes. The participants of experiment 6 moved to a more abstract level and described a theme in the paradox. All three groups arrived at the same essence; only the implementation is somewhat different. The most important stakeholders are mentioned by all three groups in the Context step, but there is diversity in indirect stakeholders. Since these are not directly affected by the problem, it provides an original approach to the problem.

Two themes, defined slightly differently by the groups,

occurred in all three experiments. These themes appeared to be indispensable. But these themes were not recognizable in the problem description. Other themes that were defined, indicate that the creation of themes is strongly group-dependent. In addition, external factors such as whom you talk to influence the formulation of the themes.

**The use of frames are conducive to explore the underlying drivers of the problem situation and to discover the real problem.** By adding the “possible solutions” step, participants are forced to put their prejudices aside. As a result, they are not guided by their biases during subsequent steps. Using the “possible solutions” step enables participants to better understand how other participants rationalize. An informal kick-off session would contribute to this as well. Moreover, the “possible solutions” step is an excellent tool for reflecting after creating the frames; as participants see significant differences between the possible solutions and frames.

## CONCLUDING THE FINDINGS

- The frame toolbox can be performed within a **two-week timebox** consisting of several **time slots**.
- An **informal kick-off** session and the “**possible solutions**” step prevent prejudices.
- The frame toolbox is powerful since **non-designers** can also implement it.
- **Involve different disciplines** to include more perspectives on the topic.
- Communicate the **purpose** of each step to provide more freedom for the participants.
- **Designers** quickly understand the nature of the problem and are therefore useful to include in the team.
- Design the frame toolbox as **easy** and **straightforward** as possible with many examples so that non-designers can perform it as well.
- The frame toolbox can be conducted in both **small and large groups**. Participants of large groups must be physically present or perform the toolbox asynchronously.
- It is recommended to validate further the **value check tool** in the DS environment in a follow-up study.
- The frame toolbox exposes initiatives to its core to create **focus points** with maximal value.
- A **facilitator** creates a safe environment and supports the participants in successfully performing the frame creation steps.
- Make sure that information is **centralized** and always **accessible** to everyone to create an overall portfolio mindset.
- Create a **digital platform** that can be executed both online and offline.
- The **stances** curious, listening, involved, critical, positive mindset, goal-oriented and empathize are beneficial for performing the frame toolbox.
- The resulted **frames** show the rich content underlying a problem.
- The use of different **colours** clarifies which themes are overarching for the stakeholders.

# 17 DS RESOURCES FIT

This page explains how the frame toolbox connects to the events and artefacts of DS. Besides, it is examined where the frame toolbox fits within the process.

The portfolio event occurs once every two weeks; new intakes are pitched, product owners share their progress, and DS employees can ask critical questions.

After the intake has been accepted at the portfolio event, the frame toolbox can be started.

During the portfolio sync the MT makes decisions together with initiators. Initiators can participate in this meeting at any stage before projects have reached the product or service backlog. The aim is to delve deeper in the proposed cases.

The frame toolbox could be completed in the portfolio sync. The MT and initiator should discuss the various focus points and provide insight into potential value.

The portfolio wall provides an overview of the total number of current projects and the phase in which each project is located. Due to the consequences of COVID-19, this has been converted to a digital overview, in JIRA. The digital portfolio wall gives all participants access to all projects at any time.

The frame toolbox should provide insight into all current projects at any time.

When new initiatives have been scouted, the initiators must fill in the intake form. This ensures that everyone

understands the problem, that all intakes are transparent and that the initiatives can be processed in a structured way.

One of the strengths of the frame toolbox is welcoming open and complex problems. The intake form forces DS employees to sharpen initiatives early, and so the potential value is still unknown. To avoid this, it is recommended to split up the intake form and fill it in at the beginning and end of the frame toolbox. Prior to the frame toolbox, the intake form consists of a few simple questions to pursuit as many possibilities as possible. When the frame toolbox results are visible, the intake form examines the outcomes with the strategy.

Initiators fill in the Epic template in order to place the project on the portfolio wall. This turned out to be challenging in practice, a few initiators indicated that they experience mandatory tools as challenging since they do not 100% fit their way of working. However, it is perceived as a concise, well-arranged and clear format.

The frame format of the frame toolbox is similar to the Epic template (figure 23). Perhaps certain elements of the Epic can be added to the Frame.

The process of how an intake form “flows” into the portfolio is illustrated in appendix 2.

There was no step-by-step plan of precisely onboarding initiatives. The frame toolbox applies to the opportunity backlog and shows structured steps.

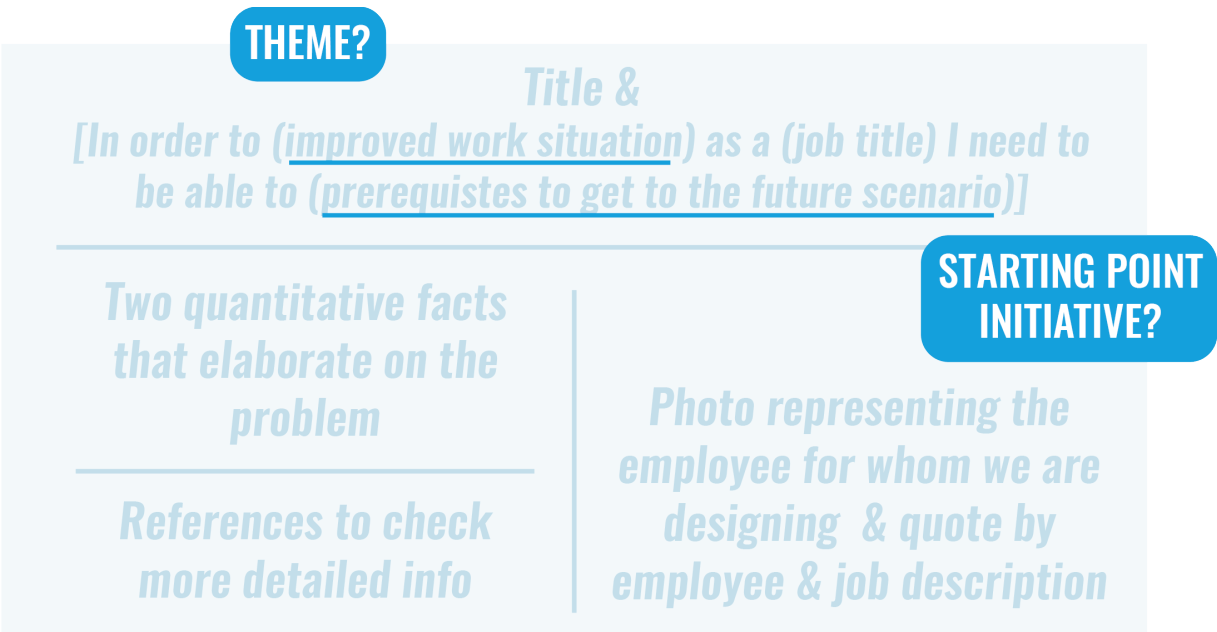


Figure 23. Epic template

# FINAL CONCEPT: BLINK

*In this chapter, the final concept Blink is explained. It starts with a description of Blink, combined with its positioning statement and application. Second, its users and the group composition are briefly described. Two user scenarios indicate how to use the concept, followed by a chapter about the concept's tools. Next, the use of the final concept within DS is illustrated by a visual. The subsequent chapter shows the digital application of the final concept, supported with explanations. Finally, Blink's match with the design criteria is clarified.*





# 18 DESCRIPTION

*Inspired by the Frame Creation method devised by Kees Dorst (2015), the digital toolbox Blink is designed.*

## 18.1 BLINK'S PURPOSE

**Blink supports initiative owners to generate and shape innovation initiatives to maximize their value quickly.** By implementing a simple step-by-step plan, problems, solutions, opportunities and themes can be shaped into initiatives that help realize DS' strategy. This is done by first discovering the (unconscious) drivers of initiatives to reveal what focus is needed to create "real" value. Blink's structure provides insight into how decisions have been made and supports DS employees to create insight into the potential value of initiatives. A tool has been specially designed for Blink to compare short- and long-term innovations on potential value. The strength of Blink is the rapid scanning of possibilities of initiatives by both designers and non-designers. Since Blink is very accessible and visually designed, it is easy to use by non-designers.

## 18.2 BLINK'S CHARACTERISTICS

Blink is a digital toolbox that exposes problems, themes, solutions, and opportunities to the core and quickly transforms them into focus points. Different disciplines are brought together to create a common frame of mind. Participants "reframe" their mindset, resulting in the generation of new possibilities. Blink supports participants in discovering intrinsic motivations and unconscious drivers to investigate the "real" value of initiatives. Performing Blink requires attention at all times; it will never be possible to go through the digital toolbox without actively thinking about the content. Blink consists of a simple step-by-step plan that provides a structure for creating insight into the potential value of initiatives. As a result, participants can unambiguously compare short- and long-term innovations. The digital toolbox centralizes information so that all employees have access to each project. The digital toolbox prioritizes speed over accuracy; the essence is to screen an innovation initiative quickly. It is not a matter of right or wrong; careful use of the digital toolbox will result in valuable outcomes at any time. Many possible outcomes are influenced by the participants' characteristics, the group's current context and composition. The more experience the participants have with Blink, the easier it will be to carry out the steps. Designers quickly understand the nature of problems and are very skilful in using Blink. However, non-designers also appear to be convinced of Blink and can achieve excellent results as well. Since multi-disciplinarity

participation increases value, teams should consist of both designers and non-designers.

## 18.3 BLINK'S CONTEXT

Blink is designed to be used at the beginning of a design process when initiatives need to be onboarded. Blink is aimed mainly at DS employees since it is in line with their way of working and fits their values (prickling, passionate, helpful, open, decisive and professional). The concept had been tested in other industries, and proved to be very valuable. Therefore, Blink could also be applied in other innovative companies and at (industrial) design faculties.

## 18.4 BLINK'S ADDED VALUE

**Blink is a valuable tool to get to the core of problems, themes, solutions, opportunities, and from there create exciting new ideas, initiatives and directions.** The experiments highlighted that some people from the European Airline tend to think from solutions, not problems. Blink embraces all possible starting points (**problems, themes, solutions** or **opportunities**) because Blink forces participants to dive into the core regardless of its content. It's about embracing the complexity of initiatives, in order to **maximize** initiatives' **value**. Thanks to DS' open attitude, every employee can become an initiator regardless of his or her role. Blink is so powerful because it is executable by anyone. The digital toolbox can be applied quickly so that time, energy and money are spent efficiently. Blink's use of frames' format provides insight into the initiative's **strategic alignment** and simplifies prioritizing in a later phase. A **portfolio mindset** among employees is ensured through Blink's structure and transparency. An overview of the design criteria that match with Blink can be found in chapter 24.

## 18.5 BLINK'S USAGE

The digital toolbox can be used both offline and online by a multidisciplinary group. The group can vary in size, but at least two participants must be present. An online group's maximum is four people unless the participants perform Blink in subgroups asynchronously. Then several subgroups can discover the same initiative, and insights are brought together at the end. When all participants are physically present, Blink can be performed by a large group. Blink consists of several steps that the participants go through. The different stages are explained with method cards (appendix 13). A facilitator is also present to create a safe environment and support the participants in successfully performing Blink.

*For DS employees, Blink offers a digital toolbox that helps generate and shape innovation initiatives into valuable focus points and gives people insight into potential value.*

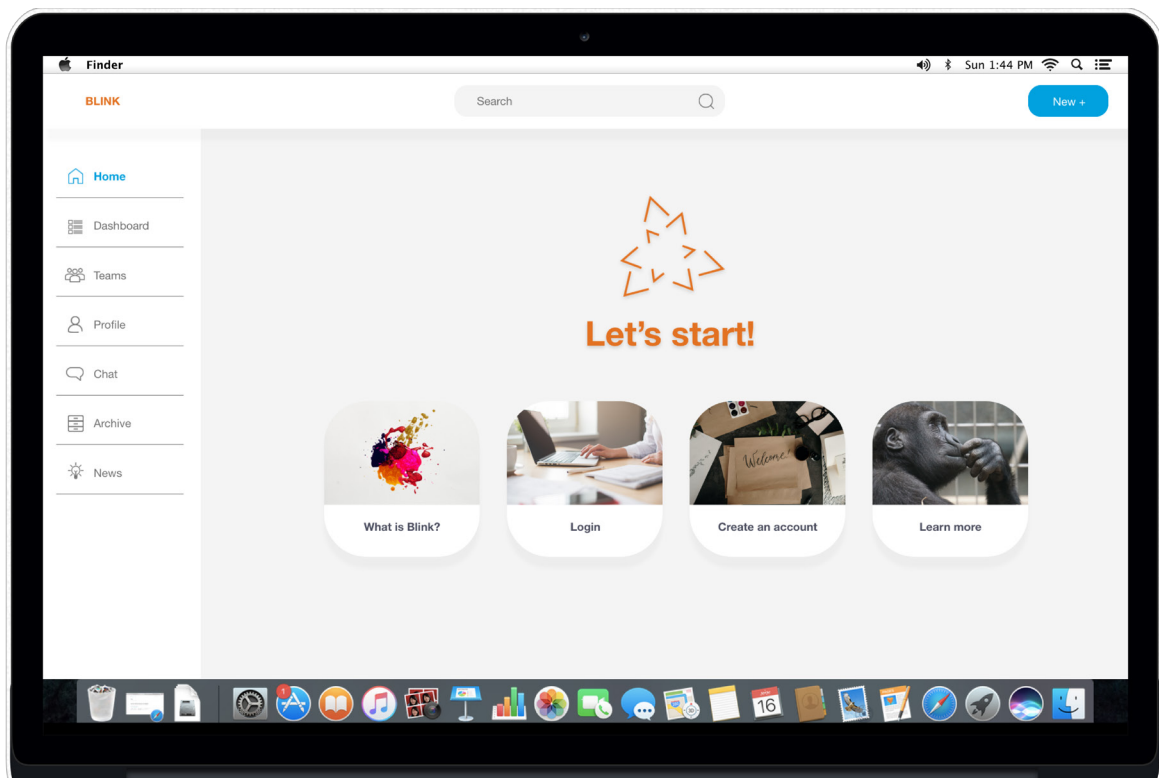
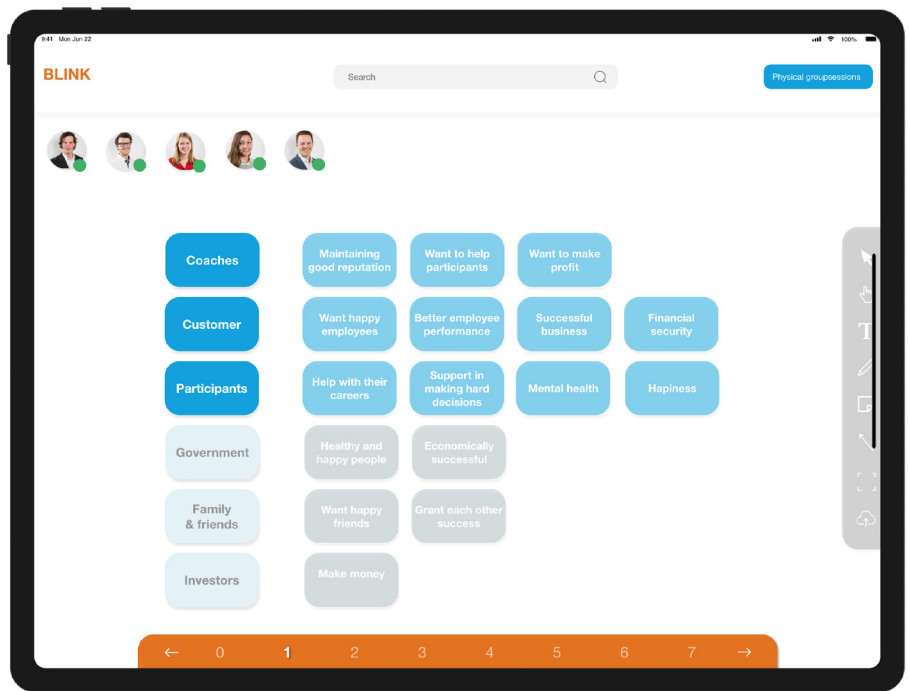


Figure 24. Digital application

# 19 USERS

*This page provides an overview of Blink's users, and explains required characteristics of participants in order to ensure most efficient functioning of Blink. Also, the visual further addresses the specific role of the facilitator.*

Anyone can perform Blink; it does not matter whether

you have experience with the digital toolbox, as long as the requirements listed below are met. There are three options for Blink's group composition, as explained on the next page. Try to find participants who are **curious**, **involved** and **critical**. It is also essential that participants **listen** to each other and that they have a **positive mindset**.



## A facilitator ...

## Experience/ motivation

## Designer

## Other participants

- ... is **observant & supportive** without steering.
- ... knows the **content** and the **process**.
- ... is **unbiased** about decisions (Inspired by Google Sprint, (Knapp, 2016))
- ... ensures that **everyone has the floor** and that not one participant is dominant.
- ... gives participants a sense of **self-confidence**.
- ... is responsible for **managing the time**, is **goal-oriented** and **ensures** that the participants make decisions.
- ... **emphasizes** during the kick-off the **importance** of curiosity, involvement, scrutiny and empathy.

Involve more participants with **different expertise** within the company. For example, ask an engineer, software developer or a business analyst. It can also be advantageous to involve an **expert from outside the company**. Besides, Google Sprint (Knapp, 2016) recommends involving a "decider" in the Sprint. It turns out to be useful to include someone with "decision power" in a design process. Therefore, I recommend adding an **MT member** in Blink.

Figure 25. User characteristics



First, you can create a **small group** that meets the conditions on the previous page. You do this when you run Blink online, then the maximum number of participants is four (excluding the facilitator). The disadvantage of this is that you are limited in expertise and insights.



The second option is to unite a **large group** for performing Blink **offline**. So everyone must be able to be physically present. In this case, the group must also contain the previous page's conditions. Many diverse perspectives can be concluded, and therefore the quality of insights will be high. It is crucial that the facilitator is confident since she has to guide a large group.



The last option is to **divide a large group into subgroups** (of max four participants). This is a good alternative if not all participants can be physically present. Important is that within the entire group, someone with previous experience and/or motivation, as well as a designer should be present. It does not matter whether this is equally divided over subgroups, ensuring that more perspectives are taken into consideration. In the end, all insights (themes and frames) will be merged, resulting in a rich amount of outcomes. Note, a facilitator must be present when subgroups have little experience. If a subgroup consists of, for example, two experienced participants, they can also perform Blink without a facilitator. In this way, employees have much more freedom; they can conduct Blink when it suits their schedule and in the short term.

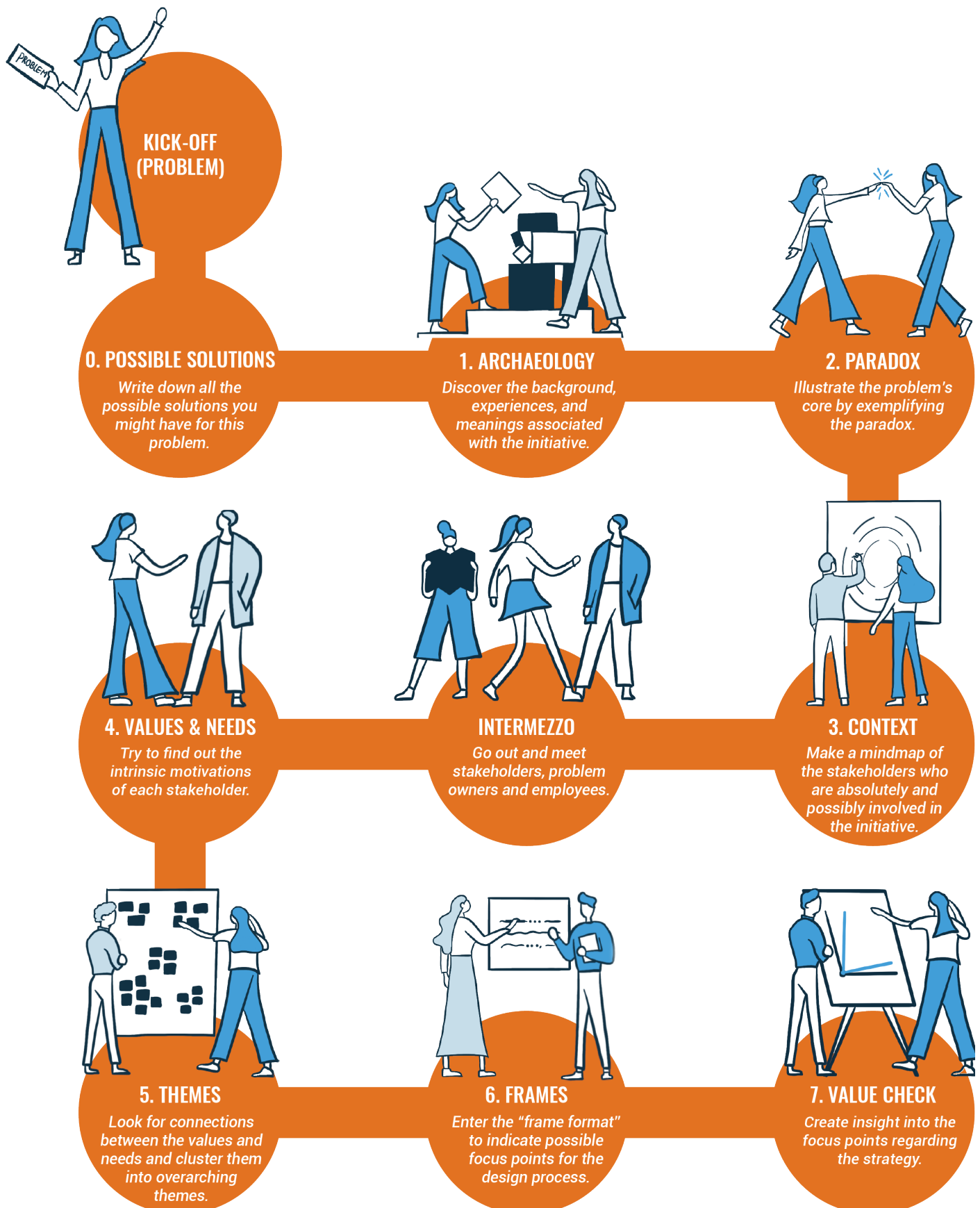


# 20 USER SCENARIO

These two pages give a brief overview of the user scenario when the starting point is a problem or theme.

As you can see, the starting point "theme" includes the

same process as the starting point "problem" except for two steps. The next chapter takes a closer look at the different tools used per step. The final design of the method cards is illustrated in appendix 13.





## KICK-OFF (THEME)



## 1. ARCHAEOLOGY

*Discover the background, experiences, and meanings associated with the initiative.*



## 2. CONTEXT

*Make a mindmap of the stakeholders who are absolutely and possibly involved in the initiative.*



## 4. THEMES

*Cluster Archaeology and the values and needs into overarching themes.*



## 3. VALUES & NEEDS

*Try to find out the intrinsic motivations of each stakeholder.*



## INTERMEZZO

*Go out and meet stakeholders, problem owners and employees.*



## 5. FRAMES

*Enter the "frame format" to indicate possible focus points for the design process.*



## 6. VALUE CHECK

*Create insight into the focus points regarding the strategy.*

# 21 BLINK'S TOOLS

*This chapter briefly describes which tools are used per step. These tools are user friendly even when the participants are inexperienced with Blink. When experienced participants perform Blink, they can use all means they consider suitable.*

## 1. ARCHAEOLOGY

This step discovers the background of the initiative. Perform the WWWWWH method (Tassoul, 2006) to answer all the essential questions of the initiative. Below is an example when the starting point is a problem:

- What is the problem?
- Who has the problem?
- Where is the problem?
- When did the problem arise?
- How did the problem arise?
- Why is it a problem?
- What has done to fix it?

## 2. PARADOX

A problem exists because there is a contradiction in its core. Exemplify that contradiction by asking yourself: why is it a problem? Why can't it be solved? Visualize the contradiction in the mindmap of the previous step. Second, complete several "because" statements until the paradox is apparent. Start the "because" statement with the person experiencing the problem and then conclude with the consequence.

- *Because* the Sydney Opera House is such a special place and iconic building, it attracts protesters who seek attention.
- *Because* these protests need to be prevented, the podium is closed off for everybody.
- *Because* the podium section is closed off for everybody, the Sydney Opera House cannot be fully experienced as a special place.

(Dorst, 2015, p.82)

## 3. CONTEXT

In this step, participants create a mindmap of all the stakeholders and parties who are absolutely and possibly involved in the initiative. Answer the two questions:

- Who is directly involved in the problem?
- Who are the possible stakeholders? Who could play a role in the future?

## INTERMEZZO

During the intermezzo, participants observe stakeholders, organize generative sessions or use the "5 times why" technique in interviews. They immerse themselves into the stakeholder's worlds.

## 4. VALUES & NEEDS

Participants write down the values, needs and wishes of each stakeholder. They list all stakeholders and stick post-its behind them with their values, needs and wishes. Different colours are used to indicate direct and indirect stakeholders.

## 5. THEMES

During the themes stage, participants look for connections between the values, needs and wishes. They cluster them into exciting themes. They have to create at least five different clusters, and it should be based on content. There is no right or wrong; there are countless connections. Second, the clusters need titles. The title must contain a verb to fit in the frame format of the next step.

## 6. FRAMES

A frame is a format that indicates possible focus points for the follow-up design process. The frame format is as follows:

If the problem/theme/opportunity/solution of [...*short initiative description*] experienced by [...*problem owner*] is approached as if it were a problem/theme/opportunity/solution of [...*cluster title*], then ...

A frame consists of a starting point and a focus point. An example with problem owner Flying is shown below.

Starting point

If the problem of **sustainable awareness among employees** experienced by **Flying** is approached as if it were a problem of **showing commitment**, then ...

Focus point

## 7. VALUE CHECK

In this step, the frame is checked on potential value. The initiative has already been screened once (during the intake form). In this final step, participants look at how each focus point fits DS' strategy. The tool (figure 26) consists of two pillars that can



all slide between 0% and 100%. The position for each pillar is determined by answering a few questions. The starting point of the initiative is assessed during the intake form. The starting point reflects whether Blink will achieve a value for the end-user; this is called **desirability**. When the starting point matches DS in all respects, the starting point pillar will indicate 100%. Completing Blink will result in multiple focus points; these are all individually tested during Blink's final phase and at the portfolio sync. The fit of the focus point with DS' strategy is examined by answering the

three questions from the orange box below.

**When both pillars indicate 100%, the framework has an open attitude. This represents the large number of possibilities that this initiative has.** The focus points indicate the added business value; **viability**. It is unnecessary to gain insight into feasibility after conducting Blink; everything is still achievable for DS at an early stage. Furthermore, desirability and viability are much more about the added value of a project, one of DS' beliefs. A complete overview of possible outcomes can be found in appendix 14.

During the internal observations, it turned out that decisions are often based on gut feeling. It would be valuable to apply gut feeling in the value check as well. However, more research needs to be done first.

## STARTING POINT

The starting point examines whether the problem, theme, solution or opportunity fits with DS' purpose and strategy.

1. Focus on employees?
2. In case of a problem or solution: Is there a validation of a business problem?
3. In case of a theme: Is it significantly present among employees and/or stakeholders?
4. In case of an opportunity: does it promise to have original added value?
5. Is there no overlap with business activities?

## FOCUS

It is examined whether the focus fits within the strategy of DS with the following questions:

1. Is there a DT objectives fit?
2. Is there a transformative way of working, skillset or application of technology?
3. Does it focus on employees?

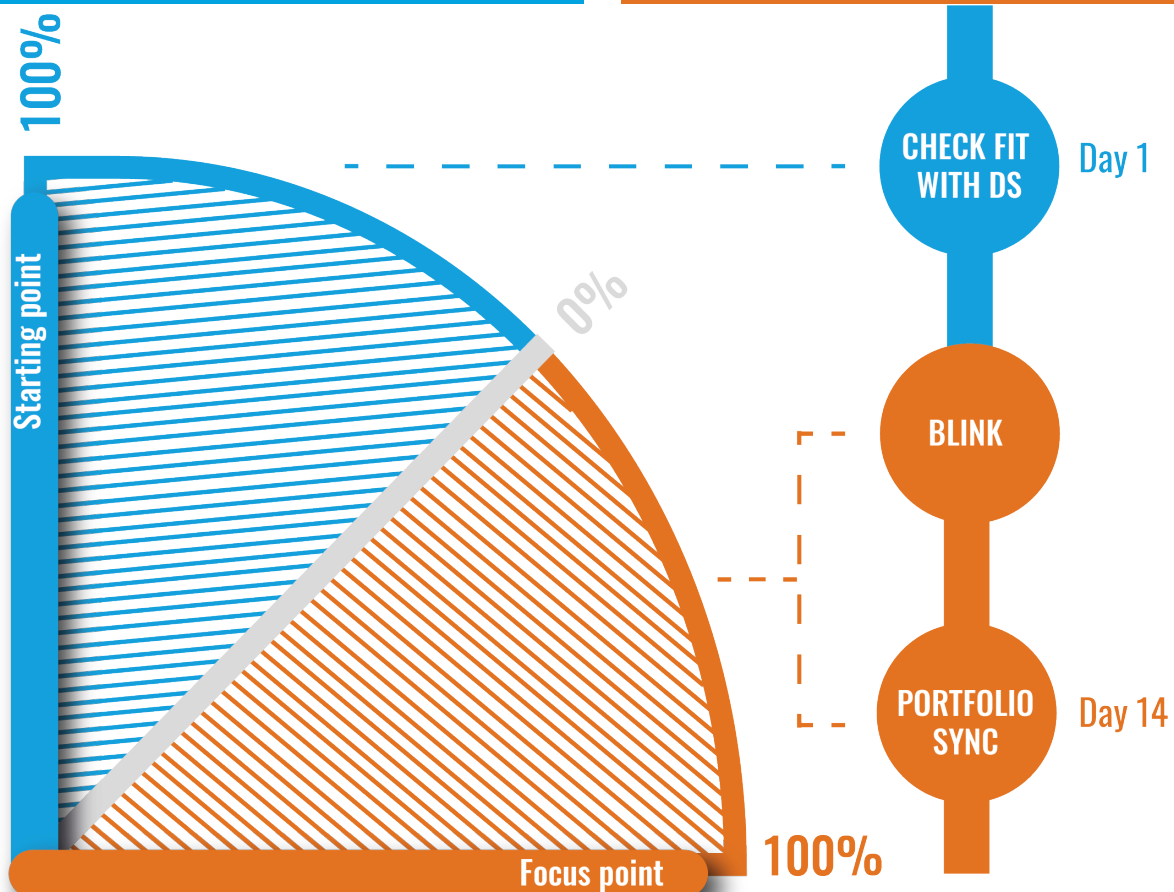
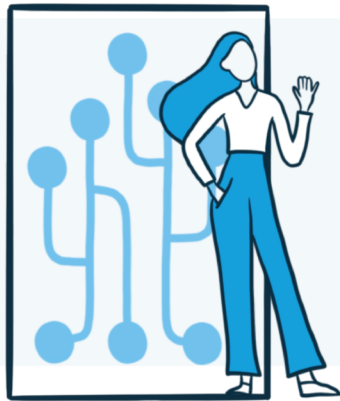


Figure 26. Value check tool

# 22 USAGE IN DS

*This chapter shows how Blink fits within the current way of working of DS. It starts with scouting initiatives and ends with product teams picking up the project.*



## WELCOME ALL IDEAS

Be open to all ideas, problems, themes and opportunities that might add value to DS.

Day 0



## CHECK FIT WITH DS

Check if each initiative fits DS strategy via the Intake Form. When an initiative matches the strategy, it will be further discovered.

Day 1



## PORTFOLIO EVENT

Discuss the initiative during the portfolio event. Is everybody on board?



## INFORMAL KICK-OFF

Create a group, get to know the participants, describe some personalities and discuss the expectations.



## CONTINUATION

A product owner further elaborates the focus point with a product team.



## PORTFOLIO SYNC

In the portfolio sync, the focus points are examined based on strategy fit. The group and MT will choose a specific focus jointly.



## BLINK 2.0

In the second sprint, values and wishes of stakeholders are written down and clustered into inspiring groups. Based on the clusters, focus points are agreed on.



## INTERMEZZO

After the first sprint, the participants can do research for a full day. Talk to problem owners, stakeholders, read articles etc.



## BLINK 1.0

The first sprint is about discovering the problem and the context.

Day 14



Half a day



One day



Half a day

# 23 DIGITAL APPLICATION

The visual below illustrates the digital application of Blink. Note, this represents the performance of Blink and not its content. Not all insights obtained have been incorporated into Blink's content; some are included in Blink's application. The latter are described in this chapter.

To use Blink, participants need an application on their computer, iPad or phone. The computer application

works best when all participants work online. When they have the opportunity to physically meet as a group, it is best if one participant uses the computer application and shares their screen. The rest can use iPads if preferred (recommended when making sketches and drawings). An overview of the prototype can be found in appendix 15.

The dashboard button contains an **overview** of all recent projects that participants have done.

If participants click on the Teams page, they will see an **overview** of their group members, their characteristics and their function within DS. This is the team's page, where they can **share** documents and articles and chat with group members. Participants can be part of multiple teams!

Under the heading profile, participants can **find information** about themselves, how many times they have run Blink, and their results.

The chat function allows participants to **communicate** with all registered participants of Blink. Participants can do this within the DS department, but also outside the company.

Archive shows an **overview of all projects carried out** on Blink by DS.

Participants can find **inspiration** under the news function. They can discover articles, inspiring podcasts and interviews with experts.

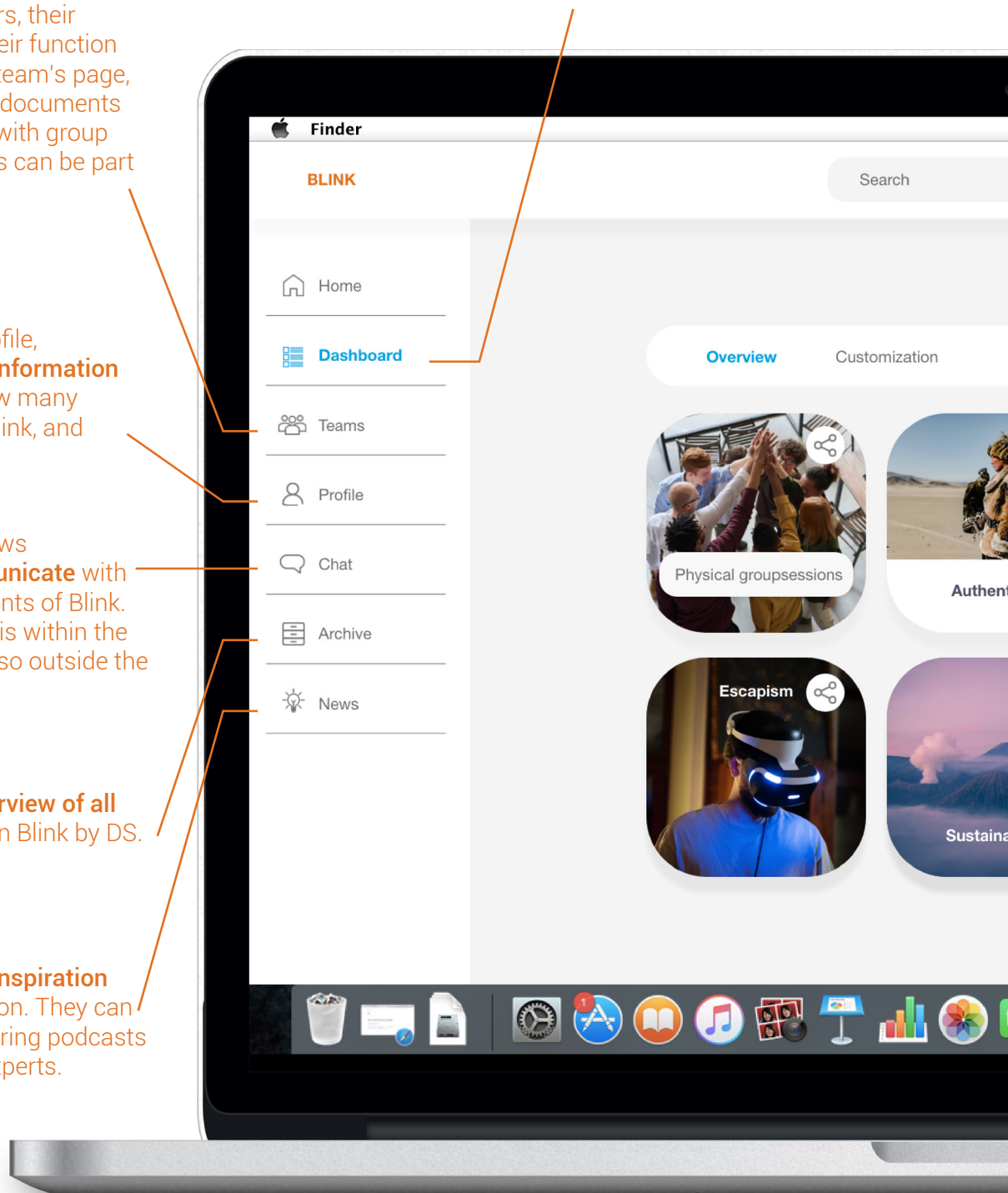
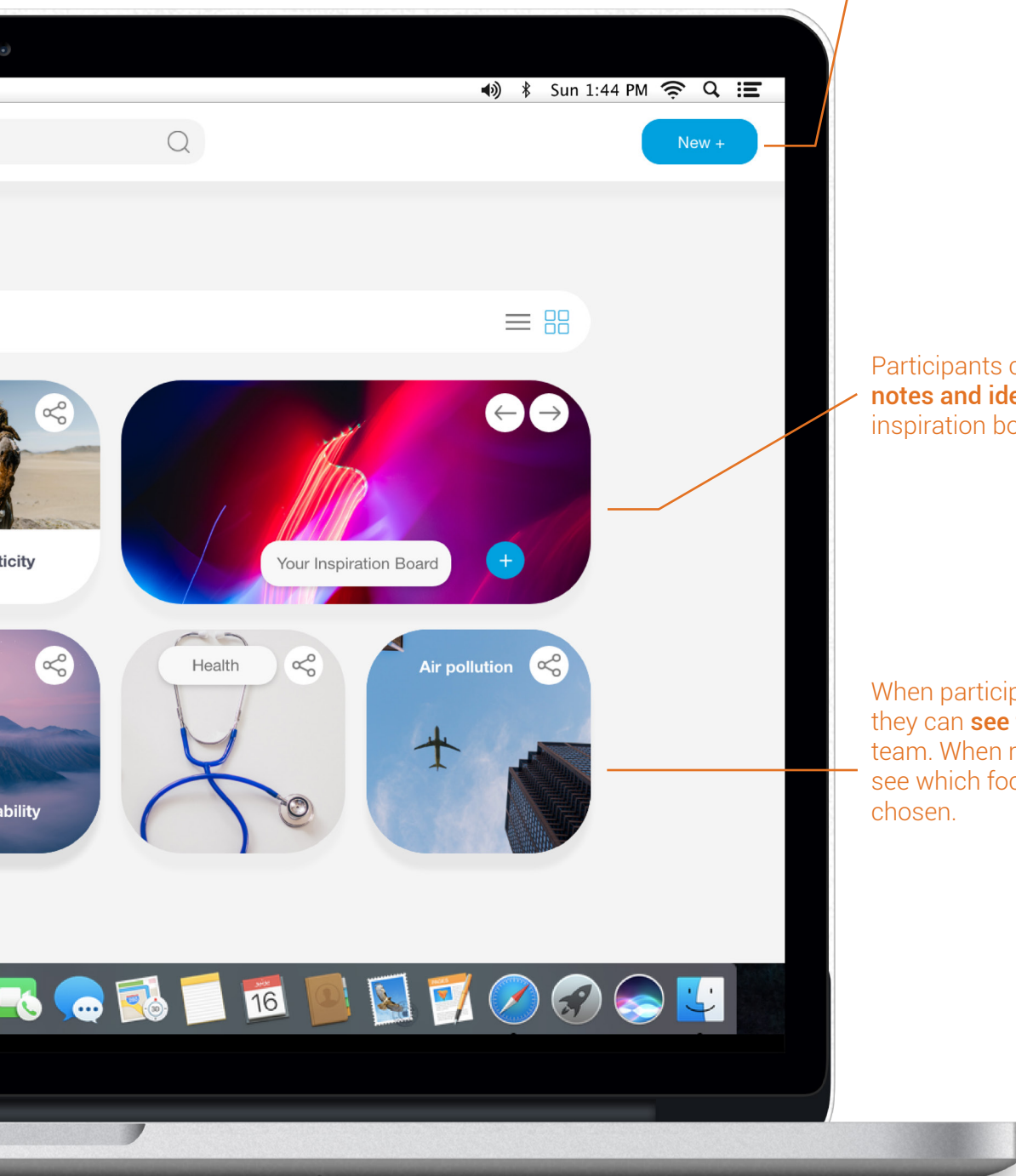


Figure 27. Digital application

Start a **new project** on Blink.



Participants can **collect inspiration, notes and ideas** on their personal inspiration board.

When participants click on a project, they can **see the progress** of their team. When relevant, they can also see which focus points have been chosen.

# 24 CRITERIA FIT

*This chapter shows how Blink fits the design criteria.*

## 1. STRATEGICALLY ALIGNED

### 1. The design should be future proof: that means deployable in the long term.

Blink is future proof since it can be performed online and offline. Therefore, it is independent of unexpected events (such as COVID-19). Blink can also be applied in other industries and offers much freedom. If the strategy of European Airline changes in the future, Blink can quickly adapt to it. Blink focuses on end-users and creates as much value as possible. The use of Blink ensures initiatives are aligned with company strategy.

### 2. The design should fit within DS' current way of working (Scrum framework)

Validation discussions and experiments have led to design iterations, which ensured that Blink fits within the DS' current process for onboarding initiatives. The short lead time is in line with agile product development. Blink's seven stances (curious, listening, involved, critical, positive mindset, goal-oriented and empathize) contribute to the DS values (prickling, passionate, helpful, open, decisive and professional). A big plus is that Blink can also be executed by non-designers, which is why all DS employees can complete Blink.

### 3. The design should contribute to the realization of DS' strategy by maintaining focus.

Blink enables participants to maintain continuous focus. The facilitator and the method cards support this. Also, the value check tool communicates what that focus entails. Blink fits with the agile way of working, the scrum framework, and outcomes aimed to improve European Airline.

### 4. The design should embrace that information is incomplete at the beginning of the design process

Blink stresses the use of assumptions. It is encouraged to use assumptions as long as the participants are aware of them. The facilitator provides a safe environment to include personal information in Blink as well. A distinction is made between subjective and objective information in the performance of Blink (different colours of post-its).

## 2. MAXIMAL VALUE

### 1. The design should allow DS employees to act flexible and deal with unexpected changes.

Blink can be performed quickly and is simple in its form. By forming subgroups (chapter 19), participants can complete Blink when it suits them, and therefore, they are very flexible in the short term. They can respond real time to unexpected events by quickly applying Blink. Blink offers much guidance for DS employees who use the digital toolbox for the first time. As participants gain experience with Blink, they can personalize their steps as long as they remain focussed on the end goal.

### 2. The design should focus on potential value.

The goal of Blink is to discover quickly what value the initiative may yield. This is already an experiment; Blink teaches participants about the possibilities. Blink's emphasis is on speed and not on accuracy. When different groups perform Blink with the same starting point, it will produce different results each time. For this reason, everyone involved must have an open attitude.

### 3. The design should shift the focus from solution to problem to maximize the value.

When using Blink, participants investigate the core of an initiative step-by-step. When a solution is the starting point, it will be brought back to the underlying problem (see chapter 13).



**4. The design should have a maximum lead time of two weeks in which all essential elements of the initiative are defined.**

Blink's lead time takes a maximum of two weeks, while actively performing Blink takes two days. See chapter 22 for the overview.

**5. The design should point participants to assumptions made.**

During Blink's kick-off, participants are made aware of their thinking style. When a problem is the starting point, participants must capture their expected outcomes during step 0. After step 6 (frames), the participants are pointed to differences compared to the first step. In addition, step 2 (paradox) leads to interesting discussions about the core of the problem, re-awakening participants to their prejudices.

**6. The design should enable participants to display both analytical and risky behaviour.**

Analytical behaviour is achieved on the one hand by the systematic way of collecting information in the archaeology and context steps. New knowledge is gained by speaking to stakeholders and end-users. Risk-taking behaviour occurs at least in two cases: when a theme is a starting point and when the participants create themes (they have to look for new possibilities).

## 3. PORTFOLIO BALANCE

**1. The design should apply to all kinds of projects (core, adjacent and transformational innovations), with core (mainly problems) and transformational (mostly themes) being the most important.**

With Blink, DS employees can initiate both short, middle and long-term innovations. Problems and solutions are concrete starting points with an emphasis on short-term innovations. Opportunities and new technologies are not purely concrete or abstract; these starting points are beneficial for adjacent innovations. The starting point theme contributes to long-term innovations.

## 4. PORTFOLIO MINDSET

**1. The design should provide structure to set up innovation initiatives to obtain transparency and overview for all DS employees.**

The steps followed with Blink are set in a clear structure. All projects result in the same format (the frames) so that everyone understands what the starting point was and which focus points belong to it. The digital toolbox provides access to DS employees at any time and place; DS employees can use the computer, iPad, or phone application. Every DS employee can view projects and on what basis the decision-makers made decisions.

**2. The design should support decision-makers to make decisions and to substantiate them.**

Blink results in frames (regardless of the starting point). A frame is a fixed structure that indicates a starting point and focus point. The decision-makers can easily capture how they perceive the frames with the value check tool. In case of disagreement, they can have a discussion based on the value check tool.

**3. The design should enable participants to integrate essential stakeholders.**

The context step asks participants to list the essential direct and indirect stakeholders. Since speed is more important than accuracy, only crucial stakeholders need to be involved.

**4. The design should make the participants committed to the project and end-user.**

The recommendations of users explained in chapter 19 indicate which character traits should be involved in Blink. The stances curious and involved are strongly recommended and refer to engaged participants. Blink guides participants to discover the intrinsic motivations of stakeholders and users. In this way, the participants empathize with (and become committed to) the end-users.

# ROADMAP

*This final chapter proposes a way to implement Blink within DS. Next, a final reflection about the project and process is given. All the important insights, conclusions and creations are mentioned here. This is followed by an overview of the limitations and recommendations of the thesis. It ends with a personal reflection on the process and learning ambitions.*





# 25 IMPLEMENTATION

*This chapter discusses how to implement Blink and in what time frame.*

Blink's strength is that it is a straightforward step-by-step plan executable by everyone. When you have a group of different personalities, a facilitator, a stack of post-its, pen and paper, you can get started. However, the design criteria "creating transparency" and "overview" will not be met in this set up. A digital toolbox unites the research insights, the best ideas from the ideation phase and the design criteria.

There are a few elements to consider when implementing Blink. Start with onboarding a facilitator, given that she is skilled in performing Blink. She ensures that the steps are completed successfully and that the highest possible quality is pursued. She also guarantees that employees become experienced with the toolbox, making her expendable over time. However, when large groups perform Blink, the

facilitator has to be present!

I also recommend onboarding Blink initially in a design environment, considering the outcome of assumption 3: *the frame toolbox could be best onboarded in a design environment since inexperienced non-designers would not perform the steps independently.* First, involve designers (or employees who have been part of the experiments conducted during the thesis). When they are enthusiastic, they can include non-designers in the process.

Furthermore, a few insights obtained during the thesis were not further elaborated due to time constraints. For example, it has been shown that incomplete information at an early stage leads to a tendency to make gut-feeling decisions. This is a complicated topic and requires more research before it can be incorporated into the value check tool. Besides, the value check tool will have to be tested several times in the DS environment and improved if necessary. In

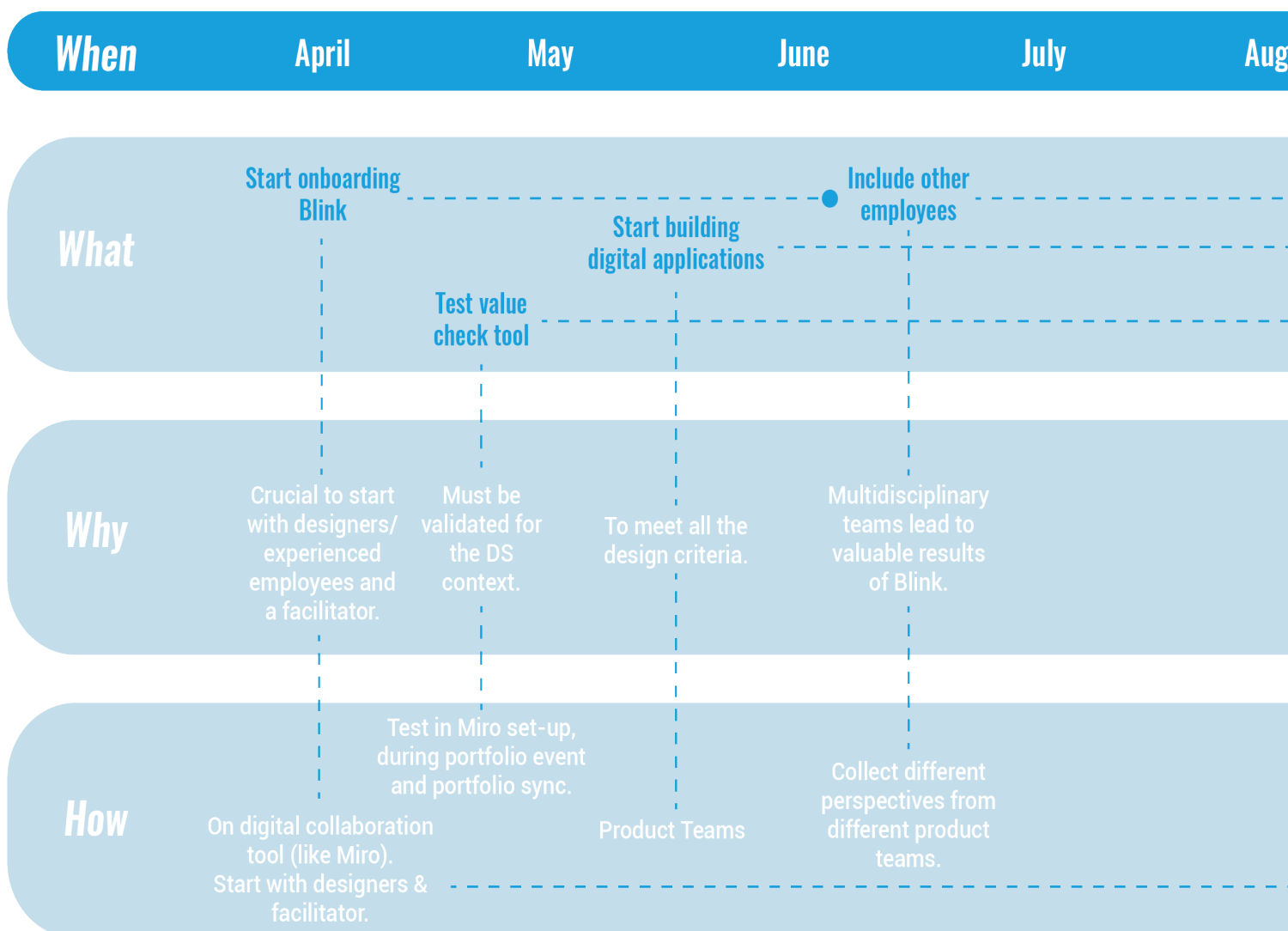


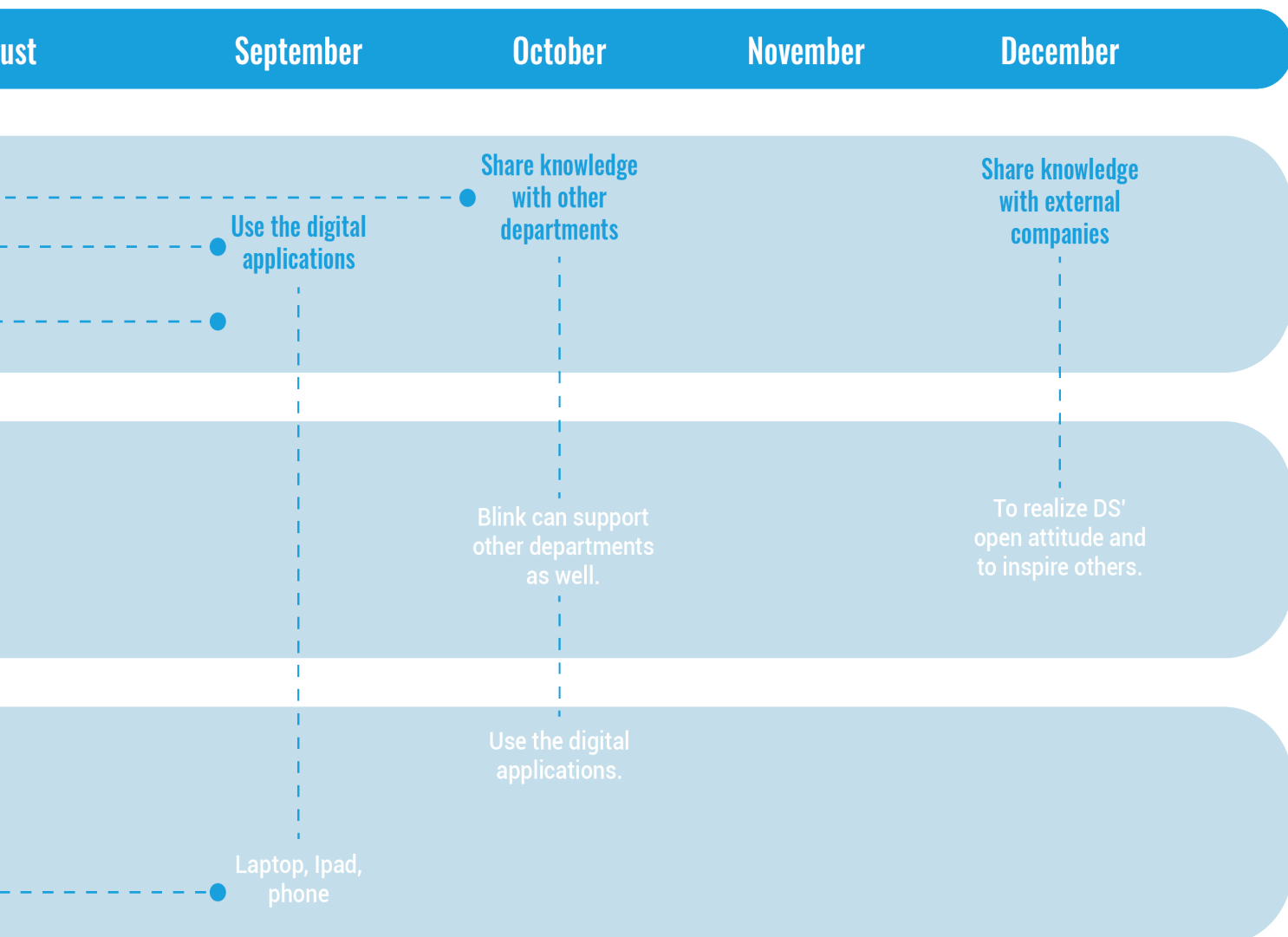
Figure 28. Blink's roadmap

addition to DS, Blink can also be performed by other innovation departments of European Airline and external companies, as long as the user requirements described in chapter 19 are met. Blink is best applied in innovation departments, as it aims to quickly

screen innovation initiatives. Designers in innovation departments often know how to deal with these types of methods given their design background. Blink can also be applied by design consultancies. They are then able to use Blink to help non-innovative companies.

### IMPLEMENTATION TIPS

1. Start with incorporating Blink's goals (quickly discover and maximize initiatives' value) in the OGSM of DS.
2. Emphasize that Blink is a resource and that it is about a way of working.
3. Start with implementing Blink at DS. DS employees are used to applying design methodologies and will recognize the value of Blink. When they achieve valuable results through Blink's implementation, the toolbox can flow to other departments within the company.
4. Emphasize the added value of Blink. Participants must believe in it.



## 26 FINAL REFLECTION

Dear reader, at the very beginning of this report, I explained the structure of my thesis. I emphasized that this report is a concise version of a project with many insights, arguments and details. I took you through a process in which three research questions were central. DS commissioned me to design a concept that would support them in **generating, shaping and creating insight** into innovation initiatives. Along the way, it became clear that these questions are not as simple to answer as they are formulated. When you shape an initiative correctly, you will inevitably generate new initiatives and gain knowledge about their potential value. The three questions thus turned out to be closely intertwined.

A theory that has been guiding in this thesis was established by Kees Dorst (2015). He emphasizes a method for creating initiatives that leads to a wide range of solution options. However, his theory includes more. Much more. By going through a process in which both abstract and concrete knowledge is covered, you obtain a different way of thinking. You see opportunities that you did not see before, you understand the core elements of projects, and you know how to maximize their value. Besides understanding the origin of problems and how to solve them, Dorst's theory also gradually pointed me to my approach as a designer. I mentioned at the beginning of the report that I used a quadruple version of the double diamond. That is still true. But behind this concrete approach hides Dorst's theory, which unconsciously led me to insights about DS' real problem. I made this theory concrete in DS, which led to the final concept: Blink.

The starting point of the assignment was as follows: "What method/product/service can be designed to quickly generate and shape initiatives by DS that enables them to choose the most relevant initiatives in line with DS' strategic vision?" The research question consisted of three sub-parts: generating, shaping and creating insight into initiatives. This problem needs to be solved as it focuses on employees. It is also a validated business problem; a lack of a smart and fast way of generating, shaping and creating insight causes inefficient use of time, energy and money. The assignment described the absence of a fixed format that helps to generate initiatives. A precise formulation of an initiative at the start of the design process was said to increase the likelihood of successful outcomes. The people at DS also find it challenging to compare initiatives' value as they differ in content. They express this value in feasibility,

desirability and viability.

I had little knowledge of the background of the problem, so I started with defining **archaeology**. Through a literature study and observations within DS, I discovered the problem. Firstly, it turned out to consist of many more elements than mentioned in the problem definition. It is not just a matter of generating, shaping and creating insight. A certain mindset, awareness, attitude and knowledge can also play a significant role.

My early work also clarified various associations of the problem. Elements for a successful portfolio mentioned by Cooper et al. (2001) appeared to be essential for the assignment: strategically aligned, maximal portfolio value and portfolio balance. Further research revealed that the design must create a portfolio mindset, agility and focus (Kester et al., 2011) while generating, shaping and providing insight into initiatives. The elements consistency, integration, formalization and diligence (Meskendahl, 2010) also affect the research questions.

All these insights brought me to the core of the problem, and I defined the problem's challenge. The **paradox** of the assignment appeared to consist of several elements. Firstly, **openness is an essential value of DS that makes a fixed structure challenging**. DS welcomes all ideas and wants to create freedom in the execution of projects. This vision is not possible when a set structure is leading.

A fixed structure is contrary to the agile way of working of DS. Agility, or freedom, is essential for shaping initiatives so that no restrictions arise in an early stage. A precise formulation, as described in the problem statement, is therefore not possible. This showed that I had to design a concept that **unites shaping and agility**.

Finally, it was said that potential value consists of feasibility, desirability and viability. DS employees position themselves as magicians: they can make anything come true. As solutions have not been examined at an early stage, everything is still possible. Therefore, **feasibility should not be assessed at an early stage**.

The background, associations and core of the problem had been discovered, allowing me to expand the scope to its **context**. External interviews, ideation sessions and books provided depth to the broad field of the assignment.

By zooming in on stakeholders' **values and needs**, elements from archaeology gained meaning within the assignment. For example, it was examined how

the elements of Cooper et al. (2001), Kester et al. (2011) and Meskendah (2010) could be applied within the context of the problem.

The results showed that the design must be applicable in the long term, fit within DS' strategy and form initiatives within the strategy. This could be related to Cooper's successful portfolio element **strategic alignment**. Second, many outcomes referred to the meaning of **maximum portfolio value** (Cooper et al., 2001). Literature displayed both analytical and risky behaviour, focus, agility, continuously looking for new opportunities, and being aware of your bubble. Observations and interviews refer to maximum portfolio value by being problem-focused, multidisciplinary, inclusive, and aware of assumptions. Moreover, the turnaround time should be two weeks. The third essential element highlighted in archaeology was **portfolio balance**. DS focuses on short and long-term innovations, with an increasing tendency towards long-term innovations. All kinds of innovations must be possible. The last element is in line with Kester et al. (2011) and is called a **portfolio mindset**. The design must support decision-makers in making decisions by offering structure, transparency and overview.

The underlying drivers of these elements led to the design criteria used to develop multiple **themes**. Different combinations of ideas resulted in four concepts, including the frame toolbox concept. The concepts were scored on desirability, viability and feasibility (since this thesis is more than a potential value screening). The combination of the frame toolbox concept and the problem definition scored the highest for this assignment. **This resulted in the frame Blink.**

By conducting many experiments, Blink has been shaped into a design that can be used within DS. Blink is a digital toolbox that onboards core, adjacent and transformational initiatives into valuable focus points for product teams.

By using Blink, participants are enabled to shape innovation initiatives into inspiring focus points. It quickly exposes **problems, themes, solutions**, and **opportunities** to their core and **maximizes** their potential **value**. By implementing a simple step-by-step plan, new opportunities are shaped that **align** with DS' **strategy**. Additional value is provided as non-designers can also use Blink. Blink can be executed by anyone, regardless of his or her role. Blink helps participants to reframe their mindset by discovering the drivers of initiatives to see where the "real" value lies. This value is assessed by using the value check

tool. Focus points are evaluated on desirability and viability and clearly show their potential value. Research indicated that decisions are often based on gut feeling. Follow-up studies should investigate how to apply gut feeling in the value check tool.

A **portfolio mindset** among employees is ensured through Blink's structure and transparency. Blink can be performed in small and large groups, both online and offline. It enables participants to act flexibly due to the short turnaround time. It prioritizes speed above accuracy, as it focuses on rapid screening of the initiative's potential value.

One conclusion is that Blink meets the design criteria. I like to take a step further and test Blink against its own **value check tool**. Blink meets DS' objectives; by redesigning the onboarding process, time, money, and energy are used efficiently. Plus, it focuses on employees and causes a transformational way of working.

Finally, I close the loop by looking back at the paradoxes defined in Chapter 8. **To stay in Dorst's philosophy of embracing complexity; the paradoxes have been resolved by using underlying motives.** Blink offers a simple structure that makes agile working possible. The emphasis is on goals, speed and participants. This also allows an open attitude; it welcomes all initiatives because it aligns them to the strategy. This open attitude prevents initiators from becoming personally attached to initiatives. Additionally, potential value is made transparent by performing a quick scan. Blink focuses on unravelling relevant information and emphasizes that gut feeling must also be included in the process. Blink allows decisions to be made, even when there is little information.

Of course, several limitations and recommendations indicate that Blink is not perfect (see chapter 27). But, in the scope of this assignment, the answer to the question "what method/product/service can be designed to quickly generate and shape initiatives by DS that enables them to choose the most relevant initiatives in line with DS' strategic vision?" is given by **Blink**.

# 27 LIMITATIONS & RECOMMENDATIONS

*During the creation of Blink some limitations have been encountered. These have been briefly explained below. Furthermore, recommendations on future studies have been given.*

First of all, the actual prioritization of innovation projects has been deliberately left out of the research scope. Blink provides a structure to create insight into initiatives' potential value that enables DS to choose projects. However, the actual prioritization of projects is much more complicated. It would be valuable to investigate this further with the concept of Blink.

Next, the thesis does not describe precisely how DS employees will adopt Blink. Nevertheless, it has been proven that DS employees are eager to use Blink. After conducting the experiments, I received requests from DS employees, asking if I could organize a workshop to onboard initiatives. Furthermore, the report proposes an onboarding plan (chapter 25) for Blink within DS' way of working. It would make Blink stronger if the implementation plan was tested as well.

Also, the experiment has not been tested in the full time-box due to limited time; I don't expect this to be a pitfall as it turned out to be very valuable in the shortened time. For a complete result, I recommend validating this part. This has been incorporated in the implementation proposal, which leaves room to develop the Digital toolbox further.

Moreover, due to voluntary participation in the experiments, time was limited. Based on the experiments' results, it is recommended to extend the given time per step. The effect of time variation must also be tested in future studies.

The starting point's opportunity and solution have not been tested in the experiments. However, the Frame Innovation method explains these cases' use, and this thesis follows that theory. Validating the starting points opportunity and solution within the DS' environment would complete Blink.

During the experiments it appeared that examples need some context to make it real. I recommend to build short animation videos to explain the steps.

Moreover, the frame format of Blink is similar to the Epic template used by DS. Certain elements of the Epic can be added to the frame format.

During the experiments the maximum group size was five participants in an online setting. Due to the COVID-19 conditions, it was not possible to perform physical testing in a large group. It has now been assumed that Blink can be used by large groups offline. I recommend testing this in future studies.

Moreover, DS will cease to exist due to the reorganization. The department has halved in the number of employees over the past six months. This made it hard to test the concept with a wide variety of participants. The number of attendees at the portfolio sync and portfolio event decreased, making it hard to observe the real-life setting.

The concept still requires abstract thinking, so it will not be readily applicable throughout the company. DS employees have experience with these types of methods and are eager to use the concept. Therefore Blink is positively welcomed by DS employees. Nevertheless, it turned out that people with no design experience could also successfully perform the concept. Therefore it would be interesting to test whether Blink should be onboarded in design environments or not.

Besides, it was not always transparent for participants what the difference is between clustering and categorization. Therefore, I recommend that the facilitator must be familiar with clustering.

The purpose of the frames were not always clear to the participants. In order to avoid these unclearities a facilitator should always be present. The goal of the toolbox must be explained clearly at the kick-off of Blink.

It appeared that gut feeling is unavoidable in making early decisions. Therefore, a study to provide insight into gut feeling when decisions are made is highly recommended. Blink tries to embrace this as much as possible. This can be improved by visualizing gut feeling with the value check tool. When feasible, it will make a great contribution to Blink.

This thesis was conducted explicitly in the assignment of DS. It has been validated within DS and therefore proven to be a valuable outcome. However, small-scale tests have also been carried out in other industries (IDE students, TU Delft students and a small company). The concept proved to be very valuable in those industries as well. Therefore, it is recommended to validate the concept further in other industries.



# 28 PERSONAL REFLECTION

There were several reasons why I wanted to graduate at the European Airline. Her size and impact certainly played a role. When I look back to the beginning of my project, a lot has changed. The crisis affects the company to its core: the employees. DS ceases to exist. While this was already the plan (a transformational department is temporary), it feels harsh in the current circumstances. Despite this hard reality, I have had the privilege of learning lessons that I did not expect.

**Be agile.** DS follows the core values of agile working. This has shown me how important it is that companies act flexibly. You have to keep up with user wishes and trends. This is easier said than done, especially for big companies as the European Airline. Therefore, make sure you don't get stuck in habits, emphasize the importance of change.

**Combine all.** As many articles describe, it is trendy to attract young talents. This is undoubtedly important to keep your company young and agile. On the other hand, you also need experienced people with knowledge about the company. By doing this, you guarantee the corporate identity.

**Be personal.** Working from home should not be underestimated. Personality is a point where DS scores high, in my opinion. From the first moment they welcomed me openly and I got a lot of personal attention. There was a genuine interest in me among the DS employees.

**Be open to strangers.** According to DS, they have no competitors. They aim to get better in all the things they do. When your goal is to learn, you must communicate this openly and collaborate with externals.

**Try new things to learn.** DS has shown me it is not always about getting the best result. You want to get the best out of yourself. When you radiate that, make sure that all employees are supported when doing this.

Apart from these (unexpected) learnings, I started the project with several ambitions.

First, I wanted to prove that I am a planner and work in a structured way. I think we can all conclude that this has been reflected in the project. I am an initiator; I know how to find my way through a lot of information. I have experienced no stress and have done a lot. My supervisors have stressed that this information overload has a downside as well. It may help me to support decisions, but others can't see the wood for the trees. This feedback has shown me to **focus on essential information**. In my opinion, this has succeeded in this latest version of the report.

I also wanted to become more flexible. Because I work so thoughtfully, I can struggle with an unexpected turn. This appears to be unavoidable in business. Employees prioritize other activities, leading to last-minute cancellations. I have experienced this several times with experiments. Last-minute, the group composition was completely overhauled, which changed the purpose of the experiment. Besides the fact that this was annoying, I tried to make the most of it by **focusing on the learnings**.

Moreover, I wanted to improve my **visual skills**. I have expressed this in the visuals in this report, my presentations and the poster.

Next, I aimed to organize **co-creative sessions** and work with the end-user. However, it was not possible to manage generative sessions with DS employees due to COVID-19. Therefore I organized sessions with fellow students and online experiments for DS employees.

I wanted to **deliver a concept ready to be implemented**. I am proud of the fact that I have designed something that can (already) be used! Curiosity appears to exist among DS employees, and they are eager to use it.

Finally, I learned a lot about **corporate culture**. I have developed a concept that delivers value for DS and fits within their way of working. It is clear and can be done by everyone. Every DS employee can become an initiator. Therefore, Blink can be performed by everyone.

I look back on this project as a fun and great learning experience. I genuinely enjoyed tackling this problem and put a lot of Aniek into it. My visually and precise way of working is recognizable throughout the project. I am a person with a strong opinion, something that Blink also stands for. The concept is built on a method that I sincerely believe in. **Reframing issues, diving into abstract complexity and working with different perspectives are elements that have proven their value to me.**

Of course, sometimes, I experienced difficulty as well. For example, it didn't help to be sick for two weeks and to work from home. The latter occasionally put me in a blur and made me completely absorbed in the project. I was continually working on the project mentally. Besides, it feels like I took a sprint of 100 days. I have done a lot of work in a short time, without delay. An achievement that I am absolutely proud of.

# REFERENCES

- Ansoff, H. I. (1957). Strategies for diversification. *Harvard business review*, 35(5), 113-124.
- Archer, N.P., Ghasemzadeh, F., (1999). An integrated framework for project portfolio selection. *International Journal of Project Management* 17 (4), 207–216.
- Artto, K.A., Dietrich, P.H., (2004). Strategic Business Management through Multiple Projects. In: Morris Peter, W.G., Pinto, J.K. (Eds.), *The Wiley Guide to Project, Program, and Portfolio Management*. Wiley, Inc., Hoboken (NJ), pp. 1–33.
- Baggerman, J. (2019). *Grip op innovatie*. Amsterdam, Nederland: Mediawerf Uitgevers.
- Barczak, G., A. Griffin, K. B. Kahn. (2009). Perspective: Trends and drivers of success in NPD practices: Results of the 2003 PDMA best practices study. *Journal of Product Innovation Management* 26: 3–23.
- Blackburn, S., LaBerge, L., O'Toole, C., Schneider, J. (2020). Digital strategy in a time of crisis. Geraadpleegd op 23 oktober 2020, van <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/digital-strategy-in-a-time-of-crisis>
- Blichfeldt, B.S., Eskerod, P., (2008). Project portfolio management – there's more to it than what management enacts. *International Journal of Project Management* 26 (4), 357–365.
- Blosch, M., Osmond, N., & Norton, D. (2016). *Enterprise Architects Combine Design Thinking, Lean Startup and Agile to Drive Digital Innovation*.
- Bucciarelli, L. L., & Bucciarelli, L. L. (1994). *Designing engineers*. MIT press.
- Bughin, J., LaBerge, L., & Mellbye, A. (2020). The case for digital reinvention. Geraadpleegd op 23 oktober 2020, van <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/the-case-for-digital-reinvention>
- Catlin, T., Scanlan, J., & Willmott, P. (2018). Raising your Digital Quotient. Geraadpleegd op 25 oktober 2020, van <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/raising-your-digital-quotient>
- Cooper, R. G., S. J. Edgett, and E. J. Kleinschmidt. (1999). New product portfolio management: Practices and performance. *Journal of Product Innovation Management* 16: 333–51.
- Cooper, R. G., S. J. Edgett, and E. J. Kleinschmidt. (2000). New problems, new solutions: Making portfolio management more effective. *Research-Technology Management* 43: 18–33.
- Cooper, R. G., S. Edgett, and E. Kleinschmidt. (2001a). Portfolio management for new product development: Results of an industry practices study. *R & D Management* 31: 361–80.
- Cooper, R. G., S. Edgett, and E. Kleinschmidt. (2001b). *Portfolio management for new products*. Cambridge, MA: Perseus Publishing.
- Cooper, R. G., S. J. Edgett, and E. J. Kleinschmidt. (2004a). Benchmarking best NPD practices I. *Research-Technology Management* 47: 31–43.
- Cooper, R. G., S. J. Edgett, and E. J. Kleinschmidt. (2004b). Benchmarking best NPD practices II. *Research-Technology Management* 47: 50–59.
- Cooper, R. G., S. J. Edgett, and E. J. Kleinschmidt. (2004c). Benchmarking best NPD practices III. *Research-Technology Management* 47: 43–55.
- Design Council (2007). Eleven lessons: managing design in eleven global brands (a study of the design process). Uitgave Design Council, Londen (als PDF te downloaden op: [www.designcouncil.org.uk/knowledge-resources/report/11-lessons-managing-design-global-brands](http://www.designcouncil.org.uk/knowledge-resources/report/11-lessons-managing-design-global-brands)).
- Dorst, K. (2015). *Frame innovation: Create new thinking by design*. MIT press.
- Fombrun, C.J., Ginsberg, A., (1990). Shifting gears: enabling change in corporate aggressiveness. *Strategic Management Journal* 11 (4), 297–309.
- Fricke, S.E., Shenhar, A.J., Technol, S., Bloomington, M.N., (2000). Managing multiple engineering projects in a manufacturing support environment. *IEEE Transactions on Engineering Management* 47 (2), 258–268.
- Granstrand, O. (2000). *Corporate innovation systems: a comparative study of multi-technology corporations in Japan, Sweden and the USA*. Chalmers University, Gothenburg.
- Greenberg, D., McKone-Sweet, K., & Wilson, H. J. (2011). *The new entrepreneurial leader: Developing leaders who shape social and economic opportunity*. Berrett-Koehler Publishers.
- Grundy, T., (1998). Strategy implementation and project management. *International Journal of Project Management* 16 (1), 43–50.
- Hatten, K.J, and Rosenthal, R.S. (1999). Managing the process-centered enterprise, *Long Range Planning* 32 (3), 293– 310.
- Hey, J., Linsey, J., Agogino, A. M., & Wood, K. L. (2008). Analogies and metaphors in creative design. *International Journal of Engineering Education*, 24(2), 283.
- Jansen, J. J. P., F. A. J. Van Den Bosch, and H. W. Volberda. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science* 52: 1661–74.
- Kester, L., Griffin, A., Hultink, E. J., & Lauche, K. (2011). Exploring portfolio decision making processes. *Journal of Product Innovation Management*, 28(5), 641–661.
- Kester, L., Hultink, E. J., & Griffin, A. (2014). An empirical investigation of the antecedents and outcomes of NPD portfolio success. *Journal of Product Innovation Management*, 31(6), 1199–1213.
- Lin, C., & Hsieh, P. J. (2004). A fuzzy decision support system for strategic portfolio management. *Decision support systems*, 38(3), 383–398.
- Knapp, J. (2016). *Sprint (How to Solve Big Problems and Test New Ideas in Just Five Days)* [Epub] (1ste editie). Geraadpleegd van <https://www.thesprintbook.com/how>
- Lumpkin, G.T., Dess, G.G., (2001). Linking two dimensions of entrepreneurial orientation to firm performance: the moderating role of environment and industry life cycle. *Journal of Business Venturing* 16 (5), 429–451.
- Malmgren, D. (2020). Your Data Could Do More for You If You Learn How to Use It. Geraadpleegd op 16 oktober 2020, van <https://www.ideo.com/journal/your-data-could-do-more-for-you-if-you-learn-how-to-use-it>



- Martinsuo, M., Lehtonen, P.J., (2007). Role of single-project management in achieving portfolio management efficiency. *International Journal of Project Management* 25 (1), 56–65.
- Meadows, D. H. (2008). *Thinking in systems: A primer*. chelsea green publishing.
- Meskendahl, S. (2010). The influence of business strategy on project portfolio management and its success—A conceptual framework. *International Journal of Project Management*, 28(8), 807–817.
- Miller, D., Friesen, P.H., (1978). Archetypes of strategy formulation. *Management Science* 24 (9), 921–933.
- Morgan, R.E., Strong, C.A., (2003). Business performance and dimensions of strategic orientation. *Journal of Business Research* 56 (3), 163–176.
- Morris, P.W.G., Jamieson, A., (2005). Moving from corporate strategy to project strategy. *Project Management Journal* 36 (4), 5–18.
- Nagji, G. & Tuff (2012). *Managing your innovation portfolio*. Harvard Business Review.
- Lin, C., & Hsieh, P. J. (2004). A fuzzy decision support system for strategic portfolio management. *Decision support systems*, 38(3), 383–398.
- Obwegeser, N., Yokoi, T., Wade, M., & Voskes, T. (2020). 7 Key Principles to Govern Digital Initiatives. *MIT Sloan Management Review*, 61(3), 1–9.
- Ostroff, C., and N. Schmitt. (1993). Configurations of organizational effectiveness and efficiency. *Academy of Management Journal* 36 (6): 1345–61.
- Park, S., Hartley, J.L., Wilson, D., (2001). Quality management practices and their relationships to buyer's supplier ratings: a study in the Korean automotive industry. *Journal of Operations Management* 19 (6), 695–713.
- Patanakul, P., Milosevic, D., (2009). The effectiveness in managing a group of multiple projects: factors of influence and measurement criteria. *International Journal of Project Management* 27 (3), 216–233.
- Payne, J.H., (1995). Management of multiple simultaneous projects: a state-of-the-art review. *International Journal of Project Management* 13 (3), 163–168.
- Pisano, G. P. (2019). *The Hard Truth About Innovative Cultures*. Harvard Business Review.
- Reitmeyer, T., (2000). *Qualität Von Entscheidungsprozessen Der Geschäftsleitung: Eine Empirische Untersuchung Mittelständischer Unternehmen*. Gabler, Wiesbaden.
- Ries, E. (2013). *The Lean Startup* (Vol. 2014). Amsterdam, Nederland: Pearson Benelux.
- Rosemann, M. (2012). The three drivers of innovation-What is the related BPM/EA readiness?. *IRM UK Newsletter*, 1–4.
- Rowe P. (1987) *Design Thinking* (The MIT Press, Cambridge, MA).
- Sanders, L., & Stappers, P. J. (2012). *Convivial Toolbox* (1ste editie). Amsterdam, Nederland: BIS.
- Schäffer, U., (2007). *Management Accounting & Control Scales Handbook*. Deutscher Universitäts-Verlag GmbH, Wiesbaden.
- Schwaber, K., & Sutherland, J. (2011). *The scrum guide*. Scrum Alliance, 21, 19.
- Scrum.org. (2019). Introduction to Evidence-Based Management - How do you measure and improve your ability to deliver value? Geraadpleegd op 23 oktober 2020, van <https://www.scrum.org/resources/introduction-evidence-based-management-how-do-you-measure-and-improve-your-ability>
- Tassoul, M. (2006). *Creative facilitation: a Delft Approach*. Delft: VSSD
- Uexküll, Jakob von. (1957) 'A stroll Through the Worlds of Animals and Men. A Picture Book of Invisible Worlds.' In *Instinctive Behavior*, red. C. Schiller, 5–80.1934; republished Londen Methuen
- Venkatraman, N., (1989). Strategic orientation of business enterprises: the construct, dimensionality, and measurement. *Management Science* 35 (8), 942–962.
- Vera, R. (2018). *Managers the Day After Tomorrow*. Tielt, België: Lannoo.
- Waal, D. F. (2017). *Are We Smart Enough to Know How Smart Animals Are?* (1ste edition). New York, United States : W. W. Norton & Company
- Westerman, G., Bonnet, D., & McAfee, A. (2014). *The Nine Elements of Digital Transformation*. Geraadpleegd op 18 oktober 2020, van <https://sloanreview-mit-edu.tudelft.idm.oclc.org/article/the-nine-elements-of-digital-transformation/>
- Wilson, H. J., Greenberg, D., & McKone-Sweet, K. (2011). *How Entrepreneurs Find Opportunity*. Geraadpleegd op 19 oktober 2020, van <https://hbr-org.tudelft.idm.oclc.org/2011/09/entrepreneurs-find-opportunity>