

Master thesis Jasmijn Verhoef



A few years ago, I worked on a project with primary school children, where they organised an event for their neighborhood. I vividly remember promoting the event at a nursing home with one of the children. A shy 10-yearold girl faced many of her fears, stepping out of her comfort zone that day.

Later, I was interviewed about the project, and the interview was titled, "I show children that making mistakes is okay." This title, though unintentional, perfectly captured the essence of what I value strongly in the practice of design.

Embracing the possibility of failure is crucial in the design process, as it allows for learning through iterations. However, growing up in a performance-focused society has conditioned us to avoid failure, making it challenging to see mistakes as opportunities for growth.

My mission is to demonstrate the value of failure, and this journey begins with this master's thesis.

This thesis explores the concept of failure times, with an average of eight participants per flexibility within the innovation culture at NS session. It provided a positive, energetic, and through an exploratory case study. The innovation safe environment for participants to experience process involves setbacks, unexpected the role of failure in innovation, initiating a directions, and uncertainty. Recognising failures mindset shift that even led to the assignment of as learning opportunities rather than negative new projects. outcomes is essential to navigating this process. However, societal norms have established a While the workshop effectively initiates a performance-focused mindset, leading to a fear transformation towards a more innovative of failure.

To address this, a two-to-three-hour workshop Ultimately, this research provides valuable was designed, focusing on 1) letting go of insights for cultivating a failure-flexible expectations, 2) distinguishing between failure innovative culture at NS and offers a useful in innovation and regular projects, and 3) framework for other organisations aiming to learning as much as possible in the time that incorporate failure as a constructive element in we have. The workshop was conducted six their innovation processes.

#### EXECUTIVE SUMMARY

safer domains, where being open to failure is the workshop's impact. desired. Such a safe domain within the NS is the Innovatie Platform, a team dedicated to This work contributes to existing research workshops.

innovation process.

culture -building trust, encouraging out-ofthe-box thinking, and altering mindsets— there This fear hinders innovation within organisations remains room for improvement. Enhancing like NS, where the high societal dependency organisational governance to embed this on safe and punctual services fosters risk concept more deeply and making moments of aversion. This cautious approach extends to failure more explicit could further strengthen

facilitating innovation projects and conducting by demonstrating the use of design thinking to highlight the value of failure, offering a practical solution to previously identified Using an action research approach, the study tensions, and designing a workshop tailored investigated the role of failure flexibility in to an organisational context in addition to an NS's innovation culture, employing various educational context. Despite the workshop's anthropology and design methods. The findings success in fostering a failure-flexible mindset, showed that while NS employees understand the future work should focus on overcoming importance of embracing failure in innovation, challenges related to deadlines, clarifying they don't know how to use failure to grow in the responsibilities, and better defining innovation projects.

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#### INTRODUCTION

Innovation is often understood as the holy grail of organisational success, yet its journey comes with setbacks. As the founder of Pixar once stated, "Fail early and fail fast," as embracing failure is essential to the innovation process (Catmull & Wallace, 2014). This idea is resonated by Google, which portrays their failed projects in the "Google Graveyard." However, the ability to navigate and learn from these failures, rather than viewing them as mistakes, is essential for fostering a culture of innovation (Iske, 2018).

Innovation is important to many companies, and so it is for the Dutch Railways (NS). As the largest passenger transport company in the Netherlands, NS plays a crucial role in society, impacting the daily lives of over a million passengers. Innovation is reflected in various parts of their services, including checking in with the OV card, renting OV bikes, and using the NS app for travel planning. These innovations underscore the significance of NS as an interesting practical case study for exploring the potential applications of failure flexibility in innovation.

Although NS has adopted innovation methods, cultivating an innovation mindset in organisational culture remains challenging (Prud'homme van Reine, 2017). This requires a shift from linear thinking to iterative processes, where failures are embraced as integral to the innovation journey (Iske, 2018). Embracing uncertainty and seeing failure as an opportunity to improve in an innovation process is important to learn from iterations in a design process (R.

A. Price, 2023). Being able to see these failures as inspiration to continue the innovation trajectory is a capability that R. Price and Van Der Bijl-Brouwer (2023) have captured as designer resilience. This is 'the meta-cognitive capacity and adaptability we draw upon when designing gets difficult'. In academic literature, this capability has been investigated in educational contexts but not yet in organisational contexts.

#### Therefore, this project aims to explore failure flexibility in the innovation culture of the Dutch Railways (NS).

Throughout this design project, an exploratory, gualitative, and action research approach will be employed. The research will be guided by three phases: prioritising problem definition initially, followed by conceptualization, and ultimately focusing on validation in the context of the NS.

In this report, you will first be guided through background information on the context of the company. Following this, theoretical background will be shared. Then, an explanation of the approach will be provided. Subsequently, the report will progress through three phases, each commencing with an explanation of the methods and techniques employed, followed by a discussion of the results obtained.



NS

2023).

averse.

#### **PRACTICAL CONTEXT**

Since its establishment in 1837, NS has been the largest Dutch railway company. Their responsibility is to transport passengers, and therefore, NS is the face of railway transportation. Starting in the mid-1990s, NS underwent a transformation from a governmental to a private organization. Nevertheless, NS remains reliant on concessions granted by the government today, each with a period of 10 years. Additionally, the government maintains full ownership of the NS, holding a 100% share. This monopoly and reliance on the government highlight its crucial societal role (Nederlandse Spoorwegen, n.d.).

Since NS is the face of train transportation, the organisation gets all the criticism when expectations are not met, even though the success of the operation does not merely depend on NS's operation. Additionally, the pandemic has resulted in a decrease in passenger numbers and labour shortages, which have created financial difficulties. As a result, ticket prices have increased and trains have been cancelled, fueling dissatisfaction and leading to a decline in the company's reputation (Nederlandse Spoorwegen,

NS has a responsibility to provide a safe and punctual service. The safety and privacy of the passengers or colleagues are central to each project. Therefore, employees don't want to be accountable for any mistakes that will harm people, which makes them risk-

The crucial societal role, reputational fear, and focus on safety cause a risk-averse organization. In the operational domain, avoiding risks is important. However, avoiding risks spills over to safer domains where failure could be of great value, for example, in the Innovatie Platform.





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Figure 1 Location Innovatie Platfor



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#### **PRACTICAL CONTEXT**

#### INNOVATIE PLATFORM

Such a safe domain is the 'Innovatie Platform' (see figure 1). This team of 6–8 people is located in a room next to the canteen. Their mission is to encourage innovation at NS by providing time, tools, knowledge, and a budget. Their focus is twofold (see figure 2). On the one hand, they keep track of the six latest technology trends. On the other hand, they aim to raise innovation capability within NS by hosting workshops and coaching innovation trajectories using their own methodology, which is based on lean startup and design thinking.

Innovation projects start with the introduction of an idea. This idea is selected, and a budget is assigned to it. After this stage, the idea is summarised using the 'start-up canvas', and the underlying assumptions are mapped to reframe the underlying problem. These assumptions are validated through experiments, likely leading to changes in the start-up canvas (see figure 3). The goal of the method is to ensure the idea is valuable before implementation, involving many people and significant resources.



Figure 2 Mission Innovatie Platform



Figure 3 NS innovation method

#### **THEORETICAL CONTEXT**

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Let's zoom out to see what has been studied about this topic before. Looking at the project aim: "exploring failure flexibility in the innovation culture of the Dutch Railways (NS)." I'll first consider the notion of 'innovation culture', then I'll consider what failure means in design and innovation, and then I'll consider existing academic work.

#### INNOVATION

#### What is innovation culture?

While an increasing number of organisations have adopted innovative methods in their way of working, the real challenge remains to bring the design mindset into the organisation's culture (Dobni, 2008). Design requires the ability to continuously reflect on action and adjust course while keeping the end goal in sight (Dorst, 2010). This means design is not simply a method to be applied, but a mindset to be cultivated throughout the process.

But what do we mean when we talk about innovation culture? Several studies have made an effort to lay out the dimensions of an innovation culture. The different sets of characteristics were analysed using grounded theory. This entails the outcomes of several qualitative studies that were used as key building blocks to iteratively combine into new concepts through constant comparison (Clark et al., 2021). The studies of Dobni (2008), Carlgren & BenMahmoud-Jouini (2022), Herzog & Leker (2010). Prud'homme van Reine (2017) and Micheli et al. (2018) were combined into the following themes: 'infrastructure, external focus, human-centeredness, equality, methodology, engagement, education, and flexibility.' I'll elaborate on each.

**1.** For a fruitful innovation culture, the infrastructure of the organisation needs to allow for innovation. This means the architecture of the company formally allows for innovation, and the design function operates in a leading role (Dobni, 2008; Micheli et al., 2018).

2. The company needs to be externally focused. This means the company is aware of both competition as stakeholders to collaborate with (Carlgren & BenMahmoud-Jouini, 2022; Dobni, 2008; Herzog & Leker, 2010).

3. The process needs to be human-centred. This means that employees need to know for whom the innovation will be valuable. and they need to feel it's relevant. (Carlgren & BenMahmoud-Jouini, 2022; Dobni, 2008; Prud'homme van Reine, 2017).

4. The organisation needs to be as equal as possible. This means top management supports innovation, people collaborate, and emotions are allowed at work (Carlgren & BenMahmoud-Jouini, 2022; Prud'homme van Reine, 2017). Cannon and Edmondson (2005) emphasise that for an organisation to cultivate a culture where failure is accepted, it is crucial for senior management to actively support and endorse this mindset. Additionally, Davis (1999) stresses that hierarchy can be a barrier for employees to be creative.

Later in the report, I will relate these characteristics to the NS.

5. There has to be a formalisation o methodology that guides innovation processes (Micheli et al., 2018; Prud'homme van Reine, 2017). Having a clear process helps build acceptance in the rest of the company (Klitsie et al., 2020).

6. Employees need to be engaged with the innovation. This means people feel that they are intrinsically motivated and believe in innovation (Carlgren & BenMahmoud-Jouini, 2022; Dobni, 2008).

7. There needs to be innovation education, which entails providing workshops, trainings or coaching on design and innovation (Dobni 2008: Micheli et al., 2018).

8. Finally, there must be **flexibility** in the innovation process. This means employees need to be open to a change of course and understand the iterative nature of an innovation process. (Carlgren & BenMahmoud-Jouini, 2022; Prud'homme van Reine, 2017)

#### How do design and innovation relate?

When talking about innovation culture, it touches upon many different characteristics of design thinking. Innovation and design are broad terms, understood in different ways, and being used interchangeably. For that reason, it's useful to discuss what both terms mean. The definition handled by the Innovatie Platform is 'the development and appliance of new ideas, technology, products, processes, and/ or services that create potential value for NS and their customers, employees, and society. Innovation is directed at the implementation of new technologies. Design thinking is essential for innovation to compete (R. Price et al., 2021). This is because innovation requires design thinking to come up with creative ideas (Kelley & Kelly, 2014). As Hernández et al. (2018) found, design can be understood as the language for innovation, where design plays a role in the innovation process by 1) differentiating when entering the market, 2) guiding implementation, 3) doing design research, 4) transforming ideas into concepts, 5) articulating ideas, and 6) creatively going through the process. This means that innovation can be understood as the development of new ideas, for which a design approach is needed to come up with creative solutions.

#### FAILURE

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#### Does failure exist in design?

We've seen that flexibility is essential for a healthy innovation culture. This comes down to the ability to reframe failure into a learning opportunity. Since this ability drives the creative mechanism, it is central to the design process (Cole, 2014).

Kapur (2008) shows that failing can train the creative mindset. He searched for a way to teach students to learn from failure in problem-solving. He divided the students into two groups, where one group was offered an ill-defined problem that they would all fail to solve. In the second group, he offered a well-defined problem. After this exercise, he gave the two groups the same problem, and the first group (who were forced to fail) succeeded in solving the problem. With this, he proved that forcing failure can increase the willingness to learn.

Design is about constantly iterating and learning from action (Dorst. 2010). Failures are fuel for iterations, which drive the design process. This comes back in several specific parts of the design process.



Figure 4 Three waves of creativity (Heijne & van der Meer, 2019)

**Reframing the problem**: A core capability • of designers is to find latent needs and re- that characterises the practice of design. A evaluate the exact problem to research what prototype can be a physical thing made from we're solving exactly (Sanders & Stappers, 2013). cardboard, but it can also be a scenario sketch Here, embracing failure is essential to being open or role play (Buchenau & Suri, 2000). By making to unexpected changes in the type of problem to ideas concrete, designers create something to be solved (Carlgren & BenMahmoud-Jouini, 2022; reflect on and learn from. The prototype is never Prud'homme van Reine, 2017).

failure in design is ideation. Heijne & van der Meer (2019) describe three waves of creativity a group • goes through during an ideation session (see experimenting with ideas is a common way to figure 4). To come up with novel ideas, a group uncover assumptions captured in the solution typically first goes through the common and then (Prud'homme van Reine, 2017). Experimenting in the silly ideas. This means that the 'wrong' ideas design is not done to confirm but to explore the from the second wave should be embraced to underlying faulty assumptions. The more failures come to the third wave with the novel ideas.

**Prototyping**: Prototyping is a technique made with the aim of making it 'finished'. It is a tool that is meant to see where it fails so that lessons Ideation: Another important element of can be drawn from it. (Tschimmel, 2012)

> **Experimenting**: Finally, testing and in the beginning, the more learnings are learned for the implementations when more costs and people are involved (Cannon & Edmondson, 2005; Carlgren & BenMahmoud-Jouini, 2022; Prud'homme van Reine, 2017).

#### Failure in organisational innovation

Now that we know how failure has a central place in the design process, we should take a helicopter view and look at the place of failure in the overall innovation process. Failure must be avoided in certain parts of the process and embraced in others. Kim & Wilemon (2002) visualise this distinction well in figure 5. Failure is something that happens in the first fuzzy front-end (FFE) phase. This phase starts from the moment an opportunity is spotted and ends where development can start (Kim & Wilemon, 2002).

In this first phase, there's room to ideate and explore. The idea is small and flexible to change. Therefore, validation should happen here to save costs later in the project. This phase

includes 1) defining the scope of the project and investigating how it aligns with the strategy of the company; 2) finding out that more people need to be involved; and 3) taking time to go over the idea and find out what is needed for the project. It means qualitative, experimental, and informal research is needed with little budget. This phase involves high uncertainty as it introduces new problem and solution spaces, resulting in the involvement of more stakeholders (Klitsie et al., 2020). In this phase, having an open mindset to navigate through the fuzziness is needed to see failure as a learning opportunity.

To navigate through this FFE, it is essential to be open to learning from failure to pave the way for creative innovation (Iske, 2018; Tahirsylaj,

2012). This means failure should be reframed as a learning opportunity, rather than a setback (Brown, 2016; Kelley & Kelly, 2014; Tahirsylaj, 2012).

The second phase begins when the project moves to the development stage. Consequently, there's less tolerance for failure in this phase as the organisation invests significant money and resources into development. This means a bigger team is involved, and the process is systematic and quantitative. It is difficult to reject an idea, so there's less room for failure. The goal is to implement the idea.

This means that while uncertainty in a project's outcome necessitates learning from failure to ultimately succeed, during execution, failure must be minimised.



Figure 5 Fuzzy front-end in innovation (Kim & Wilemon, 2002)

#### Two types of failure

failure: one in the early idea phase, where failure during innovation, which I'll call positive failure should be encouraged, and another in the formal (right side of figure 6). In this type of failure, project phase, where failure should be avoided. 'approach motivation' is leading, which means Based on a conversation with Stefan Persaud, we're eager to learn new things (Icekson et al., coordinator of the course 'productive failure' at TU 2014). We don't aim to meet external expectations, Delft, I make the distinction between negative and as they can be deadly for creativity (Cole, 2014). positive failure (see figure 6). On the left side of the Also, we're not looking for one perfect answer to model, we have negative failure, which happens this type of failure, as it can block creativity too when expectations are not met. In this type of (Davis, 1999). When people are encouraged to failure, people are led by 'avoidance motivation'. explore instead of following instructions, they are They do an assignment with the goal of avoiding more creative and open to learning new things risks (Icekson et al., 2014). This causes several (Kapur, 2008; Persaud & Flipsen, 2023). During this psychological processes, like seeing things as exploration, failure is experienced in such a way threats instead of challenges, feeling anxious, that the end result is not achieved in one go. In and having low intrinsic motivation (Icekson et al., the NS context, this could involve exploring which 2014). When there's one right answer, this is the programmes planners use to create timetables. type of failure that might help us come to the desired result. In the NS context, this could, for example, fail to make the trains depart as planned.

We need to understand two types of looking at However, we need failure to drive the process



Expectation



Figure 6 Productive failure

Let's combine the two types of failure with the FFE Why do we fear failure? model of Kim & Wilemon (2002). We've seen that However, deliberately deciding to look at failure Also, organisations struggle with risk-taking, failure in innovation happens in the FFE. The type positively is easier said than done. In our society, creativity, and embracing failure (Carlgren & of failure we need here is positive failure; we need looking at failure negatively predominates. This BenMahmoud-Jouini, 2022; Icekson et al., 2014). to learn from failure to move on and navigate is caused by a deep-rooted fear of failure in our Learning from failure does not fit the way our through the process. Negative failure happens society (van der Drift, 2017). We don't know how organisations are organised, as many companies in the second phase, when a lot of investments to deal with an open end and feel embarrassed are led by achieving KPIs, which inherently means have been made and the desired solution is not when we fail (Cannon & Edmondson, 2005). In there's no room to fail and explore (Cannon & achieved. If we integrate positive failure at the our educational system, we've learned nothing Edmondson, 2005). This can lead to several beginning of the innovation process, it means different. It is focused on performance, and failure biases, like projection bias, confirmation bias, that the outcome is uncertain and that it could go is discouraged (van den Bergh et al., 2022). It is endowment bias, and availability bias, which slow in different directions than expected beforehand guite competitive, and students have the desire down the invention of valuable, novel, and useful (see figure 7).

to excel. However, failure demotivates people innovations (Liedtka, 2015). and puts them in a negative mood (Houser-Marko & Sheldon, 2008),



Figure 7 Combining the two types of failure and the FFE model

#### **EXISTING WORK**

#### Creating a safe space

researched before, and solutions have been a community to collaborate and exchange ideas. explored. A safe environment is necessary, and In this set, there's no right or wrong, but it's an people need to know how to take a flexible exchange of activities. approach to design (Cannon & Edmondson, 2005; Iske, 2018; R. Price & Van Der Bijl-Brouwer, A more concrete example of teaching students to 2023). Price and Van Der Bijl-Brouwer (2023) have defined ten principles that guide students on the research of Kapur (2008), they have applied to practice a more flexible way of designing. They give guidance on being resilient to failure in the design process. The first four focus on growing into the designer you aim to be. In this process, it is necessary to embrace the journey eager to learn when they first failed. and overcome fears, which means the possibility of failure should be dealt with. The second set However, these concepts have been explored in focuses on gathering feedback from others by sharing unfinished work and not striving for perfection but focusing on the process. This set implies feedback, and the risk of failure is part of this project.

Fearing to fail in an innovation context has been the process. The final set focuses on being part of

fail is the research of Persaud et al. (2022). Based the theory of productive failure to a design course. In their research, they opposed productive failure to direct instruction. They found that students turned out to be more creative, explorative, and

an academic setting to teach design to students. Therefore, I aim to research the possibilities of failure flexibility in an organisational context for

#### **APPROACH**

Through an exploratory case study, I will ANTHROPOLOGY investigate how failure flexibility can be Within this action research approach, In addition to these anthropological methods, embedded in the innovation culture of the NS. anthropological research activities will be done to Since the purpose is to understand and improve understand the culture. Firstly, observations will the design capability of failure flexibility, I'll hold be made, which will be recorded in jotted field on to an action research approach, in which the notes. Secondly, semi-structured interviews will role of action researcher will be extended to be held, using snowball sampling to find relevant design innovation catalysts (Price et al., 2021) interviewees. Thirdly, participation is essential to 2002). The concepts being prototyped are likely (see figure 8). This entails that research and understanding the culture from within and making to be interactive sessions. experimentation will be done in collaboration the ontological commitment, which entails with the NS employees. The reason for this is observation and participation being inherently The project will be structured in three phases: that changing behaviour requires co-creation bound together (Ingold, 2014, p. 387). from the start, ensuring the team's involvement and support throughout the mplementation. Each week, a critical reflection will be done to evaluate the activities.

#### DESIGN

design research activities will be done. This entails solutions that will be explored through co-creation and prototyping. This entails experiments early to test assumptions and communicate insights to create a common understanding (Grudin & Pruitt,

problem definition, conceptualization, and validation (see figure 9). In the first 6 weeks, the problem will be defined. In the second six weeks, ideas will be conceptualized. In the next six weeks, validation will be done. Even though these three phases offer structure, they will be handled fluidly, as outcomes in one phase may be answers to the goals in other phases.

The catalyst applies an e catalyst gets to know action-orientated inquiry to support efforts to develop design capability participants beyond the immedia objective to build design capabilit in order to create momentum for METHODOLOGIES INTEGRATE DESIGN INNOVATION CATALYST CRITIQUE DISSEMINATE he catalyst undertakes critical The catalyst stands upon the eflection after each cycle of action o shape learning that informs the oundation of action research lowing cycle of action abling reception within

Figure 8 Design innovation catalyst framework (Price et al., 2021)

# NTRODUCTION



#### ACTIVITIES

#### PERSONAL APPROACH

Next to the academic approach, I'll lay out my personal approach below.

#### Being part of the team

freedom to act as a full team member.

- I planned 'get-to-know' conversations with my et al., 2020). team, and in team sessions, I fully participated and shared my thoughts.
- I made sure to work from the office often to see my team. This offered me the chance to think along with my team. This also allowed me to grasp the latent aspects of the culture that contain norms, values, and habits.
- In the beginning, I joined meetings as a fly on the wall, but over the weeks, I gained the confidence to share my thoughts more and more. I value a fresh perspective, and I knew that my team also appreciated me sharing my thoughts.
- Additionally, I involved myself in the team by using the NS innovation method (see figure 11). This helped me understand from within how their innovation process works.

#### Involve my team in the process.

From day one, my team considered me a full I did not only involve myself in my team, but member of the team, which offered me the also actively involved my team in my project. This helped prevent the 'Not Invented Here' syndrome and would make adoption more probable (Klitsie

- During the weekly stand-up on Monday, I shared what I had been doing, what I planned to do that week, and what I needed from my team.
- When I needed something from colleagues beyond my team, I put it in the newsletter (see appendix D).
- Every three weeks, I hosted a session with my team where I shared my results and gathered input or feedback from them. This was not only to gather data but also to get my team to think along and help me with interesting meetings or activities for me to join. For these sessions, techniques derived from Heijne & van der Meer (2019) were used.
- Every week, I had a 30-minute meeting with my supervisor from the NS. During this meeting, we discussed how I can use the resources of the Innovatie Platform to make progress.

#### Follow intuition

Finally, I made sure to join in meetings and events that piqued my interest. This helped me navigate the fuzzy front end and unexpected findings. I didn't know how it was useful for my project directly, but it always brought up interesting conversations. This entailed going to the feminist day event, initiating informal lunch walks, or attending an external event (see figure 10).

# **Reflection days**

Next to the three weekly office days, I took two days a week that I used to reflect on the insights I had gained over the week. On Wednesdays, I went to the TU Delft to share my results with co-graduates or help them out with their project, which brought me inspiration to use new techniques. On Fridays, I tried to dedicate myself to reporting my insights, revising my planning, and reflecting on my way of working.





Figure 10 Rapid prototyping event

Startup Canvas		
idee: Workshop: leren om te experimenteren	2 Noom: Josmin	Wie steurnt je? Innociatie platform
Welk problem los je op? Dat mensen niet dunva De Late zier hoe he experimenter	Voor wie los je dit op? Mersen die een creatiep innoublie traject door willen	Verlangens: Een bruikbore creation
Hoe zouden we: long drempelig experimenteren kunnen	ean moediger?	
<ul> <li>Here will be dis optionsen?</li> <li>Dear ear works sharp te genere due () Theorie will be (3) op ear grappinge moniter da Warte laat zien en (5) Hast hoepost op hun eigen project</li> </ul>	- Wat heb je daarvoor nodig? - D een groep (5-7) meu - D Slide deck - D Inhoud : theorie, tool ene	er duiz groag mee willerdoer sgizer er experinselen Mappen
• Watis de positives impart? Marses usées mar ruinte on la experimenteren . Er is mar ruinte on creatium ideaen la beduen	<ul> <li>Wat is de negative impact?</li> <li>Het kan Valer out tijd.</li> <li>Het kan moeilijke tijn a cuertuige von dez</li> </ul>	s verspillige n apdracht gevers to ze oenpak
📕 Aan welke BHAG's draagt het bij?	lke thema's draagt het bij?	Hoe complex is de realisatie?
People: favoriers verligeers van Nederland     People: favoriers verligeers van Nederland     People: favoriers verligeers van Nederland     People: favoriers verligeers van de reciper     People: Voldeerde investieringssuine     People: favoriers verligeers van de recipers	aanbod, Phoductiert hierb. ptimaliseren Duutzaamheid burd werken (belegd bij afdeling duutzaam ondernemen)	*****



Figure 11 Filled in start-up canvas, assumption canvas and experiment canvas

1. Problem definition



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Intr Apr Inno Pro Cor

To gain a thorough understanding of failure flexibility in the innovation culture of NS, qualitative research was done. The guiding question for this phase was: How is failure flexibility embedded in the innovation culture of the NS? In this chapter, I will first share my approach, then I'll discuss the innovation culture of NS, the failure flexibility of NS, and the problem statement that follows from this research.

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#### **APPROACH**

#### **PROJECT PARTICIPATIONS**

To observe the innovation culture from within, To understand the experiences of employees I actively participated and joined the Innovatie regarding innovation, another nine in-depth, Platform in their daily work. These activities semi-structured interviews were held. Five of consisted of workshops, team meetings, innovation project meetings, board meetings, trajectories guided by the Innovatie Platform, and and events. I captured my insights in a reflection four were going through innovation trajectories afterwards.

#### **EXPERT INTERVIEWS**

expert interviews were conducted with people booklet was pilot tested with a colleague first, who focused on improving the innovation culture of then adjusted and handed out to the interviewees. NS. This resulted in three HR leads: one behaviour They were asked to fill out the booklet beforehand. coach, one project lead who encouraged failure This was done to get them thinking about the in innovation, and one employee who had been topic beforehand. The context mapping booklet working for NS for a long time and knew about the provoked visual thinking to reach their way of developments of the rganization. The interviews thinking on a different level than mere speech. lasted 30 minutes each, and explicit consent was After five interviews, saturation was reached asked to use the results in this report. The topic regarding innovation in general, so therefore the quide can be found in appendix A. One interview context mapping booklet was adjusted to gain was conducted physically, and five interviews more information on experimenting in detail. Not were conducted online. Notes were typed during all interviewees brought the booklet beforehand; the interviews; no voice recordings were made. one did fill it in but forgot to bring it during the The notes were read back afterwards, and insights interview, and two did not have time to fill in the were listed for each interview.

#### **IN-DEPTH INTERVIEWS**

these employees were participating in innovation independent from the innovation trajectories. To get a sense of their experiences, a context mapping booklet was used (Visser et al., 2005) To get to know NS and its innovation culture, six (see appendices B and C). The context mapping booklet at all. This was solved by giving time during the interview to fill it in. The booklet was used as a topic guide and discussed page by page. Seven interviews were conducted physically in a closed room, and two interviews were conducted online. The interviews lasted 45 minutes and were recorded with explicit permission and transcribed anonymously. After, the interviews were listened back to, and interesting guotes were highlighted and coded. These were clustered and translated into insiahts.



#### **TEAM SESSION**

The first session took place in week 1 and aimed to explore the given problem. The 1.5-hour session started with a presentation of my project brief, after which I offered time to purge any top-of-mind ideas or questions to clear the mind. Then, I took time to go up the abstraction ladder and figure out what caused the problem. Subsequently, we became more specific, and I collected ideas on what effects the problem had. After this, everyone wrote down a reframed 'how might we'. After the session, all post-its were clustered on themes, and the how-might-we's were prioritised.

#### SYNTHESIS

To converge the insights, several techniques were deployed. First, all insights and their relations were drawn on a visual map (see figure 14). Secondly, insights were captured using the start-up canvas, the assumption mapping canvas, and the experiment canvas, which are part of the innovation method of the Innovatie Platform (see figure 2). Thirdly, all insights were written on post-its and clustered (see figure 15). These three outcomes were translated into an analysis, a problem definition, and a first concept.



Fiaure 13 Problem findina session



Figure 14 Visual map



Figure 15 Clustered insights

#### **INNOVATION CULTURE**

Based on my perspective as a team member of the Innovatie Platform, I analysed the eight aspects of innovation culture for the NS.

#### 1. Infrastructure

An infrastructure for innovation is partly present. There are no designers in top management positions, but there are several design and innovation teams.

Recently, the innovation board has been set up with members across all nine departments in the organisation to scout possible innovation projects that connect to the NS strategy. Although governance is valuable, meetings are an extra burden to their daily work, and innovation is not their core job.

Additionally, when we look at the role of design in the infrastructure of the organisation, design is seen as a service, and it's not yet incorporated into the core of the company, which means there's room to grow (Micheli et al., 2018). People who believe in innovation still need to convince "We've got strict KPIs, are result-driven, and cannot 2. Externally focused leading colleagues of its value, as illustrated in make mistakes. Who am I to address an issue? We NS seems quite externally focused. Firstly, the auote below:

"Team x recently got a new PO. They were eager to explore [and innovate], but the PO didn't want to make room for that [...] so now they forced doing an innovation sprint every quarter, which resulted in some discussions..." – HR lead

Observations and in-depth interviews revealed that projects are driven by KPIs, meaning that failing, learning, exploring, and therefore innovating are not valued in the organisation's infrastructure.



Figure 16 Rapid prototyping workshop Gravity

cannot discuss it; that's the unwritten rule." - HR knowledge is exchanged on how other similar companies, like KLM or foreign rail transport companies, innovate. Secondly, workshops are followed at external companies like Gravity (see figure 16). Thirdly, external companies come to host 16 to educate us, like Business Models Inc. and The Talent Institute. Fourthly, collaborations with organisations like Voice Your Future or the TU Delft 5G fieldlab are explored.

The human-centred characteristic stood out from This characteristic reflects the degree to which the onboarding to me. In the online onboarding top management supports and encourages process, NS made me feel welcome and showed employees to express themselves. NS handles they cared about me. Even in the office, this idea the behaviour uidelines. 1) speaking up, 2) was continued (see figure 18).

"If you help people develop themselves better, employee involvement will rise, value will be "People act the way they're used to acting. Within NS, delivered faster, and fewer people will call in sick, of you see that when a manager gives an assignment, which passengers will eventually take advantage." everyone starts running, but no one says, Let's take a step back. [...] People do things because they have - HR lead to, but don't realise why.." - HR lead

1



Figure 17 Human-centered view on innovation

#### 3. Human-centred

innovation is directed towards either the passenger or their colleagues. In almost all interviews and Even though this behaviour is encouraged, employees easier (see figure 17).

*"We want to optimise to give the passenger a better"* experience." - Team member

#### 4. Equality

showing courage; and 3) being open to change. These came back in all the research activities that Not only in their way of working but also in their I did. One illustrating example was that they were innovation projects, they are human-centred. 'tested' in a playful, gameshow way to find who Employees have the end-user in mind, and all was the most innovative person in the department.

a lot of meetings, it was said at least once that NS employees have trouble practicing these the goal is to either provide a better service to competencies. From expert interviews, it was the passenger or to make work for operating NS concluded that NS employees still look up the hierarchy to find out what's expected of them, and therefore they don't feel involved enough.



#### **INNOVATION CULTURE**

#### 5. Methodology

The Innovatie Platform offers its innovation method, based on a combination of design thinking and lean startup. This means they have a structured, formalised process to guide innovation (see figure 3). Additionally, there's a process for implementing innovation within the organisation (see figure 19).



This characteristic means that people are intrinsically motivated to innovate and feel relevance. From participation and in-depth interviews, it was found that people are very enthusiastic when it comes to innovation. They are excited about trying out new creative methods and believe in the power of innovation. To quote one interviewee:

"Innovation is important because we can use it to be leading as an organization" - team member (see fiqure 20).

This shows the sense of purpose employees are feeling. However, this enthusiasm makes them go to the solution too quickly without critically investigating the problem early in the process. This causes setbacks later in the process, which is demotivating, as found in the interviews.

7. Innovation education The Innovatie Platform offers several workshops, trainings, and coaching sessions for different 8. Flexibility People step into a process that is solutionpeople in the organization. For example, every The biggest problem seems to be with the oriented, and each step that brings them back year the innovation week takes place with the flexibility of the employees. From the in-depth intention of educating people on innovation, interviews and observations, I found that even to re-evaluate the problem definition feels like a aimed at all NS employees. Additionally, trainees though people know what innovation is and why waste of time. They feel time and performance are guided in their assignments. Next to trainings it is important to fail, they don't understand the pressure, and therefore, they don't feel free to explore outside the box. and workshops, an innovation community is being importance of iteration in their process. set up to exchange knowledge on innovation.

Hoge mate van onzekerheid

Figure 19 NS implementation process

"As a company like the NS, you can't run behind on innovation. You should be continuously looking for new appliances and improvements." – HR lead



Figure 20 Importance of innovation

"The product will remain the same" - Team member

"It's a bit embarrassing because I didn't draw the steps as we were supposed to, but as we did." -team member

#### FAILURE FLEXIBILITY

Next to insights gained about the overall HR LEADS innovation culture, there were findings on From the interviews, I discovered that HR leads how people embrace failure in the innovation understand the importance of failure in the process. Various perspectives were considered, innovation process. They actively promote this (see figures 21, 22, and 23). including those of HR leads, scrum masters, and team members.

understanding in their work, as seen in the behavioural principles they advocate: speaking Even though the scrum masters did understand up, demonstrating courage, and being open to change. They also encourage a culture of feedback and reflection.

"I would rather have one try ten times and fail eight of them to create more satisfaction and efficiency than for people to be too careful." - HR lead

#### SCRUM MASTERS

Scrum masters are generally able to translate failure embracement into innovation processes

the importance of failure to the iterative nature of innovation, they felt frustration towards people around them who did not understand the importance of exploration in innovation.

"Yes, that's it. We still find it quite difficult at the NS. It's okay to make mistakes, but still, we hear this voice. What is it that holds people back? What do we need to make people comfortable with failure?" - Scrum master





points:

300 Experimenteren in innovatie is voor mij... 穆深 3 MA  $\bigcirc$ ?}*\$*? ₽Ċ På ) ( 0- E ×∎⊘

Figure 21 Exploration in the innovation process



Figure 22 Different possible outcomes in innovation



Figure 23 Failure flexibility in the innovation process



Figure 24 Going to the solution too quickly

#### **TEAM MEMBERS**

However, most people guided by the Innovatie Platform don't have a lot of experience with innovation. Even though they acknowledge the value of failure, they do not seem to embrace it enough in their process.

Expecting a linear process, team members see failure as a setback, not an opportunity. The reasons that people think they are in this by you?" - Team member development phase are argued by the following

Figure 25 Finding budget

instead of exploring its appliances. There's no illustrated well by a remark an employee made during a coaching session when it was discussed whether the technological solution would even be useful for the problem at hand:

# "But in that case... are we still supposed to be guided

In-depth interviews revealed that one failure was "going to the solution too guickly." Figure 24 shows how the interviewee tried out several large technological solutions in leaps 1, 2, and 3 and now decided to go back and re-evaluate the goal.

*Figure 26* Losing time by talking to stakeholders

**1.** Team members aim at **developing a technology**, **2.** Another argument that proves people don't realise they are in the fuzzy front-end is that room for a change in problem definition. This is they are focused on **finding a sponsor** within the company, which is a typical characteristic of the development phase. This is illustrated by a quote from an employee who explained the innovation project as

#### "The product will remain the same, but who'll be the sponsor? That's what we're figuring out." - Team member

The solutions considered in this innovation process entailed different ways of sponsoring (see figure 25). This illustrates the endowment effect, where innovation is hindered due to attachment to the initial solution (Liedtka, 2015). This further indicates a focus on development rather than exploration.

#### FAILURE FLEXIBILITY

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3. Furthermore, mapping out stakeholders feels "When we mention the need for change, people like a waste of time, which feels demotivating perceive it as a major task. What blocks us is doing (see figure 26).

"We were called back, and that takes time... What This can block the innovation process as people are we supposed to do now?" - Team member

However, dedicating time to finding out who the confirmation bias (Liedtka, 2015). stakeholders are is one of the dimensions of the fuzzy front-end.

rigid process. This is illustrated in the way people leverage failure during development but often explained their innovation process to me:

steps as we were supposed to, but as we did." - effectively in their innovation efforts. Team member

exploring beyond the given format. Another quote focusedmore ondeveloping ideas than exploring shows how a linear process is aimed at:

beforehand. We should've done it in one go" - Team rigid process, and viewing experimentation as member

5. Another finding that confirms that team members stages of innovation. see the process as linear is that experimentation is seen as a big step. During one coaching session, Across the organisation, there is a clear need the problem was validated in a survey that had to for team members to learn how to incorporate be checked by the management team first. When failure into the innovation process more asked if they had checked with colleagues about effectively. the problem, they said no. The same finding was found during an expert interview:

small experiments." - HR lead

might not be open to different outcomes of experiments, which causes the hypothesis

In summary, HR leads encourage bravery and view failure as a valuable part of the innovation 4. Another reason is that people aim to follow a process. Scrum masters understand how to feel frustrated by others who don't share this perspective. While team members recognise "It's a bit embarrassing because I didn't draw the the value of failure, they struggle to apply it

The emphasis on technological solutions and This indicates people feel restricted from securing sponsorship indicates a mindset possibilities, which can make revisiting the problem definition feel discouraging. Challenges "We lost time by not deliberately viewing the options such as identifying stakeholders, adhering to a a major undertaking highlight the difficulty of embracing failure during the early, ambiguous

are dependent on their services to commute to work, school, or social activities. NS has a responsibility to provide a safe and punctual service. This also means people are critical of the services that NS delivers, which makes NS employees risk averse. This causes a threat avoidance motivation where failure is looked at negatively and processes are followed linearly. In the operational domain, avoiding risks is important. A mechanic should follow a step-bystep guide to fix the train in the right way, and a planner should make sure there are enough trains and drivers at the right time. However, avoiding risks spills over to safer domains where it's safer (and even essential) to fail, like the innovation process. This view causes difficulty in embracing the iterative nature of the FFE. When improving wayfinding on Utrecht Centraal, for example, one should find out how passengers currently find their way and who'll be involved by changing the signs and setting up small-scale experiments to explore solutions. All these activities come with uncertainty, for which an open-minded learning mindset is necessary to navigate through this FFE. Even though people see failure as something to learn from, they don't know how to embrace it when it comes to innovation. This leads to the problem statement:

NS plays an important role in society, and people

Team members acknowledge the value of failure, but don't know how to use failure to grow in the innovation process.

#### CONCLUSION

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(1)

# How did I embrace failure?

**1.** By accepting the fact that I did not exactly know who I needed to talk to. I began speaking with HR leads, which made me realise the need to talk to more people with firsthand innovation experience.

2. By participating in meetings or projects without exactly knowing what I wanted to get out of them. This blank perspective always provided me with unexpected insights.

**3.** By creating a mindmap, not to have a perfect overview but to organise my thoughts (see figure 14).

**4.** By sharing the first version of the context mapping booklet with a team member and asking her to fill it in. This helped me understand whether I would receive the right answers.

**5.** By changing the context mapping booklet halfway through the interviews. I felt data saturation on innovation, so I wanted to specify the interview towards failure.

## **KEY TAKE-AWAYS**

- HR leads and scrum masters need team members to understand how to embrace failure.
- Although team members acknowledge the value of failure, they don't know how to use failure to grow in the innovation process.

'The choice is a simple one: Learn to fail, or fail to learn.' - Tal Ben-Shahar

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2. Conceptualization



# INTRO

The findings from the problem definition phase were translated into ideas following the guiding question: how might we teach team members to use failure positively to grow in innovation? In this chapter, I will first discuss my approach, and then I'll continue to discuss the design criteria, considerations, and workshop elements.

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# CHAPTER STRUCTURE

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#### APPROACH

#### During this phase, I designed a workshop while Feedback session doing small experiments to fuel new iterations. In the second team session, I gathered feedback I formally conducted team sessions and also on my analysis and workshop. I shared my ideas participated in various projects and workshops first and asked my team to write down their to assess the integration of my workshop into remarks on post-its for better time management. the existing workflow. Additionally, I shared I spent 20 minutes presenting and 10 minutes the unfinished version with my team, friends, discussing. family, or fellow students to gather feedback. Furthermore, I conducted expert conversations Experiment session to gather feedback, and I used my own project I pilot-tested one element of the design with my as a subject to test certain elements. Lastly, I team. This was an experiment to make participants asked fellow students to try out certain parts experience the difference between positive and in experiments. In the following section, I will negative failure. The goal of this team session was elaborate on each of these activities.

#### **TEAM SESSIONS**

#### Ideation session

To kick-start this phase, I gathered input from my team during an ideation session to scope the project. The session started with presenting the results I had gathered so far. Secondly, a purge was done to clear everyone's mind. Thirdly, the MATEC technique was used to extend flexibility in the ideation process, based on the technique described by Heijne & van der Meer (2019). These ideas were clustered and selected using dotvoting. A round was done in which everyone had the chance to share the most interesting ideas to close off the session. I summarised the combined ideas into one concept, following the startup canvas as part of the NS innovation method (see appendix E).

to find out whether the experiment illustrated the two types of failure well enough (see figure 28).



#### **PROJECT PARTICIPATION**

on my own design choices in the workshop.

#### SHARE UNFINISHED RESULTS

results and gathering feedback. I was initially the storyline of the workshop. unhappy with the flyer, for example, so I shared it with my team and designer friends to gather their feedback. Also, the failure contract I shared with colleagues when it came up in the conversation.

#### EXPERT INTERVIEW

A second way to improve the designed workshop Informal expert conversations were conducted to was to get inspiration from other workshops iterate on the set-up of the designed workshop. given by the Innovatie Platform. I dove into the One was with the coordinator of the TU Delft archive of the Innovatie Platform and checked course, 'productive failure'. Three conversations out how previous workshop slide decks had been were conducted with NS colleagues who are composed. This helped me make the workshop experienced in giving a wide range of workshops consistent in the workflow of the Innovatie to NS employees. Two conversations were initially Platform. Additionally, I attended meetings where planned as intake conversations. It turned out future workshops were being composed to reflect that they did not have a team with whom they could participate during the two conversations. Therefore, the talk was pivoted to a feedback conversation where I walked them through the I wanted to challenge myself by sharing unfinished set-up, which allowed me a moment to practice



Figure 28 Experiment session



#### APPROACH

#### INTROSPECTIVE JOURNEY

I used my own project as a subject to quickly test ideas. For example, when composing the failure contract, I asked myself reflective questions on how I would use failure in my project on pink post-its. On yellow post-its, I answered myself, making more questions on pink post-its follow. Subsequently, I clustered similar questions and used them for the first version of the failure contract. In later versions of the contract, I filled it in myself again (see figure 29).

#### **EXPERIMENTS**

To test the elements of the workshop. I asked for help from fellow students and family. I let them fill in the experiment plan and failure contract to see the types of answers that would follow. Additionally, I tested the 'making a present' assignment with one of my friends to check whether it would support the story line during the workshop.

#### RECRUITING

I used several channels to promote the workshop. First, an interest form was attached to the innovation newsletter (see figure 31). Additionally, previous interviewees were sent a detailed flyer. Furthermore, I e-mailed other people in my NS network, who forwarded it to their colleagues. In total, 32 people were directly e-mailed by me. Other than that, me and my team mentioned the workshop in several meetings. Finally, flyers were spread around the building, and they were projected on the screen that NS employees see when they enter the building (see figure 30).





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Je hoort het tegenwoordig overal: zonder falen geen succes! Vier je mislukkingen! Maar dit is makkelijker gezegd dan gedaan. Want... wanneer is falen waardevol in een project? En hoe faal je veilig?

In innoveren is falen essentieel. Denk aan het zoeken naar een relevant probleem, het komen tot een creatieve oplossing of het uitproberen van een idee Bij elk van deze stappen brengt falen je juist tot de beste ideëen en daarom kun je je afvragen of falen in innovatie überhaupt wel bestaat.

Wie zoek ik? Ik zoek een team NS'ers die in hun dagelijkse werk samenwerken en willen leren hoe je falen kan gebruiken om tot een innovatieve oplossing te komen. Het maakt de workshop het leukst als jullie een uitdaging hebben waar je na de workshops ook mee aan de slag zou willen.

Duur 9.00 - 12.00

Datum 19 juni

Locatie Innovatieplatform

Voorbereiden Denk van tevoren alvast na over een probleem/uitdaging waarmee je aan de slag zou wille gaan tijdens de workshop

# INNOVATIEPLATFORM

Figure 31 Flyers

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Wat kan je verwachten? Tijdens de workshop duiken we in de wereld van falend innoveren. Het zal een interactieve speelse workshop worden. We gebruiken creatieve brainstormtechnieken en ik geef ie concrete handvatten voor na de workshops. Natuurlijk zorg ik voor snacks koffie en thee, onmisbaar voor creativite

Wie ben ik? Ik ben Jasmijn Verhoef, Masterstudent Strategic Product Design aan de TU Delft. Deze workshop is onderdeel van mijn afstudeerproject bij het innovatieplatform. Daarom meteen een disclaimer: voor mij is deze workshop natuurlijk ook een experiment!

Je hoort het tegenwoordig overal: zonder falen geen succes! Vier je mislukkingen! Maar dit is makkelijker gezegd dan gedaan. Want... wanneer is falen waardevol in een project? En hoe faal je veilig?

lk zoek 3-5 samenwerkende NS'ers, die met een concrete uitdaging aan de slag willen gaan

Duur 2 sessies van 3 uur

Datum te bepalen met jouw team

Locatie Innovatieplatform

Meer info? Mail jasmijn.verhoef@ns.nl of scan de QR code!

# INNOVATIEPLATFORM

Workshop Falend innoveren

#### **DESIGN CRITERIA**

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#### HOW MIGHT WE...

Earlier, we defined the problem statement: "Employees don't know how to use failure to grow in the innovation process." The how-might-we question that follows from this is:

HMW teach team members to use failure positively to grow in innovation?

The first ideation session led to the concept of a workshop, as the solution evolved around teaching. Furthermore, this fits into the strategic model and value proposition of the Innovatie Platform.

#### **MUST HAVES**

To translate a negative view of failure into a positive view of failure, we need to focus on three different parts of this model (see figure 32).

# 1.

# Embrace uncertainty

The workshop needs to guide people to let go of their expectations of a specific result and learn to embrace the unknown (Icekson et al., 2014).

2.

3.

# Regular vs. innovation

It needs to convince people of the value of failure in innovation as opposed to wanting to avoid failure in regular projects.



#### Encourage learning

Participants need to train a positive mindset to learn as much as possible in the time that they have (Cannon & Edmondson, 2005; Svensson, 2015; Icekson et al., 2014).

#### SHOULD HAVES



# Safe space

To learn from failure and be vulnerable, a safe space must be created during the workshop (Cannon & Edmondson, 2005; Price, 2023).

# **COULD HAVES**

#### Cultural change

✓ The workshop could be a starting  $\cup$ point for a cultural change and a shift in mindset where failure is embraced.



#### **DESIGN CONSIDERATIONS**

Based on the design activities and design criteria, I list some design considerations for the designed workshop below. These are partly based on assumptions, which I will validate in the next phase.

#### PARTICIPANTS

I chose to look for a team of 5-10 direct colleagues who are enthusiastic about learning about innovation.

- The group size is important so that everyone feels free to participate in the discussions and so that I can keep track of the creative process (Heijne & van der Meer, 2019).
- The group being an existing team is important for several reasons. Firstly, they can work on a challenge they all experience in their work together, and they can potentially continue working on it after the workshop. If they continue, their learning will be reinforced. Secondly, social influence will help in changing behaviour. They can reflect on it together, take over each other's behaviour change, TYPE OF CHALLENGE Madden, 1986; Cialdini, 2007) (see figure 33)..
- & Wilemon, 2002).



Figure 33 ASE model (Ajzen & Madden, 1986)

ongoing challenge so that they can incorporate participants from being too involved in the content their learnings into a real-life case. This makes the and not being open to learning about the process. I need people to have the right attitude before integration of their learning into their daily work Nevertheless, I think it's valuable to experiment coming to the workshop. They need to be easier. I want people to bring a challenge that with participants bringing their own case for intrinsically motivated to learn about failure they feel connected to because they need to feel this workshop to see whether they embrace the in innovation (Ajzen & Madden, 1986) (see energised to potentially continue with the idea learnings better. figure 33). This can be used as a springboard after the workshop. Especially as the fuzzy-front to fuel the innovation after the workshop (Kim end of innovation brings setbacks to be dealt with, it helps to overcome them when people feel ownership over the idea (Kim & Wilemon, 2002).

However, the Innovatie Platform normally does and remind each other of their goals. (Ajzen & During the workshop, participants work on an not let participants come up with cases to prevent



#### **DESIGN CONSIDERATIONS**

#### SET-UP

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An intake conversation is conducted before the workshop. The goal of this conversation is to identify the types of participants, discuss a case, and plan a date and location. I initially planned to do two sessions of three hours. The reason for this is that I wanted to give the participants time to reflect on their ideas and learnings and revise them in the second session. Nevertheless, this time commitment proved unrealistic in the short term. Therefore, the workshop was shortened to a single session of two to three hours. I made sure the rooms had whiteboards for the interactive parts and a presentation screen for the theoretical and individual parts (see figure 34).

During the workshop, we zoom in on three loops of the fuzzy front-end in which we practice a flexible failure mindset: problem definition, idea generation, and experimenting (see figure 35). The session plan can be found in figure 36, and the slide deck is in appendix F.





Figure 35 The value of failure in three different parts of the innovation process

	Design criterion	Time	Activity	Туре	Where?	Materials
Introduction		15 min	Discuss failure and expectations with group	Discussion	Table	
			Share goal	Discussion	Table	
			Share time schedule	Discussion	Table	
			Blind introduction	Energizer	Table	<ul><li>Pen per person</li><li>Post-it per person</li></ul>
Experiment	2. regular vs. innovation	15 min		Group work	Two seperate rooms	<ul><li> 2 origami papers</li><li> origami instructions</li><li> example origami crane</li></ul>
Value of failure	2. regular vs. innovation	15 min	Negative vs. positive failure	Theory	Table	
			Fuzzy front-end	Theory	Table	
Problem definition	1. Embrace uncer <b>tainty</b>	20 min	Mac Donalds milkshake	Example	Table	
			Problem finding	Group work	Whiteboard	
Idea generation	3. Encourage learning	25 min	Top of mind ideas	Group work	Table	
			3 waves of creativity	Theory	Table	
			Criminal round	Group work	Whiteboard	• Drawn jail on whiteboard
			Invention of post-it	Example	Table	
			Reframing useless inventions	Energizer	Table	
			Rebuild ideas	Group work	Whiteboard	
Break		15 min				
Reflection	2. Regular vs. innovation	5 min	Where don't we want to fail?	Individual	Table	Failure contract per person
Experiment	1. Embrace uncertainty	40 min	Devil's debate	Group work	Whiteboard	Blue and red post-its
	3. Encourage learning		Experiment plan	Individual	Table	<ul> <li>Experiment plan per person</li> </ul>
Reflection	2. Regular vs. innovation	15 min	Failure contract	Individual	Table	
Feedback		15 min	What did we learn?	Discussion	Table	<ul><li>Feedback form per person</li><li>Stickers</li></ul>

#### **WORKSHOP ELEMENTS**

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#### Discussing the value of failure

First, people need to be aware of the fear of failure before they can practice it (Tahirsylaj, 2012). In the team session, we concluded participants needed to understand it to feel ownership over the practice of failure. Therefore, a discussion will be started on how failure can contribute to innovation.

#### Blind introduction

To set the scene for the workshop and warm up the participants, a blind introduction round is done. During this activity, participants are asked to draw their neighbour in ten seconds on a postit without looking at the paper. This is an exercise where everyone 'fails'. The post-it will be given to the drawn person and be put on the chest as a reminder for everyone throughout the workshop that it's okay to try and fail (see figure 37).





Figure 38 Introduction slides

54 Figure 37 Blind introduction

#### Experiment

Before addressing a real-life challenge, I conduct an experiment to discuss why failure is challenging in innovation. I force them through a short 3-minute design process where I'll split the group in two. Both groups get the same assignment: 'Make me a present with this origami paper'. One group receives complex instructions to fold an origami crane with an example (see figure 39), and the other group is given no instructions. After 3 minutes, the groups are taken back together, and without showing the end result, a reflection is done on the process. In line with the theory of Kapur (2008), the group with no instructions experiences a will to learn and continue (see an example of an outcome in figure 40). The group with instructions experiences frustration due to their inability to meet expectations. This helps explain the difference between negative and positive failure (see figure 41). The experiment additionally starts a reflection on the barriers to innovation, which is necessary for behaviour change (Ajzen & Madden, 1986; Cialdini, 2007).



Figure 39 Example origami crane



Figure 40 Example of an outcome of the group without instructions



#### WORKSHOP ELEMENTS





#### **Problem finding**

During this activity, the goal is to revise the problem. Team members often cling to their initial problem view; this activity challenges them to reframe it and release their initial preconceptions. Figure 43 Ideation slides The techniques to be used in this activity may vary from an abstraction ladder (Heijne & van der Meer, 2019), the 5W1H (Heijne & van der Meer, 2019), or replacing keywords in the problem statement, depending on which technique fits the case the energizer is needed. In this energizer, a useless best.

#### Criminal round

useless or wrong ideas are a necessary source of positive, affirmative mindset is needed to protect inspiration to come up with useful ideas. Using the originality and trust intuition (Heijne & van der Because this puts them in a fictional role, they 'criminal round' technique, participants first think Meer, 2019). Being positive helps people to be feel free to be critical in a lighthearted and fun of illegal solutions to inspire realistic ideas (Heijne more creative (Icekson et al., 2014). After this way (Heijne & van der Meer, 2019). The outcome is & van der Meer, 2019). This technique challenges energizer, all existing ideas are revised, and a used to choose which experiments they conduct safe thinking, as participants often hesitate to realistic new idea is chosen. think outside the box.





#### Useless inventions energizer

To translate the criminal ideas into realistic ideas and get participants in the right mindset, an invention is shown, and the group is encouraged the angel's role. Each participant lists three points to make up arguments on what could make this from their role's perspective on post-its, and the invention valuable. This energizer helps people In this activity, participants will experience that seek opportunities instead of setbacks, as a one. This opens up a deliberate, safe space to



Devil's debate

When an idea is chosen, participants get the chance to challenge their flexibility in critically looking at their ideas. The group will be divided into the most optimistic people and the most critical people. To get them out of their comfort zone, the optimistic people will be given the devil's role, and the critical people will be given ideas are then added to the whiteboard one by evaluate the idea critically and optimistically. afterwards.

#### Experiment canvas

Team members often see experiments as a major step and are therefore reluctant to start with smaller ones. This prevents them from failing quickly. To encourage faster experimentation, I hand out an experiment canvas that prompts them to plan future experiments, starting from long-term goals and working backward to what they can do today. The canvas starts with asking, 'What can you do in the future to test this idea?', and it makes steps back to 'What can you do today to test your idea?'. This follows the suggestions of Liedtka and Friedel (2008) for moving new possibilities forward. Additionally, training people in assumption testing and field experiments helps bring down the confirmation and endowment bias, holding on to your initial ideas (Liedtka, 2015). The experiment plan can be found in figure 45.

#### Reflection

To translate the learnings into their daily work, two reflection activities are done. People need to deliberately decide to learn from failure in the future (Tahirsylaj, 2012). According to behaviour change expert Cialdini (2007), people are more likely to change their behaviour when they write it down and share it with others. The first activity focuses on reflecting on areas of their work where Stickers failure is not valuable. In the second reflection activity, they focus on how they will embed failure more in their work through a 'failure contract'. In this contract, they make agreements with themselves and decide on an action plan for how to get there. figure 47. Using the behaviour change template created by Tiggelaar (2018), they write down the goal they want to achieve first and, from there, explain how they will support this goal. The failure contract can be found in figure 46.



Figure 45 Experiment canvas

To remind participants of the workshop, I will distribute stickers depicting the various topics we discussed. This will act as a reminder to look more positively at failure. The stickers can be found in



Figure 47 Stickers

Post-it

### How did I embrace failure?

**1.** By sharing my analysis and initial concept with my team, while feeling uncertain about the quality. Facing the risk of failure helped me get feedback and improve the analysis and initial concept for a new iteration.

2. By sharing the unfinished graphic design of the flyer, failure contract, and experiment plan with people, while being unsure about the clarity of the communication. By challenging myself to show it to others, it became more apparent to me what I had to change.

**3.** By sharing the unfinished workshop slides during intake and expert conversations. While sharing the story, I discovered what made sense and what needed further attention. Their feedback helped me reflect on why I made specific choices and whether I should change them.

**4.** By changing the duration of the workshops from two sessions to one session. When I realised it was difficult to schedule two sessions in the short term, I adjusted the workshop to be delivered in one session while still ensuring it was a learning experience.

# **KEY TAKE-AWAYS**

• In the designed workshop, participants will experience the value of failure in innovation by: 1. letting go of expectations and embracing uncertainty; 2. understanding the difference between failure in innovation and failure in regular projects; and 3. using the time that we must learn as much as possible. "We didn't fail a thousand times, the light bulb was an invention with a thousand steps - Thomas Edison



# 3

Appr Worl Worl Worl Worl Worl Find Impl Con

The workshop design was validated to my approach, then I'll reflect on each of the six workshops, and finally, I'll relate them to the design criteria defined earlier.

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#### APPROACH

#### PLANNING THE WORKSHOPS

As preparation, an intake conversation preceded each workshop to discuss the time, location, number of participants, level of design thinking in the team, and the challenge we would tackle during the workshop. For some teams, the challenge was proposed by the contact person, while others wanted to use the workshop to make progress on a stalled project. Details of the workshops can be found in figure 48.

#### ASSUMPTION MAPPING

To validate specific goals during the workshop, I mapped out assumptions based on the design criteria and the concept as described in Chapter 2 (see figure 49). These mapped assumptions gave me a framework to hold on to during the data gathering but were not leading in structuring the findings. I used data from my reflection, the feedback forms, colleague feedback, failure contracts, and experiment plans to evaluate each assumption.

# REFLECTION

independently from my mapped assumptions, to appendix G). prevent bias and be open minded.

	Date	Duration	Group size	Involvement with challenge
Workshop 1	3rd of June	2 hours	7	Medium
Workshop 2	6th of June	3 hours	6	High
Workshop 3	13th of June	2 hours	12	Medium
Workshop 4	13th of June	2 hours	10	Medium
Workshop 5	19th of June	3 hours	11+2	Medium
Workshop 6	18th of July	3 hours	8	Low

Figure 48 Planned workshops

#### FEEDBACK FORM

I described the context of the workshop, the out feedback forms to gather anonymous data conducted interviews with my contact persons creative process, observations in the group, what on several assumptions. The feedback form about a week after the workshop. I would do differently next time, and my overall was changed after the second workshop to get feeling about the workshop. I wrote this reflection more feedback on potential improvements (see

#### COLLEAGUE OBSERVATION

For each workshop, I invited a colleague of my team as an observer. I didn't specify which parts needed feedback because I wanted them to notice what stood out on their own.

#### POST-WORKSHOP INTERVIEWS

After the workshop, I wrote a reflection in which At the end of the workshop, participants filled To analyse the effects after the workshops, I

Assumption	Test
1. The branding communicates the content well	Feedbackform
2. Two sessions of 3 hours fit their schedule	Observation
3. 5-10 people is not too many to have everyone involved	Observation
4. Bringing their own challenge helps them learn how to apply their learning	Feedback form
<ul> <li>5. People are willing to let go of their first idea</li> <li>6. The devil's advocate technique helps with that</li> </ul>	Feedback form
7. People enjoy the workshop	Observation
<ul> <li>8. Convinces the value of failure in innovation</li> <li>9. People understand the difference between innovation and regular projects</li> <li>10. Understanding failure will help being more open to learning about it</li> <li>11. The experiment makes the two types of failure clear</li> </ul>	Feedback form
<ul> <li>12. Trains a positive mindset</li> <li>13. The criminal round shows how seemingly useless ideas can be useful</li> <li>14. The useless inventions energizer helps in being positive</li> </ul>	Feedback form
<ul><li>15. Creates a safe space</li><li>16. The devil's debate helps open up a safe space to be critical</li></ul>	Feedback form
<ul> <li>17. Changes way of working</li> <li>18. The social influence of collaborating with their own team helps with that</li> <li>19. The experiment canvas helps with that</li> <li>20. The failure contract helps with that</li> <li>21. The stickers help with that</li> <li>22. They continue working on the case</li> </ul>	Post-workshop interviews
23. Gives confidence in failure	Post-workshop interviews

Figure 49 Mapped assumptions

#### WORKSHOP 1

GROUP Team service and sales - 7 people

#### CONTACT PERSON Scrum master

DURATION

2 hours

person. The participants were specialised and he said: involved in the case.

#### EXPECTATION

Thinking outside the box and getting to know each other

DESIGN THINKING LEVEL Low

#### Key insight

The workshop helped people change their mindset. This was not only noticeable by them speaking the right language:

But also how they viewed the experiments. One participant wrote down they wanted to pitch the The case was defined together with the contact idea to leads, and when I asked them the reason,

This shows an open mindset, focused on improvement rather than immediate success.

This mindset change extended beyond the workshop. The team adopted a more vision-driven and possibility-focused approach. Their team even got the responsibility to rethink the vision of their department as a result of this workshop.

#### **Reflection point**

Towards the end, they discussed whether their planned experiments were within their mandate, as they didn't want to obstruct others' work. This created an additional barrier to fully embracing failure in innovation.



66

#### WORKSHOP 2

GROUP Team bicycle sheds - 6 people

# CONTACT PERSON Product owner

DURATION 3 hours

# CASE

l ow

The team had been stuck on the case for two years. They wanted to use this workshop to think outside of the box for the case.

# EXPECTATION

Take a bold iteration on their innovation project

# DESIGN THINKING LEVEL

#### Key insight

They were excited to finally make progress on the case they had been stuck on. The energy increased during the workshop.

The examples provided a tangible way to talk about the learnings.

Despite being stuck on the case, the workshop revitalised their energy, and they felt the need to continue.

#### **Reflection point**

At the end of the workshop, a discussion arose on how to build this mindset in their daily work. I realised that to be able to learn from failure, people need to build over time. Their enthusiasm for the workshop motivated them to allocate this time, but it might be something to consider for future projects.



#### WORKSHOP 3

GROUP Team OV chip - 12 people

CONTACT PERSON Scrum master

#### DURATION

2 hours

#### CASE

done during the workshop.

EXPECTATION To think outside the box.

DESIGN THINKING LEVEL Mixed

#### Key insight

Even though the group contained some people who had knowledge of design thinking, they learned exactly what I intended them to learn.

After the workshop, they pursued their idea, which The case was not defined beforehand, so this was offered a solution from a new perspective. They presented it to the management team, and now they'll realise their idea in November.

#### **Reflection point**

This was guite a big workshop, so I had to divide the group in two. Also, the chosen problem was guite technical, so I found it hard to keep track of the content of the process. Besides, the case was not defined beforehand, which led to a chaotic start where we had to define the problem first. This made it difficult for me to guide the process well, and they indicated they did feel lost sometimes. This means the maximum number of people should be lower.

Additionally, there were quite some people who knew about design thinking, and they felt they heard things they already knew. This means that when the goal of the workshop is to think outside the box, it might fit novice innovators better.



#### WORKSHOP 4

GROUP Team strategy & innovation - 11 people

CONTACT PERSON Product Owner

DURATION 2 hours

#### CASE

in solving the issue.

EXPECTATION

Taking a bold move

DESIGN THINKING LEVEL

High

#### Key insight

Compared to the other groups, this group was quite known with innovation, and they had more of an advisory role than an operational role.

Therefore, they did not have much trouble thinking outside the box and were more critical about the exact definition of failure and how each workshop element contributed to learning to fail.

The case was defined together with the contact They wished they had been challenged more and person. The participants did not have a high stake did not feel like they needed more time for the workshop, contradicting the other groups.

#### **Reflection point**

This workshop confirmed that my initial target group (people who want to innovate but don't know how) is likely a good fit for this format. The participants in this workshop were experienced in innovation, and therefore they did not feel they learned many new things. Just like in workshop 3, we can conclude that when the goal is to use the workshop to take a bold step, novice innovators might be a better fit.



#### WORKSHOP 5

#### GROUP

Team sources and team distribution- 11 people (+ 2 online)

# CONTACT PERSON

Scrum master

#### DURATION

3 hours

#### CASE

The case was defined together with the contact speaking about failure easier. person. The participants were specialised and involved in the case but did not have a high stake in solving the issue.

#### EXPECTATION Team bonding

DESIGN THINKING LEVEL Low

#### Key insight

The value of failure was very clear in this workshop. That was mainly caused by connecting the theoretical models better. During the reflection moment where we discussed where failure is not desired, the discussion rose that failure can be of value anywhere.

Additionally, the lessons seemed to make

kunner wij als team

#### **Reflection point**

The participants in this group were relatively technical. They weren't accustomed to the openness required for innovation, so some found the workshop vague and didn't immediately see the value for their daily jobs. This indicates that a more thorough evaluation could be conducted in advance to determine if and how innovation could enhance their current workflow.

CASE

Mixed

#### WORKSHOP 6

#### GROUP

People individually applied for this workshop as a Participants in this group generally knew the part of the 'summer school'

#### CONTACT PERSON

# DURATION

3 hours

Participants were asked to send in ideas for a case the others were not.

#### EXPECTATION

Learn something new over summer

# DESIGN THINKING LEVEL

#### Key insight

importance of failure in innovation but highly valued experiencing it during this workshop.

via email, of which I chose the most tangible one. Additionally, the difference between regular and One participant was highly involved in the case; innovation projects was clearer in this workshop compared to the other workshops. The reason for this might be that I embedded more reflection moments.

#### **Reflection point**

I need to clarify how we specifically encounter failure during the workshop. I explain to participants that failure in innovation doesn't truly exist, and they experience this perspective. However, the workshop's title suggests a more explicit experience of failure.





# FINDINGS

To summarise the insights, I will reflect on different elements based on the feedback forms, observations, colleague feedback, and interviews afterwards. I will first go by the practical elements of the workshop, after which I will continue to the must-haves, shouldhaves, and could-haves as defined in design considerations in Chapter 2, 'Conceptualization'.

mpt	Average	Count	Standard deviation
workshop gave me energy workshop gaf me energie"	6.0	48	0,7
derstand why failure in inno- on is important nap waarom falen in innovatie angrijk is"	6.4	48	0,8
med a different view on failure beb een andere kijk op falen regen"	4.3	48	1.9
workshop created a safe ce le workshop werd een veilige geving gecreëerd"	6.6	48	0.7
king on my own case was ful to learn about failure rken aan mijn eigen case was ig om te leren over falen"	5.5	28	1.2

Figure 50 Quantitative results on a 7-point Likert scale



#### Branding (assumption 1)

The workshop was branded through a flyer that was physically and digitally spread (see figure 31). Most participants had the right expectations. This means the flyer fits the content of the workshop. However, the question remains whether a longer

workshop 1

about how to make room in the governance of the organisation to fail.

"How do we make sure there's enough capacity for innovation?" - participant workshop 6

#### Duration (assumption 2)

The workshops had durations of two or three hours. Most participants indicated they would've wanted a whole day for the workshop, to have anyway. The workshop advocates for a mindset

"We should've done this in the morning, so we would

participant workshop 2

workshop is desired. The workshop's message "You set the right expectations" - participant is to maximise learning from failure within the to split groups exceeding 6 participants, making it available time. The desire for a longer workshop difficult to monitor both creative processes. This might be an expression of not embracing an open was manageable for more experienced groups: However, some participants expected to learn result, as acknowledged by one participant:

> "The time pressure helps prevent overthinking" - do." - participant workshop 4 participant workshop 3

This suggests that I need to better communicate hindered their learning about failure: the goal of maximising learning within the time available.

Nevertheless, two sessions might be desirable time for an experiment and embed their learnings. shift, which can only be embedded through. An ideal group size is a maximum of six per repetition.

have had the afternoon to do the experiments." - "I wish I had more time to make it my own" participant workshop 5

#### Group size (assumption 3)

The workshops had 8 participants on average. I had

"You offered us space to do whatever we wanted to

# However, less experienced groups found this

"I wished you'd explained more deeply why something we did was good or not" - participant workshop 3

facilitator, so groups don't need to be split.

### MUST-HAVE 1: EMBRACE UNCERTAINTY

"What I learned from this workshop is to carry less historical baggage" - participant workshop 2

"I learned that it's impossible to know everything in advance" - participant workshop 4

"Innovation without a goal feels nice" participant workshop 5

However, embracing uncertainty was feasible only to a certain extent. In a large organisation like NS, balancing uncertainty with structured work is necessary.

"We do have a plan to follow; how do we manage these expectations?" - participant workshop 4

#### People are willing to let go of their first idea (assumptions 5 and 6)

The first workshop goal is to release expectations and embrace the unknown. The milkshake problem and the devil's advocate helped with creating this open mindset.



Figure 51 Embracing uncertainty (1) in failure model

"There are expectations; how do you handle those? At some point, we'll have to go on to the next phase" - participant workshop 3

Clarifying the difference between regular and innovation projects helped eliminate confusion. In workshops 5 and 6, I experimented with an additional reflection moment to identify areas where failure is undesirable.

#### **MUST-HAVE 2: REGULAR VS. INNOVATION**

#### Convinces the value of failure in innovation (assumptions 8-11)

The second key point explains the difference between regular and innovation projects and why failure is desirable in innovation, but not in regular projects.

Participants found the examples helpful in understanding the value of failure in innovation. This point scored a 6.4 on a 7-point Likert scale (n = 48, sd = 0.8).

"I looked at that origami crane and realised, maybe we should not set the bar that high for ourselves.. participant workshop 2

"The difference is clear to me now, innovation is no a concrete end result. I didn't think about it like that - participant workshop 6

However, the workshop did not necessarily feeling of failure was not as explicit. Participants change participants's views on failure. This scored indicated that they struggled to connect failure to However, to make this connection more explicit, a 4.3 on a 7-point Likert scale (n = 48, sd = 1.9). This the specific activities.



Figure 52 Regular vs. innovation (2) in failure model

is partly explained by qualitative research during the problem definition phase, which revealed that people understand the value of failure but don't know how to apply it. The large variation (sd = 1.9) shows that this preknowledge was different for many participants.

"If I look back at what we did, I'm wondering, where did we actually fail?" - participant workshop 6

"I missed a clear definition of failure" - participant workshop 4

This might be a sign that participants learned what Another reason for this low score might be that the I wanted them to learn: not see trying as failing.

> I added more reflection moments where we related the activities back to the failure model in workshops 5 and 6.



The third must-have evolved around creating a positive and energetic atmosphere so people are encouraged to experiment.

If elt that the energy rose throughout the workshop. The examples, energizers, and balance between sitting and standing helped with that. People indicated that theory and interaction were wellbalanced. This point scored a 6.0 on a 7-point Likert scale (n = 48, sd = 0.7).

"Idea X already exists... [group laughs] I don't want to burn it down, maybe there's something in it we "No pain, no gain; just try it out!" - participant could use?" - participant workshop 2 workshop 5

## MUST-HAVE 3: ENCOURAGE LEARNING

#### People enjoy the workshop (assumption 7)

#### "I wasn't bored for a second" - participant wworkshop 1

Trains a positive mindset (assumptions 12-14) Throughout the workshop, I observed that participants started using positive language and encouraged their colleagues to do the same.



Figure 53 Encouraging trying (3) in failure model

adopted a positive mindset are:

"I want to try out multiple options before something is set in stone" - participant workshop 5

"I learned to think of ideas that bring you further" participant workshop 4

Other guotes that illustrate how participants These findings show the importance of having examples and energizers and balancing theory and practice.

#### FINDINGS

# SHOULD-HAVE: SAFE SPACE

For failure embracement, people need to be **Gives confidence in failure (assumption 23)** vulnerable, and therefore creating a safe space I noticed participants's confidence grew is essential.

Creates a safe space (assumptions 15 and 16) Participants indicated that the environment felt safe. It scored relatively high: 6.6 on a 7-point Likert scale (n = 48, sd = 0.7). Unexpectedly, asking consent for using their data beforehand, participant workshop 3 contributed to this. Even though this is something that would not be officially necessary when implementing this workshop, it means that making participant workshop 6 some agreements beforehand might help.

stays within these rooms." – participant workshop 1 they are right now, create a safe space.

throughout the workshops.

"I liked being brave together" - participant workshop

learned to purposefully ask stupid questions." -

our relaxed attitude gave me confidence" -

This means that it is important to have an open "The agreement that the content of what we discuss discussion at the start and that the elements, as



This thesis intends to contribute to a cultural shift where failure is embraced in the NS. Therefore, it's good to evaluate the impact of the workshop.

"It caused involvement of the group" - participant workshop 2

"It made the workshop useful and tanaible" participant workshop 1

#### **COULD-HAVE: CULTURAL CHANGE**

#### Involvement with challenge (assumption 4)

In the workshop, I intentionally work with cases offered by the participants themselves. The involvement with the case differed per workshop depending on the intention of the contact person, but sometimes the workshop was used as a catalyst for an ongoing project.

Overall, people indicated the case helped them learn about failure in innovation. Since it was their own case, they knew a lot about the topic, and they were challenged to think a step further. The value of involving a challenge scored 5.6 on a 7-point Likert scale (n = 28, sd = 1.2).

However, I noticed that the case was sometimes too technical, and I found it difficult to understand process well. In workshops 4, 5, and 6, I chose the case in collaboration with the contact person.

Nonetheless, when people were deeply involved the concept will be realised this year. in the challenge, learning about failure flexibility became more of an implicit outcome. The risk here is that the workshop does not have enough competitive advantage compared to the normal innovation workshop that the Innovatie Platform offers.

This means that choosing a relevant case works well but should be decided in collaboration with the contact person. Besides, it's important to explicitly refer back to how the case contributes to learning about failure flexibility.

#### Changes way of working (assumption 17-22)

In the post-workshop interviews with the contact persons, I gained an understanding of the a week. workshop's impact.

Following one workshop, I received a summary of the session along with a plan for continuing the content. That made it hard for me to guide the forward. In another workshop, participants gained such valuable insights that their managers assigned them the task of developing a vision for their department. Following another workshop,

The PO created a presentation, and now it's on the  $f_{m{m}}$ packlog" - contact person workshop 3

"Now it's easier to talk about these things and try things out" - contact person workshop 2

"We won't realise the solution, but it did initiate a hindset shift where everyone thinks in possibilities and visions" - contact person workshop 1

The workshop did catalyse some projects and initiate a mindset shift. However, to embed the learnings in the way of working even more, it would be valuable to add another session after

#### IMPLEMENTATION RECOMMENDATIONS



Figure 54 Innovation funnel of the Innovatie Platform

#### INSPIRE

Value proposition: As a tool to explain the mindset of innovation in an interactive way.

Target group: Scrum masters who want their team to loosen up and be more flexible. For the workshop to be truly inspiring, participants should ideally be novices in the field of innovation.

#### CONVINCE

Value proposition: As a means to teach the top management the language of innovation, so they understand why innovation comes with uncertainty and failure should be embraced.

Target group: Employees in decisionmaking positions, mixed with operational employees, so the value of innovation is being discussed from different perspectives.

#### ALIGN

Value proposition: As a way to align expectations before starting a project.

Target group: Teams participating in an innovation project who have the flexibility in their daily work to incorporate innovative practices, allowing them to adapt their behaviour to foster more innovation.

#### INSPIRE

In the first application, it would be valuable to In a hierarchical organisation like NS, employees The change we want to embed when aligning look for 'failure ambassadors' in the organisation. seek approval from top management before they expectations should be sustained throughout These innovation enthusiasts are eager to help fully commit. When aiming for an innovation culture the whole project. Therefore, an extra debrief make room for failure embracement. During my where failure is embraced, top management's could be of great value. This could take several project, the enthusiastic attitude helped me get understanding of failure flexibility is essential shapes. It could be an extra session a week later together the right people and make sure time (Micheli et al., (2018); Kim & Wilemon (2002)). By so that the learnings have sunk in and the ideas would be embedded for the workshop. This participating in this workshop, top management have been informally evaluated. A second option aligns with recommendations by Kim & Wilemon will not only acknowledge the importance of could be to distribute a poster with the learnings, (2002) and Micheli et al. (2018), who argue that the innovation but also feel how uncertainty and potentially made by the participants themselves, drive and commitment of innovation enthusiasts failure should be embraced. In addition, I would which can be hung next to the coffee machine as are necessary to change something in large recommend mixing the group with employees a reminder. who are closer to the operation. These people organisations. tend to see the urgency of innovation more, which will be spread if they interactively co-create a solution with the top management.

To sustain a change towards a failure flexible innovation culture, the Innovatie Platform the workshop. Three value propositions were group and stage of the innovation funnel, document I handed to my team can be found in appendix H.

#### Ambassadors

#### CONVINCE

#### Top management

#### ALIGN

#### Extra debrief

\_\_\_\_\_

#### How did I embrace failure?

**1.** By asking my team as observers and having them critically look at the workshop to evaluate to what extent the workshop fit the goal. This resulted in more (critical) feedback and therefore challenged my resilience.

2. By conducting a session with an innovationexperienced group, which resulted in a less successful workshop. This workshop felt like a failure compared to the other groups, but it resulted in the most valuable learnings about, for example, the target group and connecting failure more explicitly to the interactive assignments.

3. By doing a post-workshop interview to compare my perspective with my contact person's perspective. The goal was to evaluate the impact of the workshop, even though I was aware of the difficulty of behaviour change. However, this conversation offered me insight into additional barriers.

# KEY TAKE-AWAYS

- The workshop demonstrates how to embrace uncertainty but leaves challenges for integrating this approach into the organisation's governance.
- Connecting the workshop's activities with failure wasn't always as explicit, but adding more reflection moments helps.
- The workshop conveys a positive and energetic atmosphere due to the energizers and examples.
- The workshop creates a safe environment.
- The workshop initiates a mindset change, but the learnings could be more effectively embedded with an additional session scheduled for the following week.
- The workshop could be implemented as a means to 1) inspire team members, 2) convince top management, and 3) align expectations at the start of an innovation project.

# Fail fast, fail fearlessly - Ed Catmull





# **Final notes**

Let's zoom out and see what value the workshop could bring to bigger organisations like NS. As previously mentioned, just like other large organisations, NS is still affected by COVID-19 and, coupled with inflation, is experiencing financial challenges. That makes taking time to embrace failure and deal with uncertainty difficult, as the focus lies on short-term plans. However, if we want sustainable solutions, we need an open-minded innovation process (Prud'Homme van Reine, 2017). The designed workshop contains several building blocks that are necessary to create a failure-flexible innovation culture.

#### **BUILDING TRUST**

build a safe environment and create trust we need creative solutions that approach among teams. If we want more failure flexibility problems from a different perspective (Tschimmel, Carlgren & BenMahmoud-Jouini (2022) argue innovation culture that embraces failure. for the importance of a healthy team climate when implementing design thinking. Therefore, innovation cultures benefit from this workshop by building trust with each other.

#### THINKING OUTSIDE THE BOX

The activities and energizers in the workshop If we want to solve problems in large organisations, in innovation culture, a safe environment is 2012). The activities during the workshop broke essential. Trust is needed to be vulnerable people's routines and challenged participants to and dare to fail in the uncertain process of think differently. That's why thinking outside the innovation (Cannon & Edmondson, 2005). Also, box is an important building block towards an

These four elements can be used as building blocks to transform into an innovation culture that's flexible towards failure. To sustain this change, the Innovatie Platform should continue incorporating elements of the workshop. Three value propositions were formulated, each targeting a different target group and stage of the innovation funnel, as outlined on the next page. The transfer document I handed to my team can be found in appendix H.

#### **CHANGING MINDSET**

of merely hearing about it.

#### **GUARDED TIME AND SPACE TO FAIL**

In my research, I found that most NS employees Embracing failure is desired exclusively in acknowledge the importance of embracing failure innovation projects, not in regular projects. in innovation, but don't know how to do this. There This distinction can be challenging to make. is a strong need to learn more about this, which I Therefore, in innovation projects, it is crucial to derive from the many requests I received to host a have a designated individual maintain a safe workshop. This workshop offers an answer to this environment, ensuring that team members feel need and lets people experience failure instead secure in learning from failure (Kim & Wilemon, 2002; Cannon & Edmondson, 2005). This workshop offers that guarded space and time to fail.

#### THEORETICAL CONTRIBUTIONS

The importance of failure has been researched While the study provided valuable insights, it How to deal with deadlines? before. Kapur (2008) stressed the importance of was limited in scale. The case study focused Even though the workshop opened up employees' failing to improve learning outcomes for students, on a specific segment of NS and may not fully ways of thinking, deadlines still formed a barrier while Cannon & Edmondson (2005) and Iske represent the broader organisational context to innovation. Restrictive planning with deadlines (2018) emphasise the importance of creating a of approximately 20.000 employees. While was blocking employees from feeling the climate where small failures are learned from the findings could be useful for other large freedom to take time to innovate outside of the in organizations. This thesis acknowledges this organisations, they are derived from a focused workshop. Concepts like dedicating an x% of time importance and explores how design thinking case study within NS, and thus, generalisations to innovation have been tried, but more research might help make these recommendations are not validated. concrete.

design and innovation cultures. This thesis which the second recommendation is particularly. A significant challenge in moving ideas beyond recognises the tensions and characteristics of targeted at top managers. The workshop has the workshop stage was the lack of clarity fostering an innovation culture as defined by been conducted with a strategic team but has not around who would take responsibility for various Carlgren & BenMahmoud-Jouini (2022), Kim & yet included employees in high-level decision- components of the innovation. This uncertainty Wilemon (2002), Icekson et al. (2014), Prud'Homme making positions. Consequently, this application led to hesitation among employees, as they van Reine (2017), and Micheli et al. (2018). These remains unvalidated and requires further did not want to interfere with each other's work, tensions are rebuilt into eight aspects of an exploration. innovation culture, as found in the theoretical framework on page 12. This study concretely Another limitation of the study is its highly iterative responsibilities in the organisation. builds on these characteristics through the design and gualitative nature. The research heavily relied and implementation plan of a workshop.

failure flexibility have been designed by Price & data triangulation was practiced, involving failure is typically not tolerated in regular projects. and defined ten ways for students to be more study's thick description, thereby restricting its projects. By making this distinction more explicit, resilient while designing. Additionally, Persaud & transferability. Flipsen (2023) have investigated how embracing failure can encourage learning in an educational context. This thesis contributes to these studies by exploring their findings in an organisational context.

#### LIMITATIONS

#### The application recommendations suggest using Other studies have researched organisational the workshop to inspire, convince, and align, of **Who is involved in the experiments**?

on the subjective experiences of the researcher In which project do we innovate? for data collection, making replication challenging Participants struggled to apply the workshop

#### FUTURE WORK

could dive into why this hasn't been successful yet.

which in turn discouraged experimentation. Future research could explore a way to clarify

Previous workshops focusing on resilience and and potentially introducing biases. Although learnings to their daily work, largely because van der Bijl-Brouwer (2023) and Persaud & Flipsen more researchers could have further minimised. This highlights an intriguing area for further (2023). Price and van der Bijl-Brouwer (2023) have these biases. Additionally, the lack of detailed investigation: how organisations distinguish investigated the concept of designer resilience disclosure about the workshop content limits the between regular projects and innovation organisations could foster greater acceptance of failure in officially designated innovation projects, encouraging experimentation and learning.

#### CONCLUSION

This thesis explored the concept of failure flexibility within the innovation culture of NS through an exploratory case study. The project underscored the significance of adopting a flexible attitude towards failure as an integral component of a healthy innovation environment. The designed workshop was instrumental in helping participants understand and embrace failure, fostering a safe space for experimentation and learning. This initiative demonstrated a valuable contribution to building trust, encouraging creative thinking, and transforming mindsets within the organisation.

The workshop's success suggests that NS can leverage these insights to inspire team members, align expectations for ongoing projects, and potentially influence top management's approach to innovation. This application can support NS in navigating the uncertainty innovation comes with, where embracing failure is crucial.

However, while the workshop was well-received and provided a practical framework for understanding failure to initiate a mindset shift, several challenges remain. The transition from workshop learnings to daily practice has proven difficult, and failure could be better connected to the case. This area requires further exploration to enhance the integration of failure flexibility into NS's broader organisational culture.

In conclusion, this project offers a promising building block for fostering an innovation culture at NS where failure is not only accepted but seen as a valuable step towards growth. Future work should focus on refining strategies to overcome the identified barriers, including clarifying project responsibilities, managing deadlines more flexibly, and distinguishing between regular and innovation projects. Such efforts will strengthen the academic foundation of this research and enhance its practical applications within and beyond NS.

#### PERSONAL REFLECTION

'Practice what you preach', is what I told myself throughout the project. The subject of this thesis allowed me to critically reflect on my own design process: do I embrace failure enough to feel like I'm encouraging others?

At the start of this project, I defined three learning goals for myself. 1) learn how to convince; 2) experiment with confidence; and 3) integrate incubation time after feedback. Throughout the project, I realised each had different underlying goals, which I'll reflect on in this section.

#### **1**. Building a network

I learned the importance of involving my team in the project from the start to be convincing. To prevent the 'not invented here syndrome', people need to feel and understand the solution from within, and therefore they need to be involved in the process. Merely telling or sharing a report is not enough. I involved my team from day one in team sessions and deliberately planned conversations with NS employees who showed interest in the topic. This resulted in more leads to people, literature, or existing initiatives. To be convincing, it is important to build a network and to suit that group. I realised they might not fit involve people in the process.

#### 2. Experiment with confidence

The content of my project was a constant reminder to challenge myself to learn from failure. When I approached deadlines, my fear of failure rose, which made me less open to taking risks, learning, and seeing overviews. The most difficult part was handing in my preliminary reports to my supervisors because I knew it was not yet the result I aimed for. I challenged myself not to make

Going through this barrier helped me be confident enough to trust my process. Over the weeks, my attitude became more and more relaxed, and I felt motivated to just keep going and not be afraid the outcome would not be 'useful'.

#### 3. Believing in the process

Relating to the previous learning outcome, I learned to believe in myself and my process. My This project was the start of my mission to goal was to reflect on the feedback and not adjust my course too quickly. Having conducted many experiments and gathered extensive feedback, I learned that it's not possible to follow every piece of advice blindly. Instead, it's crucial to look at the bigger picture and choose what is best for the project. Rather than adjusting the workshop format immediately after an unsuccessful session into my target audience. I learned to balance the expectations of others with my belief in the process.

#### What does my future hold?

I could not have wished for a project that fit me better than this one. I could apply my anthropological skills, I had the freedom to experiment with design methods; and I gained experience in a large organisation with much influence on society. This all fueled inspiration for

it perfect and to hand it in with the aim of learning. my next step. I noticed that giving the workshops was something that fit me very well. I felt comfortable and energised after each of them. I want to keep on teaching organisations about design and innovation. At the same time, I want to keep learning from the designers around me in a context where innovation is a given and does not need to be encouraged.

> encourage failure embracement, and I can't wait to continue this journey.

Many people have helped me learn throughout this project, and I would like to highlight a few of them. I would like to thank Rebecca Price for helping me zoom out, seeing the bigger picture so I could navigate the big organisation of NS, and giving me so much confidence. I would like to thank Tobias Hebbink for challenging me to be critical of how I embraced failure in my own design process and helping me find tools to get an overview when I felt stuck. I would like to thank Rembert Sierksma for involving me in the team from day one and giving me the freedom and trust to experiment while thinking along with me. I would like to thank Roxanne op't Land for taking charge of implementing the workshop. Furthermore, I would like to thank the rest of my team, Stijn van den Brand, Rainish Lalai, Germo van de Hoek, Joris Mens, and Bart Hoornstra, for participating in team sessions, inviting me to meetings, events, and activities, and always being eager to discuss my project. Finally, I'd like to thank all other NS colleagues who were involved in my project in interviews, workshops, or conversations.

#### REFERENCES

Aizen, I., & Madden, T. J. (1986), Prediction of Goal-Directed Behavior: Attitudes, Intentions, and Overcoming the Unseen Forces That Stand in Perceived Behavioral Control, In JOURNAL OF EXPERIMENTAL SOCIAL PSYCHOLOGY (Vol. 22). Baha, E., Koch, M., Sturkenboom, N., Price, R., & Snelders, D. (2020, September 10). Why am I Studying Design? https://doi.org/10.21606/ drs.2020.386

Brown, B. (2016). Brené Brown Encourages Educators to Normalize the Discomfort of Learning and Reframe Failure as Learning. About Campus: Enriching the Student Learning Experience, 20(6), 3-7. https://doi.org/10.1002/ abc.21224

Buchenau, M., & Suri, J. F. (2000). Experience prototyping. Proceedings of the 3rd Conference on Designing Interactive Systems: Processes, Practices, Methods, and Techniques, 424–433. https://doi.org/10.1145/347642.347802

Calabretta, G., & Gemser, G. (2017). Building Blocks for Effective Strategic Design. Journal of Design, Business & Society, 3(2), 107–122.

Cannon, M. D., & Edmondson, A. C. (2005). Failing to learn and learning to fail (intelligently) How great organizations put failure to work to innovate and improve. Long Range Planning, 38(3 SPEC. ISS.), 299–319. https://doi. org/10.1016/j.lrp.2005.04.005

Carlgren, L., & BenMahmoud-Jouini, S. (2022). When cultures collide: What can we learn from frictions in the implementation of design thinking? Journal of Product Innovation Management, 39(1), 44–65. https://doi. **92** org/10.1111/jpim.12603

Catmull, E., & Wallace, A. (2014). Creativity Inc. the Way of True Inspiration. Random House LCC US

Cialdini, R. P. (2007). Influence, the Psychology of Persuasion.

Clark T, Foster L, Sloan L, & Bryman A. (2021). Bryman's social research methods (6th ed.). Oxford Univsersity Press.

Cole, S. (2014). "Fail again. Fail better." Failure in the Creative Process. ATHENS JOURNAL OF HUMANITIES & ARTS, 1(3), 183–192. https://doi. org/10.30958/ajha.1-3-1

Davis, G. (1999). Barriers to Creativity and Creative Attitudes. Encyclopedia of Creativity, 1.

Dobni, C. B. (2008). Measuring innovation culture in organizations: The development of a generalized innovation culture construct using exploratory factor analysis. European Journal of Innovation Management, 11(4), 539–559. https:// doi.org/10.1108/14601060810911156

Dorst, K. (2010). The Nature of Design Thinking. Design Thinking Research Symposium, 8.

Edmondson, A. (1999). Psychological Safety and Learning Behavior in Work Teams. Cornell University.

Grudin, J., & Pruitt, J. (2002), Personas, Participatory Design and Product Development: An Infrastructure for Engagement. Personas, Participatory Design and Product Development: An Infrastructure for Engagement.

Heijne, K., & van der Meer, H. (2019). Road Map for Creative Problem Solving Techniques. Boom Uitgevers Amsterdam.

Hernández, R. J., Cooper, R., Tether, B., & Murphy, E. (2018). Design, the Language of Innovation: A Review of the Design Studies Literature. In She Ji (Vol. 4, Issue 3, pp. 249–274). Tongji University Press. https://doi.org/10.1016/j.sheji.2018.06.001

Herzog, P., & Leker, J. (2010). Open and closed innovation-different innovation cultures for different strategies. In Int. J. Technology Management (Vol. 52).

Houser-Marko, L., & Sheldon, K. M. (2008). Eyes on the Prize or Nose to the Grindstone? The Effects of Level of Goal Evaluation on Mood and Motivation. Personality and Social Psychology Bulletin, 34(11), 1556–1569. https:// doi.org/10.1177/0146167208322618

Icekson, T., Roskes, M., & Moran, S. (2014). Effects of optimism on creativity under approach and avoidance motivation. Frontiers in Human Neuroscience, 8(1 FEB). https://doi.org/10.3389/ fnhum.2014.00105

Ingold, T. (2014). That's enough about ethnography! HAU: Journal of Ethnographic Theory, 4(1), 383-395. https://doi.org/10.14318/ hau4.1.021

Iske, P. L. (2018). Instituut voor briljante mislukkingen. Business Contact.

Kapur, M. (2008). Productive failure. Cognition

and Instruction, 26(3), 379–424. https://doi. org/10.1080/07370000802212669

Kelley, T., & Kelly, D. (2014). Creative Confidence: Unleashing the creative potential within us all. William Collins.

Kim, J., & Wilemon, D. (2002). Focusing the fuzzy front-end in new product development. R and D Management, 32(4), 269–279. https://doi. org/10.1111/1467-9310.00259

Klitsie, J. B., Price, R. A., & Santema, S. (2020). 'Not Invented Here': Organizational Misalignment as a Barrier to Innovation Implementation in Service Organizations. ServDes.2020.

Liedtka, J. (2015). Perspective: Linking Design Thinking with Innovation Outcomes through Cognitive Bias Reduction. In Journal of Product Innovation Management (Vol. 32, Issue 6, pp. 925–938). https://doi.org/10.1111/jpim.12163

Liedtka, J., & Friedel, R. (2008). Possibility Thinking.

Micheli, P., Perks, H., & Beverland, M. B. (2018). Elevating Design in the Organization. Journal of Product Innovation Management, 35(4), 629–651. https://doi.org/10.1111/jpim.12434 Nederlandes Spoorwegen. (2023). NS Jaarverslag 2023.

Nederlandse Spoorwegen. (n.d.). Verantwoordelijkheden. Https://Www. Ns.Nl/over-Ns/de-Spoorsector/ Verantwoordelijkheden.Html.

Persaud, S., & Flipsen, B. (2023), Productive fialure in pedagogy in engineering mechanics. 25th International Conference on Engineering and Product Design Education.

Persaud, S., Flipsen, B., & Thomassen, E. (2022). PRODUCTIVE FAILURE IN ACTION. International Conference on Engineering and Product Design Education.

Price, R. A. (2023). A review of resilience in higher education: toward the emerging concept of designer resilience. Studies in Higher Education, 48(1), 83-99. https://doi.org/10.1080/03075079.2 022.2112027

Price, R., & Van Der Bijl-Brouwer, M. (2023). THE **RESILIENT DESIGNER'S HANDBOOK.** 

Price, R., Wrigley, C., & Matthews, J. (2021). Action researcher to design innovation catalyst: Building design capability from within. Action Research, 19(2), 318–337. https://doi. org/10.1177/1476750318781221

Prud'homme van Reine, P. (2017). The culture of design thinking for innovation. Journal of Innovation Management, 5(2), 56–80. https://doi. org/10.24840/2183-0606\_005.002\_0006

Quint, E., Gemser, G., & Calabretta, G. (n.d.). Design Leadership Ignited. https://www.dmi.org/page/ DesignLeadershipIgnited?&hhsearchterms=

Sanders, L., & Stappers, P. J. (2013). Convivial Toolbox: Generative Research for the Front End of Design. Laurence King Publishing.

Schön, D. A. (1988). Designing: Rules, types and worlds. Design Studies, 9(3), 181–190. https://doi. org/10.1016/0142-694X(88)90047-6

Svensson, N. (2015). Subjective experiences of creative work after negative feedback. Thinking Skills and Creativity, 15, 26–36. https://doi. org/10.1016/j.tsc.2014.11.002

Tahirsylaj, A. S. (2012). Stimulating creativity and innovation through Intelligent Fast Failure. Thinking Skills and Creativity, 7(3), 265–270. https://doi.org/10.1016/j.tsc.2012.05.005 Tiggelaar, B. (2018). De Ladder.

Tschimmel, K. (2012). Design Thinking as an effective Toolkit for Innovation.

van den Bergh, M., van der Bijl-Brouwer, M., & Price, R. (2022, June 16). The desire to excel in design education: Have we pushed it too far? https://doi.org/10.21606/drs.2022.917 van der Drift, R. (2017). Waarom is "foutenmaakmoed" zo moeilijk? TvOO, 4.

Visser, F. S., Stappers, P. J., van der Lugt, R., & Sanders, E. B.-N. (2005). Contextmapping: experiences from practice. CoDesign, 1(2), 119-149. https://doi.org/10.1080/15710880500135987

#### **APPENDIX** \_\_\_\_\_

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#### Expert interviews

Doel: beeld schetsen van hoe falen en experimenterren in innovatie een rol speelt in de NS

- Introductie
  - Ik wat over mezelf en het project vertellen
    - Opnemen?
    - Anoniem
  - Kun je wat over jezelf vertellen
- Innovatie
  - Wat is innovatie?
- Innovatiecultuur
  - Hoe zou jij de innovatiecultuur van de NS omschrijven?
- Definitie falen/experimenten/risico nemen
  - Wat versta jij onder falen?
  - Hoe zie jij falen terug in de afdeling?
  - Hoe gaan mensen daarmee om?
- Belang
  - Is falen/risico nemen/experimenteren belangrijk?
    - Waar is het extra belangrijk?
  - Is er ruimte om te falen?
  - Wat is de invloed van falen?
- Redenen (geen) angst voor falen
  - Is falen een bespreekbaar onderwerp?
  - Zijn mensen bang om te falen?
  - Waarom niet?
  - Waarom wel?
    - Resultaatgerichtheid
    - Risico vermijden
    - Verwachtingen managen
    - Prestatiedruk
- Bestaande oplossingen
  - Zijn er al initiatieven die dit aanmoedigen?
    - Waarom werkt dit wel/niet?
  - Wat zou helpen?
- Afsluiting
  - Zijn er verder nog dingen die je te binnen schieten?
  - Wie zou ik hierna moeten spreken?

Voorbereiding interview

innovatiecultuur

#### Hallo!

Ik ben Jasmijn, momenteel onderzoek ik vanuit het innovatieplatform de innovatiecultuur bij de NS voor mijn afstudeerproject vanuit de master Strategic Product Design aan de TU Delft.

Ter voorbereiding van het interview wil ik je vragen om een aantal pagina's in te vullen. Op deze manier is het makkelijker om je ervaringen te bespreken tijdens het gesprek

· Je bent vrij om te kiezen hoe lang je wil besteden aan het invullen, dit kan 10 minuten zijn, maar langer of korter is ook goed. Als je je niet comfortabel of geschikt voett bij het beantwoorden van een of meerdere paginas, hoef je deze uiteraard niet in te

• De opdrachten zijn bewust een beetje onduidelijk, voel je daarom vrij om de opdrachten in te vullen op een manier die bij jou pas. Er zijn geen 'goede' of 'foute' antwoorden, alleen maar 'jouw' antwoorden.

Je mag tekst gebruiken om de antwoorden te geven, maar ik moedig je ook zeker aan om het visueel te maken. Mocht je niet willen tekenen, knip dan de stickers op de pagina's uit of gebruik ze als inspiratie voor je antwoorden. Vergeet niet om de ingevulde pagina's mee te nemen naar het interview. Dan kunnen we er samen naar kijken.

De antwoorden worden vertaald naar anonieme inzichten die ik zal gebruiken voor mijn afstudeerproject, welke worden gebruikt om de innovatiecultuur van de NS te verbeteren en om de academische kennis rondom dit onderwerp te verbreden.

Daamaast wil ik voor de volledigheid nog even de mogelijke risico's met je delen. Ondanks dat ik mijn uiterste best doe om het te voorkomen en de resultaten volledig anoniem zijn, is er altijd risico op een datalek wat betekent dat de antwoorden onbedoeld voor verkeerde doeleinden gebruikt kunnen worden. Ook probeer ik je op je gemak te laten voelen, maar toch kan praten/schrijven over dit onderwerp vervelende emoties oproepen. Daarom is het belangrijk om te weten dat de antwoorden die je geeft volledig anoniem zijn, zowel van het interview als het ingevulde boekje. Dat betekent dat de antwoorden niet naar jou terug te herleiden zijn Daarnaast heb je altijd de vrijheid niet meer mee te doen met het interview, ook als je het boekje al ingevuld hebt.

Als je nog vragen hebt over het gesprek of het boekje, neem dan contact op met mij via jasmijn.verhoef@ns.nl. Alvast bedankt!

# Innovatie is voor mij...

Teken hieronder wat innovatie voor jou betekent. Probeer het zo visueel mogelijk te maken en gebruik eventueel de icoontjes aan de linkerkant.

#### Teken een (recent) innovatieproces

Teken een innovatieproces waar je nu middenin zit, als dat niet kan is een recent innovatieproces ook goed. Probeer op de meest simpele manier over te brengen wat voor waarde dit innovatieproces geeft, voor wie dan ook. Ook hier kan je de icoontjes aebruiken.

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Begin met het tekenen van belangrijke spelers en structuren. Teken lijnen om te laten zien hoe deze zich tot elkaar verhouden. Zowel abstracte als concrete begrippen zijn welkom



#### Deze activiteiten van een innovatietraject zitten in mijn comfortzone...

Overige vragen/opmerkingen...

Bedankt voor het invullen! En tot bij het interview

vullen.

De antwoorden worden vertaald naar anonieme inzichten die ik zal gebruiken voor mijn afstudeerproject, welke worden gebruikt om de innovatiecultuur van de NS te verbeteren en om de academische kennis rondom dit onderwerp te verbreden.

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Als je nog vragen hebt over het gesprek of het boekje, neem dan contact op met mij via jasmijn.verhoef@ns.nl. Alvast bedankt!

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# Voorbereiding interview innovatiecultuur

Ik ben Jasmijn, momenteel onderzoek ik vanuit het innovatieplatform de innovatiecultuur bij de NS voor mijn afstudeerproject vanuit de master Strategic Product Design aan de TU Delft.

Ter voorbereiding van het interview wil ik je vragen om een aantal pagina's in te vullen. Op deze manier is het makkelijker om je ervaringen te bespreken tijdens het gesprek.

Je bent vrij om te kiezen hoe lang je wil besteden aan het invullen, dit kan 10 minuten zijn, maar langer of korter is ook goed.
Als je je niet comfortabel of geschikt voelt bij het beantwoorden van een of meerdere pagina's, hoef je deze uiteraard niet in te

· De opdrachten zijn bewust een beetje onduidelijk, voel je daarom vrij om de opdrachten in te vullen op een manier die bij jou pas. Er zijn geen 'goede' of 'foute' antwoorden, alleen maar 'jouw' antwoorden.

· Je mag tekst gebruiken om de antwoorden te geven, maar ik moedig je ook zeker aan om het visueel te maken. Mocht je niet willen Vergeet niet om de stickers op de pagina's uit of gebruik ze als inspiratie voor je antwoorden.
 Vergeet niet om de ingevulde pagina's mee te nemen naar het interview. Dan kunnen we er samen naar kijken.



#### Experimenteren in innovatie is voor mij...

Teken hieronder wat innovatie voor jou betekent. Probeer het zo visueel mogelijk te maken en gebruik eventueel de icoontjes aan

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#### **APPENDIX C: CONTEXT MAPPING BOOKLET VERSION 2**

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Bij welke activiteiten voel je je op je gemak? Zijn er ook activiteiten die tegen de rand zitten? Of er net buiten?





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Overige vragen/opmerkingen...

Bedankt voor het invullen! En tot bij het interview

#### **APPENDIX D: NEWSLETTER TEXTS**



#### Even voorstellen: Jasmijn Verhoef

Bron: Innovatieplatform

Ik ben Jasmijn Verhoef en zit in de afrondende fase van mijn master Strategic Product Design aan de TU Delft. Hiervoor heb ik een bachelor Industrial Design aan de TU/e en een minor Anthropology aan de VU gedaan. In mijn vrije tijd houd ik ervan om te haken, aquarellen, markten af te struinen, te wandelen in de natuur of een rondje singel hard te lopen!

#### Wat ga je bij NS doen?

In een designproces is regelmatig falen heel waardevol om te kunnen leren en in een volgende stap creatieve oplossingen te bedenken. Het maken van fouten is echter niet iets wat we gewend zijn om te (mogen) doen. Bij NS ga ik de innovatiecultuur onderzoeken en kijken hoe we falen kunnen aanmoedigen in een omgeving waar het waardevol kan zijn.

#### Wat hoop je na je stage te hebben bereikt?

Het lijkt mij heel gaaf als falen als iets positiefs gezien kan worden binnen NS na mijn project. Ook hoop ik dat ik tijdens mijn stage veel heb kunnen uitproberen en (van fouten) heb kunnen leren! Verder heb ik de organisatie goed leren kennen en heb ik geleerd van hoe innovatieprojecten hier gaan.

5 march 2024 Introduction



#### Oproep: faalinitiatieven en faalervaringsdeskundigen aezocht

#### Bron: Jasmiin Verhoef, Innovatieplatform

Misschien hebben sommigen van jullie mijn introductie in de vorige nieuwsbrief gelezen of hebben jullie mij al in het echt gesproken. Zo niet; ik ben Jasmijn Verhoef en ben bij het Innovatieplatform bezig met mijn afstudeerproject waar ik onderzoek hoe we falen kunnen omarmen in de innovatiecultuur van NS.

Naar aanleiding daarvan heb ik twee oproepen:

- . Tijdens mijn onderzoek ben ik al wat initiatieven tegengekomen binnen NS die op dit onderwerp inspelen. Ik wil zo veel mogelijk van deze initiatieven in kaart brengen. Dus mocht je iets kennen wat met het onderwerp falen/risico nemen/experimenteren te maken heeft, aarzel dan niet om contact met me op te nemen
- 2. Ook ben ik heel benieuwd of er mensen zijn die een innovatietraject hebben ervaren dat anders ging dan verwacht. Ik noem dit 'faalervaringsdeskundigen', en dat kan uiteraard positief uitgepakt hebben. Dus sta je hiervoor open, aarzel niet om contact op te nemen.

Mocht ie het daarnaast interessant vinden om hierover te sparren, maar niet per se een antwoord hebben op mijn bovenste twee vragen, sta ik uiteraard altijd open voor een koffie om dit onderwerp te bespreken. Dus kom vooral langs bij het Innovatieplatform of plan wat in (Jasmijn.verhoef@ns.nl).

27 march 2024 Finding interviewees



#### Faalexpert worden?

Bron: Innovatieplatform

Je hoort het overal, 'zonder falen geen succes!' of 'zie falen als een kans om te groeien!' Maar hoe doe ie dit nou eigenlijk? Wanneer is falen waardevol en hoe pas je het toe in innovatie?

Wellicht heb je me in de vorige nieuwsbrieven al voorbij zien komen: ik ben Jasmijn en ben aan de slag bij het innovatieplatform om te onderzoeken hoe we falen meer kunnen omarmen in de innovatiecultuur vanuit mijn master aan de TU Delft.

In het kader van 'practice what you preach' wil ik binnenkort een experiment opzetten in de vorm van een workshop waarin we gaan oefenen met falen in innovatie. De opzet, data en duur worden later besloten, maar wel kan ik zeggen dat het een interactieve workshop wordt, waarin je op een leuke manier leert wat de waarde van falen kan zijn. Ook zorg ik dat je weggaat met concrete handvatten.

Wekt dit je nieuwsgierigheid, ken je iemand die dit interessant zou vinden of wilde je hier toevallig al met je team mee aan de slag gaan? Zet jezelf dan vrijblijvend op de interesselijst en dan houd ik je op de hoogte als de details duidelijk zijn.

"I didn't fail 1000 times. The light bulb was an invention with 1000 steps." -Thomas Edison

#### 30 april 2024 Recruiting participants



# **APPENDIX F: WORKSHOP SLIDES**

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# **APPENDIX F: WORKSHOP SLIDES**



# FINAL NOTES

# **APPENDIX F: WORKSHOP SLIDE**

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# **APPENDIX F: WORKSHOP SLIDES**











#### **APPENDIX F: WORKSHOP SLIDES**

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#### VERSION 1

**VERSION 2** 



#### Falend innoveren – overdracht

Dit overdrachtsdocument is bedoeld om zo goed mogelijk mee te geven hoe ik dingen aanpakte, maar dit blijft uiteraard in ontwikkeling. Voel je daarom vooral vrij om het anders te doen, dingen te veranderen, weg te laten of onderdelen eruit te pakken. Het belangrijkste is om het verhaal goed uit te leggen, en hoe je dat doet is voor iedereen anders en afhankelijk van de situatie.

Voorbereiden	p.2
Toepassing	р.
Lopende leads	p.
Handige grafisch design links	р.

#### Voorbereiden

- 1. Intake gesprek met contact persoon
  - a. Vraag hier het design thinking niveau van de groep uit
  - b. Overleg welke case jullie gaan behandelen tijdens de workshop
- 2. Materialen printen
  - a. Faalcontract: voor het speciale gevoel heb ik speciaal papier gekocht bij Swaak om ze op te printen, net wat anders dan ze gewend zijn 😊
  - b. Stickers: deze printte ik uit op stickervellen gekocht bij Lorjé en knipte ik daarna uit. Wel veel werk
  - c. Origami vellen: deze had ik nog thuis liggen, maar kan je halen bij Pipoos of door een A4 uit de printer te snijden
- 3. Workshop
  - a. Zie de comments bij de slides

#### b. Tijdsindeling

	Design criterion	Time	Activity	Туре	Where?	Materials
Introduction		15 min	Discuss failure and expectations with group	Discussion	Table	
			Share goal	Discussion	Table	
			Share time schedule	Discussion	Table	
			Blind introduction	Energizer	Table	Pen per person     Post-it per person
Experiment	2. regular vs. Innovation	15 min		Group work	Two seperate rooms	2 origami papers     origami instructions     example origami crane
Value of failure	2. regular vs. innovation	15 min	Negative vs. positive failure	Theory	Table	
			Fuzzy front-end	Theory	Table	
Problem definition	1. Embrace uncertainty	20 min	Mac Donalds milkshake	Example	Table	
			Problem finding	Group work	Whiteboard	
klea generation	3. Encourage trying	25 min	Top of mind ideas	Group work	Table	
			3 waves of creativity	Theory	Table	
			Criminal round	Group work	Whiteboard	<ul> <li>Drawn jail on whiteboard</li> </ul>
			Invention of post-it	Example	Table	
			Reframing useless inventions	Energizer	Table	
			Rebuild ideas	Group work	Whiteboard	
Break		15 min				
Reflection	2. Regular vs. innovation	5 min	Where don't we want to fail?	Individual	Table	<ul> <li>Failure contract per person</li> </ul>
Experiment	1. Embrace uncertainty	40 min	Devils debate	Group work	Whiteboard	<ul> <li>Blue and red post-its</li> </ul>
	3. Encourage trying		Experiment plan	Individual	Table	<ul> <li>Experiment plan per pérson</li> </ul>
Reflection	2. Regularivs. innovation	15 min	Failure contract	Individual	Table	
Feedback		15 min	What did we learn?	Discussion	Table	Feedback form per person     Stickers

#### Toepassing

Binnen het innovatieplatform bieden we al een workshop die de NS innovatie methode uitlegt. Deze workshop speelt niet in op een specifieke methodiek, maar meer op een mindset verandering. De workshop laat mensen ervaren wat de waarde van falend innoveren kan zijn en is een goede opwarmer om daarna het innovatietraject in te gaan.



#### Inspire

 Ik heb gemerkt dat er een behoefte is van scrummasters om hun team te overtuigen van het belang van falend innoveren. Ondanks dat deze teams soms erg technisch kunnen zijn en de workshop vaag zouden kunnen vinden, kan het wel wat losmaken.

#### Convince

 Ik merk dat veel mensen toch nog naar boven kijken of iets wel of niet 'mag'. Dit is iets wat mensen tegenhoudt in het doen van experimenten. Mijn advies zou dan ook zijn om mensen uit de top te betrekken in de workshops. Geef ze dan niet aan een los managementteam, maar mix het met mensen die onder hun wat dichter op de operatie werken. Die operationele mensen zien namelijk sneller de waarde en dat werkt aanstekelijk voor het managementteam.

#### Align

· Wat ik heb gemerkt is dat innovatieprojecten soms moeizaam gaan omdat mensen niet de juiste mindset hebben. Deze workshop kan dan ook als tool worden gebruikt om in de juiste mindset te komen en tegelijkertijd het project waarin we vastlopen een boost te geven.

#### Lopende leads

- · Was aanwezig bij de summerschool workshop en woonde deze bij uit interesse voor het onderwerp
- Werkt in de verborgen fabriek
- Wil graag de falend innoveren mindset verspreiden (vooral bij top management)
- Had graag de workshop willen volgen, maar had niet op tijd een team bij elkaar gesprokkeld.
- Samen met Rainish willen we een workshop plannen in combinatie met XR en het project Lelylaan.
- Het voornaamste doel is sneller door het proces kunnen gaan en hoe ze sneller kunnen leren.
- Ze hebben verschillende plateaus en in de workshop zouden ze graag op eentje willen inzoomen.
- De groep bestaat uit mensen met weinig ervaring met design thinking/innovatie.
- Nav de workshop gaf Janneke aan dat haar team er behoefte aan heeft om eens per maand 2 uur met een innovatiecoach te zitten als een stok achter de deur om falend innoveren aan te moedigen. Misschien kan een herhaling van zo'n dergelijke workshop hun project een boost geven.
- wilde heel graag een workshop om een vraagstuk over IoT te behandelen ٠ samen met zijn collega's. Er was een ingepland maar deze is last minute gecanceld. Zou leuk zijn hem nog eens te benaderen!

#### Top management/innovatieboard

• Wat nav mijn scriptie een interessant vervolg experiment zou zijn is wat deze workshop zou kunnen doen als hij aan mensen hoger in de hiërarchie wordt gegeven. Ik denk dat dit een hele waardevolle stap kan zijn richting een innovatiecultuur waar falen meer omarmd wordt.

#### Mensen om nog een koffietje mee te drinken

- Heb ik allemaal al gesproken tijdens mijn project, maar vinden het een interessant onderwerp
  - Reageerde op mij nav de flyer van de workshop, had alleen geen team om de workshop mee te doen, maar is wel geïnteresseerd.
  - Zelfde verhaal als hierboven!

#### **APPENDIX H: TRANSFER DOCUMENT**

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o Had een gevoel over waar we met NS heen moeten en wat de oorzaken zijn van het probleem. Hij werkt hier al lang en weet ook nog tijden dat innovatie wat makkelijker was.

Gedragscoach. Had een leuk gesprek met hem!

 Gesproken aan het begin en ze kwam naar me toe met de tip om Amy Edmondson op te zoeken. Erg waardevol gebleken! Heb nog een gesprek met haar gehad en ik denk dat ze wel erg geïnteresseerd is om verder te praten.

Handige links voor grafisch design

- Iconen
  - https://www.flaticon.com/
  - <u>https://thenounproject.com/</u>
- Illustraties
  - o https://storvset.com/
- Foto's
  - https://pixabav.com/nl/
  - <u>https://www.pexels.com/nl-nl/</u>
  - <u>https://unsplash.com/</u>
  - https://www.freepik.com/
- Video's
  - https://www.pexels.com/videos/
  - <u>https://mixkit.co/</u>

#### **APPENDIX I: PROJECT BRIEF**



# 6 Ž A

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NO

YES all 1<sup>st</sup> year master courses passed

nissing 1<sup>st</sup> year courses

Braber

Signature

Signature

Robin den Digitaal ondertekend door Robin den Braber

Monique Digitally signed by Monique von Morgen von Morgen 11.06.03 +01.00'

Datum: 2024.03.15 13:29:02 +01'00'

#### **APPENDIX I: PROJECT BRIEF**

APPE	A	P	P	E
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DEF		Delft	introduction (com	tinued): spac
	Personal Project Brief – IDE Master Graduation Project			, ,
ſ	Jame student Jasmijn Verhoef Student number			
PR Cor	DIECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT nplete all fields, keep information clear, specific and concise			
F	roject title			
P	lease state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The emainder of this document allows you to define and clarify your graduation project.			
I	ntroduction		image / figure 1	
i i	Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder anterests. (max 250 words)			
	The Nederlandse Spoorwegen (NS) transport over 1 million travelers daily and with that, they are the largest passenger transport company in the Netherlands (Nederlandse Spoorwegen, n.d.). Therefore, they play a big role in our society. Think about checking in with your OV card, renting an OV bike or planning your travel in the NS app. These are just a handful of innovations that these 1 million travelers encounter daily. Therefore, the NS has much influence on society and thus it is essential to keep adjusting to changes in this society.			
	To deal with these complex societal issues, lean startup and design thinking have grown as management approaches over the past years (Dorst, 2011; Gelobter, 2015). A couple of years ago, the NS established an innovation department to involve these methods in the organization.			
	Even though design methods are adopted in the innovation department, the real challenge remains to bring an innovation mindset into the culture of an organization (Prud' homme van Reine, 2017). This entails going back to revise the problem or dealing with unexpected user feedback. These iterations could feel like failure for people who are used to linear thinking but are essential to the design process (Iske, 2018). People need to be vulnerable and be able to see setbacks as learning opportunities rather than mistakes (Price, 2023). Price & van der Bijl-Brouwer (2023) have captured this capability as ' designer resilience' and defined 10 principles that guide people to practice a more flexible way of designing. These principles are identified and applied in the academic context, but not yet in an organizational context.			
			image / firmer 2	
•	space available for images / figures on next page		image / figure 2	

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#### NDIX I: PROJECT BRIEF



#### Problem Definition

What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice. (max 200 words)

Embracing uncertainty and seeing failure as an opportunity is important to learn from iterations in a design process (Price, 2023). However, designer resilience could help set the right mindset, which is referred to as the 'meta-cognitive capacity and adaptability we draw upon when designing gets difficult' (Price & van der Bijl-Brouwer, 2023, p.11). However, designer resilience has not yet been thoroughly investigated, especially not in the organizational context (Price, 2023).

The NS plays an important role in society and people are dependent on their services to commute to their work, school or social activities. The NS has a responsibility to provide a safe and punctual service. This also means people are critical of the services that the NS delivers, which makes the NS employees risk averse. In the operational domain, avoiding risks is important. However, avoiding risks spills over to safer domains where failure could be of great value. In design processes, embracing failure could help come up with creative solutions (Iske, 2018).

This is why the NS aims to embed flexibility towards failure in the innovation culture of the organization and stimulate an open and creative attitude in 2024 (Nederland Duurzaam Bereikbaar. Voor ledereen, n.d., p.50; van den Brand, 2023).

#### Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for. Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence) As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Design a campaign to improve failure embracement for the employees of the Nederlandse Spoorwegen.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

The project is explorative and qualitative and will be divided into three phases of six weeks each: defining the problem, generating ideas and implementing the solution. This is based on the three diamonds defined by Heijne & van der Meer (2019). Input will be generated in several ways:

- Co-creation sessions to fuel iterations and to create ownership about the eventual solution to prepare NS-employees for implementation. These sessions will be conducted throughout all three phases to generate and test concepts.

- Project participation in workshops and meetings to actively observe NS' innovation process. This will be done throughout the whole project to keep sight of the context and make the eventual solution fit.

- Literature research to find out background information on the principles and effective methods. This will only thoroughly be done in the problem definition phase.

- In-depth interviews with NS employees who have either experienced or facilitated an innovation process. In the problem-defining phase, this is meant to get to know the context and the problem. In the implementation phase, the interviews function as validation to find out how the solution could realistically be implemented.

#### Project planning and key moments

To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a kick-off meeting, mid-term evaluation meeting, green light meeting and graduation ceremony. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).

Make sure to attach the full plan to this project brief. The four key moment dates must be filled in below

Kick off meeting	27 Feb 2024	In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project
Midstorm avaluation	17 Apr 2024	Part of project scheduled part-time
wid-term evaluation	17 Apr 2024	For how many project weeks
Green light meeting	19 Jun 2024	Number of project days per week
		Comments:
Graduation ceremony	7 Aug 2024	

#### Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five.

(200 words max)

The value of failure is something I' ve always found intriguing. I think design differs from other disciplines in the way that failure is seen as something which is part of the process, which is used to learn and grow from. My positive attitude is valued when facing hurdles in teamwork, so l' m glad to investigate further why this is important and how this mindset can be encouraged in an organisational context. I hope doing this project will guide me in the next steps in my design career. To do that. I formulated the following goals.

1. I want to learn how to convincingly present ideas or facilitate sessions. This entails clearly stating the goal, confidently follow the approach I believe in and prepare well.

2. I want to learn how to experiment with confidence. In line with the previous learning goal, I want to confidently take risk to focus and aim for learning instead of performing.

3. I want to learn how to deliberately integrate feedback. I tend to change the course of my project too quickly, without deliberately thinking about what the feedback means and how it could be valuable. For the sake of the project, I think it's important to take time to look at results and feedback before I integrate it.