



Strategizing the ideation phase of the startup studio model

How can the application of design in early phases of innovation enhance startup studio ideation?

Master thesis
Marloes Meijer
April 2019

Strategic Product Design
Delft University of Technology



WE ARE BUILDERS

**TU Delft**

Colophon

Master Thesis
Msc. Strategic Product Design
April 18th, 2019

Marloes Meijer
marloesmeijer1994@gmail.com

Delft University of Technology
Faculty of Industrial Design Engineering

We Are Builders

GRADUATION COMMITTEE

Chair: Rebecca A. Price
Faculty of Industrial Design Engineering
Department of Product Innovation Management

Mentor: Marina Bos-de Vos
Faculty of Industrial Design Engineering
Department of Product Innovation Management

Company mentor: Sharon Klaver
We Are Builders

Glossary

WAB - We Are Builders

We Are Builders is the startup studio that forms the research site of this research assignment.

B2B - Business to Business

B2B companies are supportive enterprises that offer products or services other businesses need in order to operate and grow. These include businesses like payroll processors, service management software or industrial suppliers (Uzialko, 2019).

SaaS - Software as a Service

Software as a Service is a distribution model for software, whereby instead of downloading the software to run locally on your PC, the program is hosted by a third-party provider, and then accessed by users over the internet (DeMuro, 2018).

FFE - Fuzzy Front End

The Fuzzy Front End is defined by Kim and Wilemon (2002) as the period between when an opportunity is first considered and when an idea is judged ready for development.

SPD - Strategic Product Design

The master programme this graduation research is done at. Strategic Product Design has the goal of mastering design's impact on business and markets.

POC - Proof of Concept

A Proof of Concept is a prototype to validate the feasibility of a concept in a specific market in a specific form. A POC is a smaller project, typically used internally rather than introducing it to the public, to verify a certain concept or theory that can be achieved in development (Clearbridge, 2017).

Prototype

While a POC shows that a product or feature can be done, a prototype shows how it will be done. A product prototype is a working and interactive model of the end product, communicating the design and navigation of the app, for example, to stakeholders in order to maximize the efficiency of the development process (Clearbridge, 2017).

MVP - Minimum Viable Product

The Minimum Viable Product is a version of the product that enables testing the product idea with a minimum amount of effort and the least amount of development time (Ries, 2011). The minimum viable

product lacks many features that may prove essential later on, but has the goal to learn how your users will react to your product before a company wastes money and resources building something users don't want or need (Clearbridge, 2017).

CEO - Chief Executive Officer

Chief Executive Officer: the main person responsible for managing a company, who is sometimes also the company's president or chairman of the board.

CTO - Chief Technical Officer

An executive whose primary responsibility is to manage and address technical issues that a company faces, including research and development (R&D). Also called Chief Technical Officer.

Builders

Employees of We Are Builders.

Obeyo

A We Are Builders startup. Obeyo is an online platform for service living that brings together technology and hospitality in apartments. The goal of the platform is to make living and household more easy and relaxing by streamlining processes.

Influentials

A We Are Builders startup. Influentials is an all-in-one platform for connecting social influencers and brands, managing campaigns and sharing social insights.

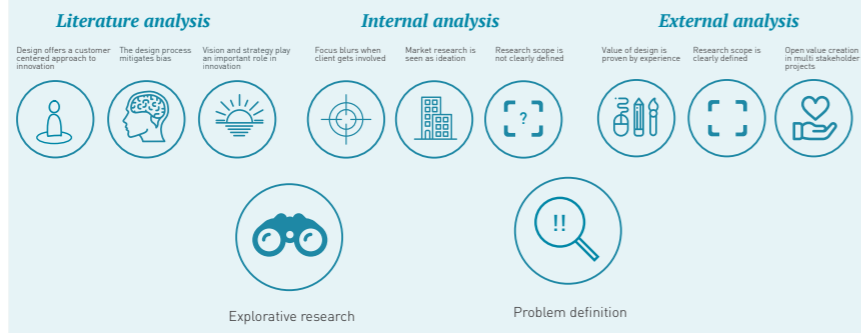
DLI - Design-Led Innovation

Design-Led innovation is a framework and strategy that aims to transform business through embedding design capability within an organization (Bucolo, Wrigley, Matthews, 2012).

DIC - Design Innovation Catalyst

The role of the "Design Innovation Catalyst" (DIC) is to translate and facilitate design observation, insight, meaning, and strategy for all facets of the organization. In this role, the DIC continuously explores, instigates, challenges, and disrupts innovation internally and externally—all from a position within the company. The DIC extends this process to re-aligning business activities and subsequently mapping these activities back to the strategy of the firm (Wrigley, 2016).

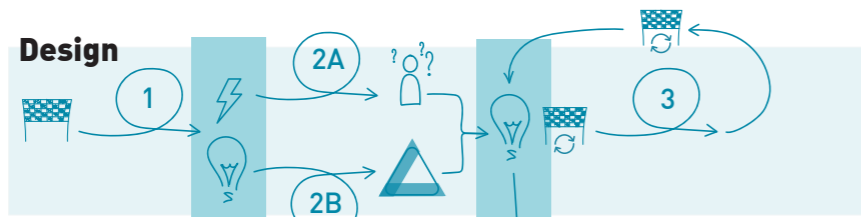
Discover



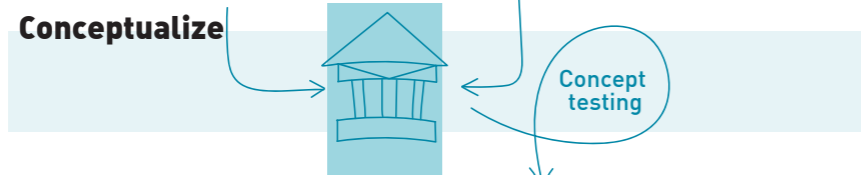
Define



Design



Conceptualize



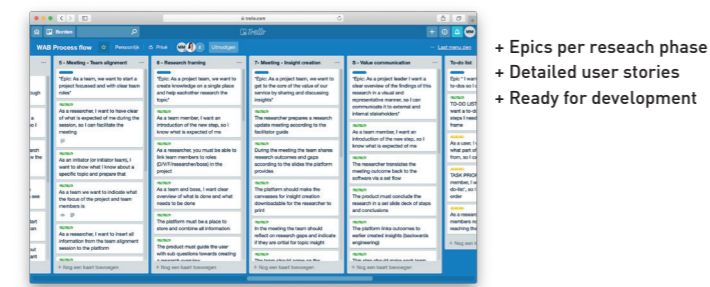
IGNITE! Explorative research method



IGNITE! - Digital explorative research platform



IGNITE! - Building plan



Abstract

This project has explored how design can be of added value in early phases of innovation in the context of the startup studio We Are Builders. Insights were gathered from multiple sources to analyse the project scope and explore opportunities. The goal of this graduation assignment is to create a method to execute ideation that We Are Builders can use to exploit opportunities when an idea pops to mind.

A startup studios form a new structure of innovating. Startup studios launch multiple startups based on a systematic approach from spark to launch. This research will build on the findings of Kohler and Baumann (2018) explaining the organizational level of a startup studio in a scientific manner for the first time. This research adds to the research on innovation structures by creating a deep insight into the startup studio ideation process.

This graduation assignment used the principles of action research to both work with the company and also executing research. This resulted in me being a design researcher creating a ideation strategy for We Are Builders as well as being a researcher in the team of the new We Are Builders startup simultaneously. This new startup is currently in the 'ideation' phase of the startup studio model. This double role allowed me to use the new startup as a test case to explore how design can be of value during the early phases of innovation while researching the topic.

To understand where the current ideation strategy of We Are Builders is overlapping or differing from competing venture builders and the process of design, processes are analysed. Via literature research, the process of design in a business context is analysed. Afterwards, literature on innovation will form the basis to create context understanding to be able to link this project to the broader innovation context.

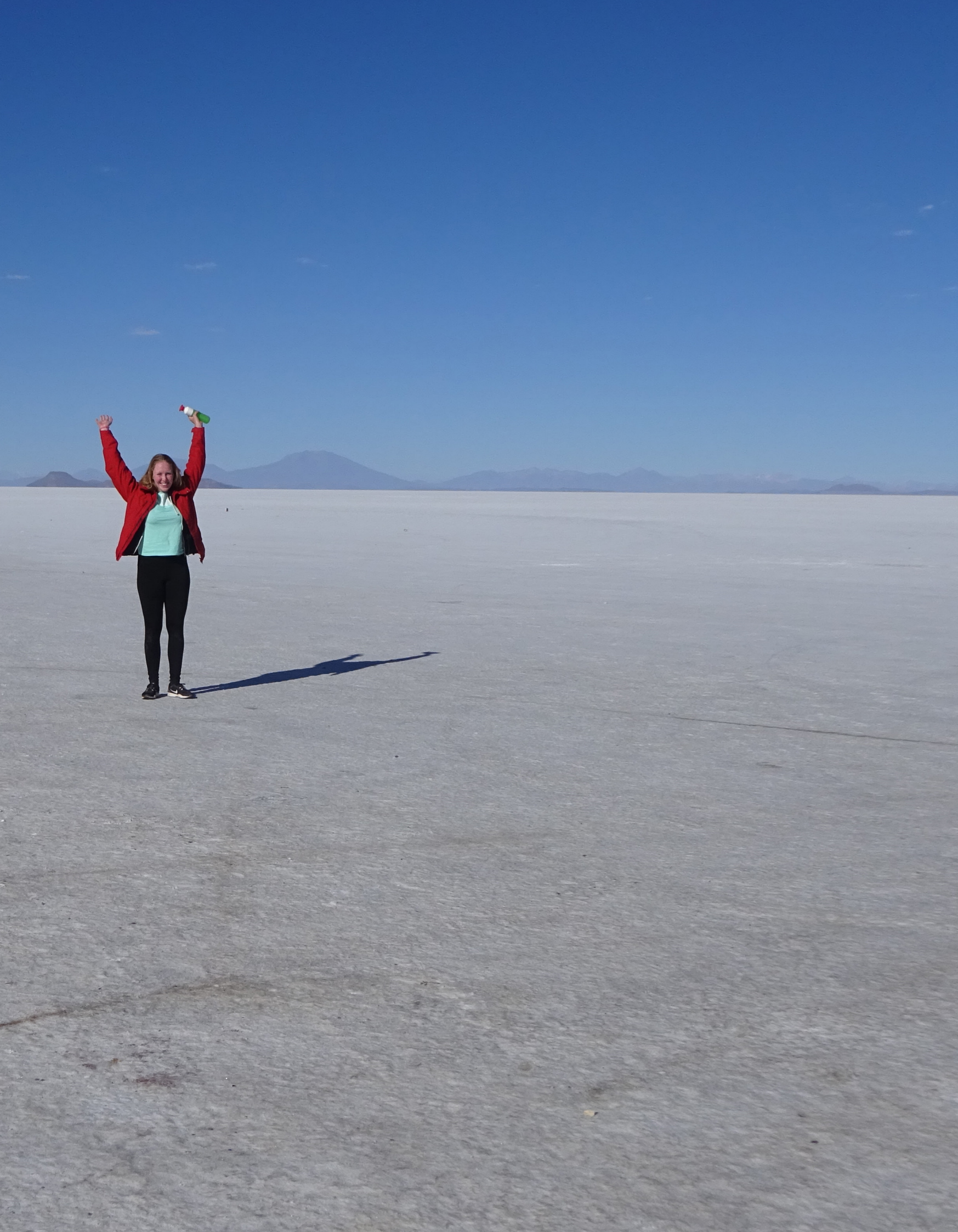
A multiple and single case study research to the startups launched by the We Are Builders team in history showed that We Are Builders currently lacks a moment of problem definition in the innovation process. Without stating a clear problem definition and validating this,

it is unclear if needs and wishes of clients involved later in the process are representative for a broader market. Because a clear problem definition and method to document research findings is missing at We Are Builders, entrepreneurial bias overrules the research outcomes.

This focus on problem framing and exploring opportunities resulted in the design of a framework for explorative research. This explorative research framework combines the explorative and user-centered nature of design with the practical and direct way of entrepreneurial research. This research method can support a group of entrepreneurs to approach research in early phases of innovation in a structured, holistic way.

The solution of this graduation assignment applies design in early stages of innovation, to give startup studios the confidence to execute these stages in a design led way in the form of IGNITE!. IGNITE! consists of a explorative research approach booklet (minimum viable product), a digital wireframe of the process flow (prototype) and building plan to translate the minimum viable product and the prototype towards a digital platform for explorative research. of the IGNITE! Explorative research method. With these deliverables, the startup studio can start testing the research method today and explore competitive advantages of translating the method to a software platform in the future.

For the scientific world, this research gives insider insights in how a startup studio approaches innovation, focussed on the fuzzy first phases of innovation. The research showed that design can be of added value to innovation in translating knowledge to insights in a holistic, end-user centered and co-creative manner. Design stimulates entrepreneurs combine divergent and convergent activities, to share findings and perform research in a explorative and collaborative manner.



Acknowledgements

With this report I conclude my time as a student at Delft University of Technology by presenting to you my master thesis. Looking back, I am happy to finish my master Strategic Product Design and I am grateful for all the experiences, choices and support that have led me to reach this milestone. I couldn't have made this graduation without the support, feedback and distraction I received from everyone around me.

Rebecca and Marina, thank you for allowing me to follow my own path and let me become an independent designer through the guidance of you as experts. Throughout the process, I've sometimes been insecure about putting my design capacities in practice, but you showed me through critical feedback and uplifting remarks that my six years of studying have led up to successfully executing a design project on my own. This helped me to take huge leaps throughout the project. Thanks for pushing me to create deep insights, look further than only my research site and reflect critically.

Sharon and Michael, thank you for the deep dive into the world of entrepreneurs, business and high energy at We Are Builders. Thanks for the feedback, the frequent conversations, team outings and all the insights into startup studios. You made me feel part of a fast growing company that is at the start of even bigger success. Thanks to Myrte, for boosting creativity, helping me to create new and realistic concepts for the company, and for listening to my doubts. Thanks to all interviewees and fellow Builders involved in this project, created valuable insights in the field of design and innovation.

Thanks to Wikke, Tobias, Mieke, Willemijn, Jiska and Neema for being great designers and awesome support in the process of graduation. Thanks to Maaïke for being the best, as well as my roommates. Thanks to my parents, Sjoerd, Paulien, Luna and Zara for not always understanding what was going on, but never stop supporting me and always being proud of me. Finally to all my great friends for securing my work-life balance and listening to me rambling about graduation or random thoughts, especially Niels, Tom, Veerle, Brecht and Pervin.

Graduation has been fun, interesting, tough and terrible, sometimes simultaneously. It forms the end of a great journey as a Delft University of Technology student. It made me a confident designer, ready for the next adventure.

With gratitude,
Marloes

Table of contents

1. Introduction	4	7. Design	50
1.1 Research context	6	7.1 First ideation	50
1.2. Research site	6	7.2. Design loop 1 - Problem scoping workshop	54
1.3 The assignment	8	7.3. Design loop 2 - The why of research	58
2. Methodology	10	7.4. Friction!	62
2.1 Research structure	10	7.5. Design loop 3 - Empathize	64
2.2 Discover	12	7.6 Pivot	65
2.3 Define	14		
2.4 Develop	14	8. Conceptualization	68
2.5. Deliver	15	8.1 Explorative research guide framework	68
		8.2 Framework testing	72
Discover	17	8.3 Framework evaluation	76
3. Literature analysis	18		
3.1. Value of design	18	Final design	78
3.2. Innovation	21	IGNITE... LIFT-OFF!	80
3.3. Strategy in innovation	22	9.1 Final design requirements	82
3.4. Design innovation	23	9.2. Explorative research method	84
3.5. Design to mitigate self bias	24	9.3. IGNITE! MVP	86
3.6. Design innovation in digital surroundings	24	9.4. IGNITE! Prototype	88
3.7 Concluding literature analysis	25	9.5 IGNITE! Building plan	90
4. Internal analysis	26	9.5 IGNITE! validation	91
4.1. What - startup product category	27		
4.2. Why - WAB values	28	Evaluation	93
4.3. Who - people and responsibilities	29	10.1 Conclusion and discussion	94
4.4. How - Way of working	30	10.2 What you need to know	96
4.5. Process analysis	32	10.3 Personal reflection	97
5. External analysis	38		
5.1. Sector expert interviews	38	References	98
5.2. Venture builder research	40		
5.3. Concluding external analysis	40		
5.3. Internal and external process comparison	42		
5.4. Concluding discover	43		
6. Define	46		
6.1. Design challenge	47		
6.2. Design goal	47		

A person in a dark coat and hat walks away from the camera down a narrow alleyway. The walls on either side are made of light-colored wood and are heavily covered in graffiti and Dutch text. The floor is also made of wood. In the background, a modern building with many windows is visible under a cloudy sky. A white text box is overlaid on the right side of the image.

The project

This chapter aims to provide an overview of the research by introducing the research topic, the bigger context of the project and the research site this research is executed at. Afterwards, the relevance and contribution of this research to the academic and professional world is explained. Finally the research methodology is explained.

1. Introduction

A startup is a temporary organization whose goal is to search for a sustainable and profitable business model. Searching is managed using startup methodologies such as design, customer development and experimentation. Today, 90% of startups fail because of no market need, insufficient financing, missing team competencies, price/cost issues, or bad timing (CBInsights 2018; Gross 2015) (figure 2).

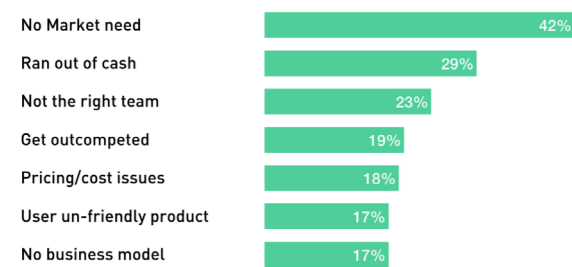


Figure 2 — why startups fail

To reduce these risks, startup studios were launched. A startup studio is a supportive structure to create scalable and successful startups and can be defined as:

'A venture builder (startup factory, venture builder, startup studio, venture lab) is a team of startup veterans who take multiple ideas from scratch or startups in their infancy and simultaneously turn them into independent companies using shared expertise and resources. Studios generate own ideas and get the ball rolling towards creating self-sufficient companies (Szigeti, 2016)'

A studio goes beyond providing capital: it provides resources, knowledge and financial support to let a startup grow in a controlled way (Szigeti, 2016). Startup studios reshape the innovation industry by being an entrepreneurial platform.

A startup studio develops ideas into products and products into companies. The studio houses a entrepreneurial team and provides it with funding and shared resources (Rathgeber, Gutmann, Levasier 2017). Together with

entrepreneurs, a startup studio generates ideas internally and acts as co-founder when the startup exits the studio. In this way a startup studio can run multiple projects in an efficient manner. Knowledge and expertise is kept inside the studio, creating increasing value over time. It also reduces risks by stopping projects that don't deliver value in an early stage, while the successful ventures generate profit to keep the studio running (We Are Builders, 2018).

Entrepreneurial knowledge and development skills are a great bases for a startup studio to develop a concept and launch a company, but these skills are harder to apply during the more 'messy' phases like ideation because entrepreneurs are in general driven by concrete and hands on results. Ideation asks for divergence activities regarding research and empathizing (Sanders Stappers 2012). During the ideation phase startup studios mainly focus on market research and stakeholder understanding. Design approaches are now barely applied during the phases where the problem is still 'wicked', this is particularly the case in the part where the solution space has yet to be defined: the fuzzy front end (FFE)(Alvarez Barney 2013). The FFE can be described as the activities to inform and inspire the exploration of open ended questions with the goal to discover what to design by understanding the user, the context of use, and exploration and selection of tech opportunities (Sanders, Stappers, 2007). Because the first phases of innovation can be chaotic and unstructured in nature, startup studios are struggling with it. Startup studios approach the early, more wicked phases of innovation mainly evidence based and practically oriented (Szigeti, 2016). Therefore I spot a design opportunity during early phases of innovation of startup studios where a design FFE approach can strengthen the current evidence based approach of the early phases of innovation. This design opportunity forms the foundation of this graduation project. The solution of this graduation assignments applies the principles of design into early stages of innovation, to give startup studios the confidence to execute these stages in a design-led way.

By researching what is known, and anticipating on what is yet to discover, designers have a mindset to solve wicked problems. Designers combine skills as researcher, facilitator and strategist and therefore have the ability to create innovations that are valuable for both users and organizations (Bijl-Brouwer and Dorst 2017; Calabretta and Kleinsmann 2017). The distinctive aspects of the design process combine three perspectives into a holistic solution. The perspectives contain a human-centered perspective, a business perspective, and a technology perspective. They answer three core questions: What is desired, viable, and feasible (Brown 2009)? This makes design applicable in the first stage — market research and ideation — of creating a new startup (Leonard, Reypert, 1997).

Design is already applied in intrapreneurial projects and other innovation companies, for example in the case of Design Led Innovation (Bucolo, Wrigley, Matthews, 2012). As stated in the McKinsey report 'The business value of design' (Sheppard, Sarrazin, Kouyoumjian, Dore, 2018), there is a clear correlation between design and financial business performance. While design is gaining more traction outside of traditional design practices, it is time to look at how design can spark and enrich innovation strategies in a new context, the context of a startup studio. Therefore, the question arises: how can the application of design in early phases of innovation enhance startup studio ideation?

This graduation project will focus on discovering what the value of design is in the context of a startup studio. This research will give handholds for strategizing the innovation process. For this purpose a startup studio is being researched as a case study. This research will build on the findings of Kohler and Baumann (2018) explaining the organizational level of the 'venture factory' (e.g. startup studio) concept and add to them by creating a deep insight into the startup studio ideation process. This is done by designing an explorative research method to strategize the early phases of innovation and support entrepreneurs in the process of exploring. The higher goal of this graduation is to give advise on how other innovation structures can apply design in early phases of innovation.

This graduation project will focus how to apply design in early phases of innovation with the higher goal to uncover what the value of design is for a startup studio or other innovation structure

1.1 Research context

Startup studios are a new structure of innovation, therefore, research on the concept is scarce. Rathgeber, Gutman and Levasier (2017) executed one of the first academic researches on startup studios and their processes. Within a startup studio the focus is on launching new ventures based on a systematic venture creation process. A startup studio is relying on fixed parameters: the team members, goals, project form, processes and investor risks are set.

Many companies focussed on innovation are realising the value of internal venture creation, like intrapreneurships, incubators or accelerators. An example of this is the ING Customer Experience Center, focussing on launching multiple startups via a set intrapreneurial program. These innovation structures focus on creating innovative concepts in a specific collaborative way. These structures often have changing teams, insecure funding or unclear vision focus and therefore are in constant change.

1.2. Research site

We Are Builders (WAB) is a startup studio focussed on tech opportunities within the scope of Software as a Service (SaaS) and business to business (B2B) software. WAB was launched in 2016 and aims to create a place to share knowledge between entrepreneurs and for them to become the best entrepreneurs possible. This means that WAB is a place to share knowledge and help young entrepreneurs with gaining experience and grow as an entrepreneur while together building startups with a set co-creative approach. The WAB team consists of entrepreneurs with years of experience in software development and innovation. These employees have expertise in software development, business and financial businesses. The different roles within the studio are elaborated on in chapter 4.

One example of a WAB startup, and a product that is representative for We Are Builders development qualities, is Influentials (figure 3). Influentials is an online platform for that brings together brands and influencers to create

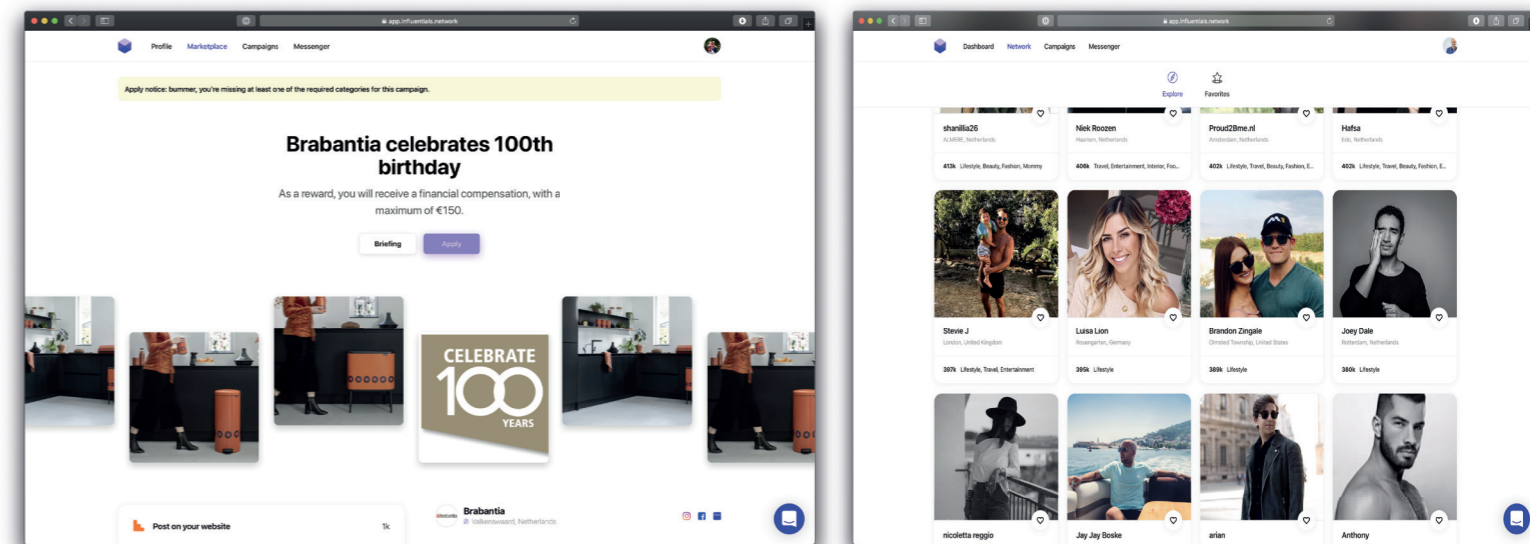
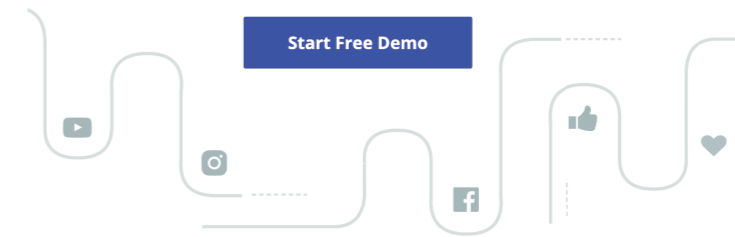
Because a startup studio has a set team, guaranteed funding and development focus, it forms an interesting research context to uncover what process additions can be beneficial for startup building in general. Research to the process of a startup studio will help other innovation focussed companies in strategizing their processes as well.

meaningful campaigns together. This platform around influencer marketing helps brands to get in touch with their target group and creates transparency in the market of influencer marketing. The startup is launched by We Are Builders CEO and the Influentials founder.

Because WAB is a relatively new company, the team is still small (about 10 people) and no process has been put on paper. The current processes applied at WAB are based on own entrepreneurial experience and inspiration from other startup studios. WAB is planning to formulate a studio playbook. According to Accenture (McDonald, 2014) a playbook consists of 'process workflows, standard operating procedures, and cultural values that shape a consistent response—the play. A playbook reflects a plan; an approach or strategy defining predetermined responses worked out ahead of time.' This playbook will function as a basis for future startup creation.

Team up with influencers, create campaigns and get big results.

Influentials is an all-in-one platform for connecting social influencers, managing campaigns and sharing social insights.



MEET THE TEAM



Alex Buis
CTO



Michael van Lier
CFO



Jolique Möller
FOUNDER & CEO



Dana de Koning
BRAND ADVISOR



Emily Dobbe
CUSTOMER SUCCESS MANAGER



Sharon Klaver
VENTURE MANAGER



Tessa van Blaricum
ADMINISTRATIEF COÖRDINATOR



Martina Sprong
SOFTWARE ENGINEER

Figure 3 – WAB startup Influentials

1.3 The assignment

Although WAB is a new startup studio, launched in 2016, the studio founders have launched around ten startups in the past. Based on these prior experiences, WAB created the studio process shown in figure 4. The process consists of three stages: spark, explore and create. At 'spark' a gap in a specific market is identified. This spark is researched during ideation and translated to a product during the creation phase. These stages are split in set activities: ideation, the creation of a Minimum Viable Product (MVP), the evaluation of a business plan, the creation of a Proof Of Concept (POC), the start of a collaboration with a launching customer and the startup exit. These activities will be further explained in chapter 4. The outlines shown in figure 4 form the basis of the WAB startup studio playbook.

WAB is using its experience, knowledge and skills to create the studio playbook. As shown in figure 4, three kinds of knowledge are identified by the researcher and the research site as fundamental to strategize the process from spark to company launch: design knowledge, development knowledge and entrepreneurial knowledge. Design knowledge is needed at early phases of innovation to translate a spark to a valuable product for a user base. The creation of an MVP or prototype requires development skills and market insights and launching a company requires entrepreneurial skills.

Before the start of this graduation assignment, WAB indicated that a set ideation process is essential to create startups that are more likely to succeed. Currently, no ideation process is defined. This makes the ideation phase unclear and hard to execute, and therefore it is often skipped. Design and design-led innovation (Brown 2009; Bucolo 2011) are strategies that approach early phases of innovation in a structured way. This makes these strategies interesting as a basis to create a valuable ideation process.

The goal of this graduation is to uncover how design can be of added value during early phases of innovation in the context of a startup studio. This research will lead to the creation of a design led ideation strategy. Therefore, the goal is to analyse and define the best ideation process for WAB, where the main question for this graduation is:

“How can the application of design in early phases of innovation enhance startup studio ideation?”

The assignment is limited to the exploration and ideation phases because that is where the knowledge gap exists. With methods like the Lean Startup (Ries, 2011) the later more concrete phases like development and launch, are already strategized and fitted to startup creation. The combination of synthesis and analysis (Brown 2009) that design uses during exploration and ideation will enrich the process of startup creation in early phases of innovation.

Sub questions that need to be answered to create a sufficient ideation strategy are:

- How to engage and align stakeholders throughout the ideation process (Alvarez and Barney, 2013, Freel, 2003)?
- How to evaluate and exploit opportunities (Alvarez and Barney, 2013) at the start and end of ideation?
- How to gather and use deep customer insights (Price and Wrigley, 2013) for concept design and evaluation to guarantee end user impact?

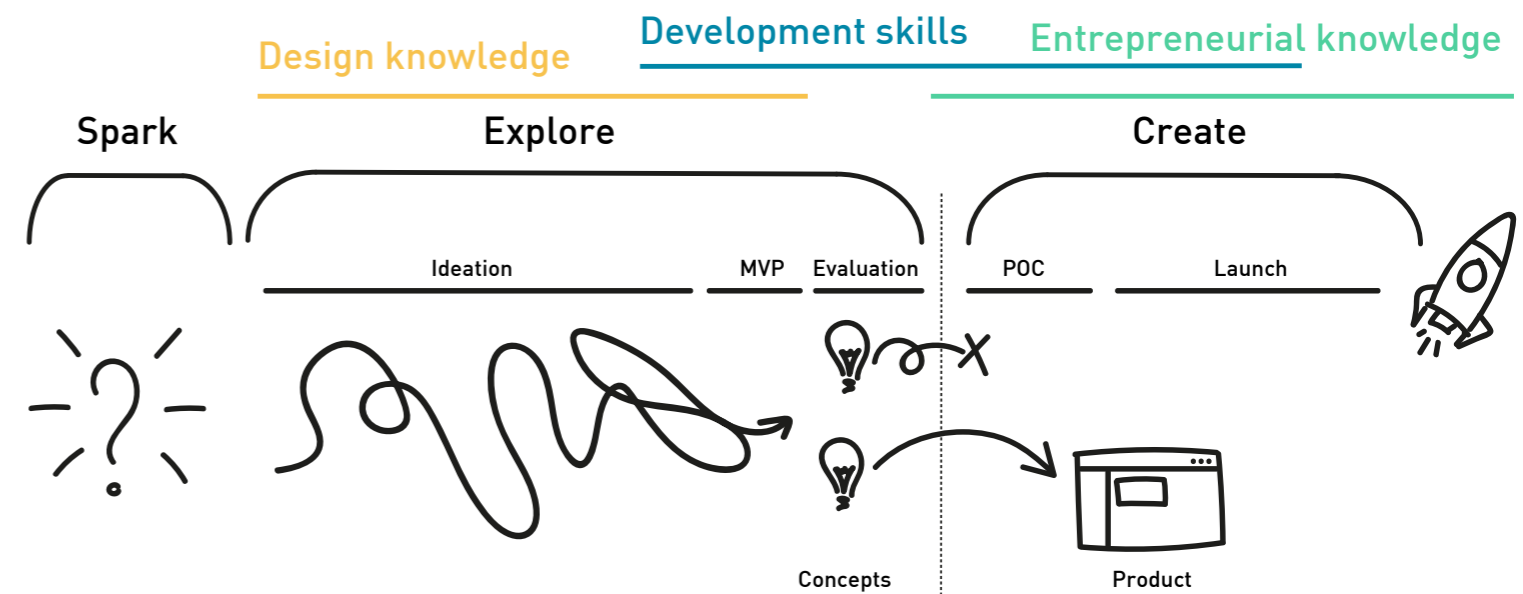


Figure 4 – WAB startup studio process

2. Methodology

The methodology chapter explains in detail how this research is structured, what people are involved, how decisions are made and what the role of the researcher was. Afterwards, research steps and procedures are explained per research phase.

2.1 Research structure

This design research is structured based on the Double Diamond model (Design Council, 2005) and consists of four parts: discovery, define, design and deliver (figure 5). The Double Diamond model is chosen as a structure for this research because uncovering how to define the value of design for startup studios is a very broad

topic that needs exploration before defining in which direction to design and deliver a solution. I will discuss every phase individually with the included steps taken described in detail.

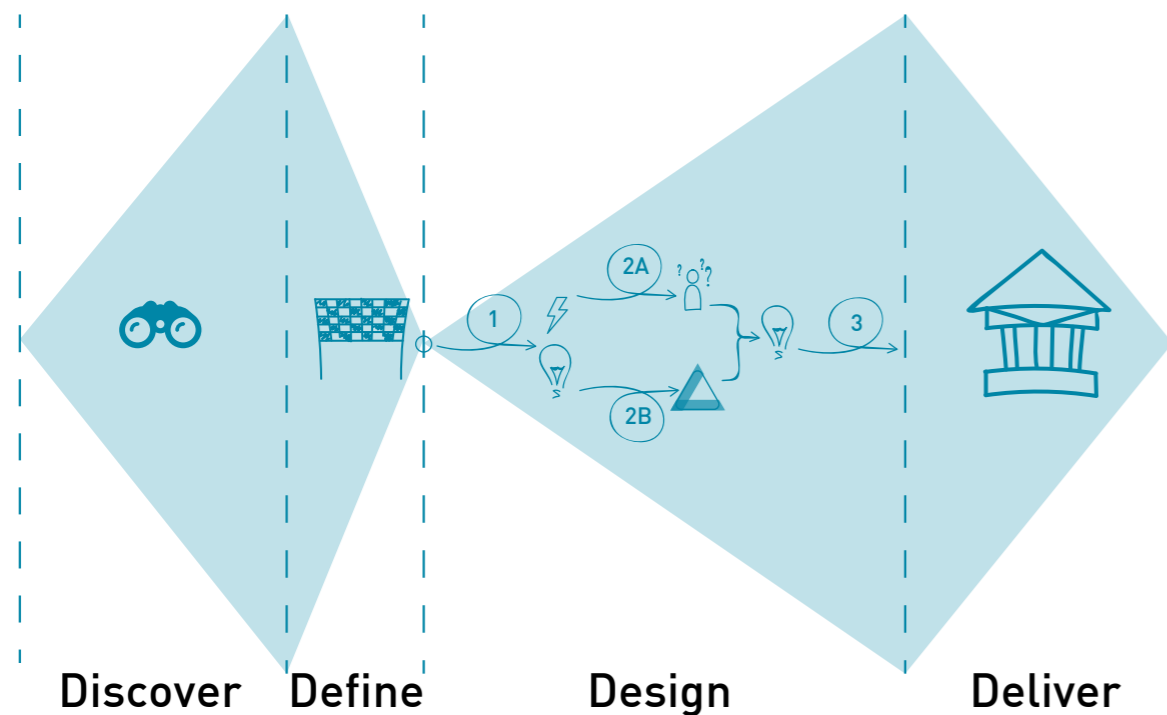


Figure 5 – Graduation project process

2.1.1. Participants

This research is executed at the We Are Builders startup studio. The company employees are all involved within the research at different parts of the process. This will be further elaborated on in chapter 4.3. During the discovery phase, external sector experts in the field of design, both software development (2 interviewees) and innovation (2 interviewees) are involved via semi-structured interviews about their knowledge and experience. The external participants have been selected through my own network. Their expertise contributed to the end goal because it broadened my perspective on the topic and allowed me to gain deeper knowledge on how designers behave in diverse innovation and software contexts. During the design phase, design loops were tested with internal stakeholders (CEO, venture manager, researcher, startup CEO), external designers (2 participants) and design students (8 participants).

2.1.2. Reflective decision making

Because WAB is small company, quantitative research possibilities are limited. To gain deeper insights and make decisions based on these insights, all decisions are taken in a reflective manner. Findings were presented via slide decks to open up discussion with the involved stakeholders. Decisions were made based on discussion analysis, notes during the process and my own gut feeling.

2.1.3. The role of the researcher

This research was executed at a company that is not familiar with working with strategic designers. This required me to keep an open view on their way of working and based on that, taking the WAB team along step by step in the 'why and how' of design. The small size of the company allowed me to get to know the WAB team very well. This personal connection with the WAB team allowed me to also use lunch breaks, team outings and friday drinks as input for this project. The insights gathered during such events were not decisive, but influenced 'gut feeling' decisions. Because of ethical considerations, no names are used in this report.

TAKING CARE OF BIAS

Taking care of bias is linked closely to making decisions on gut feeling. To prevent over rushed decision making, reflection on the process and

findings was done with fellow design students to validate if insights that were based on observations or conclusions were solid. Bias was also prevented by always validating insights in the form of statement cards from interviews with the interviewee. After interviews, the interviewees received the statement cards with the question if it was a right interpretation of their answers.

In the process of problem solving and innovation, I took on different roles, described by Tan (2010):

DESIGNER AS RESEARCHER

As design researcher, I used generative research techniques (Sanders and Stappers 2012) like creative session and observations throughout the project for inspiration, and to gather insights and knowledge to create new ideas and opportunities. Evaluative research is used to gather information and to reflect on findings and their impact to the bigger context of this research.

DESIGNER AS STRATEGIST

As a strategist, I took a bird-perspective and acted as a voice of reason and a catalyst at the first phases of the design process. To create a solution to the set problem statement, I created test surroundings to let people experience the process. By using real life examples (topic the company can relate to) I connected experiences to strategy. An example of this is using company information (in the form of a real innovation project) in testing the ideation process concept.

Decision making is supported with visualisation techniques to make reflection on outcomes easier and to spark discussion in an open and reflective way.

DESIGNER AS FACILITATOR

I brought together different stakeholders to collaboration in a creative way throughout the project by using design tools and methods to engage and inspire participants in creative thinking. Stakeholders are incorporated in designing, testing and reflection to spark dialogue and make sure the solution is connected to the end users, the WAB team.

To make the research phase of this project more vivid for the stakeholders, I wrote blogs about my findings in a informal way to translate the academic research to the language of the stakeholders. These blogs can be found in appendix 9.

2.2 Discover

During the discovery phase the goal is to understand the context of WAB and literature within the frame of the assignment. Without a set hypothesis the context of the topic is explored to identify topics of interest and relevant problems to solve. To reach this understanding, multiple ways of research are used.

First, literature analysis is executed to understand the bigger picture of both design and innovation separately and combined. The literature research concluded with three main findings and a visualization of the combined design process that functions as the design process blueprint lateron.

Secondly, an internal analysis is executed. Context understanding is done via semi-structured interviews, internal document analysis and creative sessions with the WAB team and observations. This is done to understand the company structure.

To better understand the process of startup creation at WAB, a multi-case process analysis involving six WAB startups is conducted via internal document review and process mapping. The methodology to execute the multi-case analysis is based on Eisenhardt (1989) recommendations for case-study research where multiple data collection methods are combined and analysed to discover cross-case patterns. I choose this method to force myself to look beyond my first impression and own knowledge.

To focus on the current ideation strategy of WAB, one of the cases is analysed in-depth to create a deep understanding of the actions WAB takes in early phases of innovation.

The internal analysis will conclude with a detailed overview of the WAB startup creating process focussed on ideation and three interesting design directions.

After the internal research, external research formed the basis to create a blueprint for venture building. This is done by a competitor analysis and concludes with a detailed process overview and three important learnings. Concluding discovery, the WAB innovation

process, venture builder process and design process will be compared to see where they can add value to each other. This will result in three opportunity areas for addition of design to create added value.

2.2.1. Discovery data collection

LITERATURE RESEARCH

Literature research was conducted before and after company analysis. Before company analysis was conducted, literature research was done with the goal to create a complete understanding of the impact of design, the value of design for innovation, and startup risk and success factors. The literature research generated an understanding of the innovation landscape and the values of design. The insights helped in the process of conducting the company analysis in a structured way.

After the company analysis, a second round of literature research was conducted to gain deeper knowledge on the topic of self bias, entrepreneurial gut feeling and opportunity identifying and exploiting. This in depth understanding of the academic context and research site formed the basis for defining a problem statement and design challenge in the next phase.

COMPANY MATERIAL (SECONDARY DATA)

Company materials including startup and studio documentation, blogs written by WAB, pitch and slide decks of earlier projects and digital conversations between WAB employees and externals were analysed. Reviewing this data is done with the purpose to create a better understanding of WAB and their startup building process.

INFORMAL CONVERSATION AND OBSERVATIONS

In a period of 5 months I worked for 3 days a week at the WAB office. This allowed me to get to know the WAB culture and way of working from an insider perspective. Not only working together but also informal interferences allowed me to base decisions on not only data but also on my designer and emotional gut feeling. The data was reported in notebook notes.

MULTI-CASE STUDY

As case study material, the process of six earlier launched startups has been analysed by asking the WAB team to write down in bullet points what steps they took in launching a startup. Afterwards the WAB team members involved in the creation of those startups were asked to together fill in the interviewee, the Scoping Canvas (Board of Innovation, n.d.) to frame the activities per startup. The Scoping Canvas formed the frame of reporting the process of the specific startup.

This analysis focused on creating an understanding of the companies' activities, early innovation approaches, and mistakes and successes of past activities.

SINGLE-CASE STUDY

To create a deeper understanding of the ideation process of WAB, I zoomed in on the research documentation of one WAB startup, Obeyo, to create a detailed overview of how early phases of innovation. I've only analysed one case in depth because no more research documentation is available at WAB.

FORMAL INTERVIEWS (PRIMARY DATA)

Where the analysis of company material and informal conversations and observations formed an overall understanding of the topic and research site, formal interviews formed the

basis of more in depth knowledge. Interviews were conducted with internal and external participants (Table 1). Internal interviews focussed on WAB values and processes.

External interviews were conducted with sector or skill expert to create a better understanding of how design is applied in different industries. External interviews also create a better overview of innovative manners and pitfalls concerning how design is applied in non-design settings. The data was collected via recording, transcribing and clustering insights.

CREATIVE SESSIONS

Creative sessions were initiated and executed at different moments during the project. The overarching goal of every creative session was to let WAB experience a different way of working or thinking and apply a learn by doing approach of pursuing a goal while executing. This provided me with the opportunity to reflect on the design approach. With this method, raw data (completed canvasses, drawings and post-its) were gathered to analyse the effectiveness of a specific way of applying design.

Interviewee	Method	Goal	Transcript?
Influentials CEO	Formal interview	Understand how explorative phases at WAB are executed and experience	Appendix C2
Strategic designer in an innovation context	Formal interview	What are experiences from designers in innovative settings?	Appendix C3
Service designer in a software development context	Formal interview	What are experiences from designers in software development settings?	Appendix C4

Table 1 - interview overview

2.3 Define

Based on the conclusions of the internal analysis, external analysis, literature research and designer gut feeling, the design challenge and value of the future product or service are defined. Conclusions were drawn by comparing

2.4 Develop

The develop stage consists of three design loops that together build up to the final test. The final tests' purpose was to test the proposed solution framework where the final design is based on.

The design phase consists of three design iterations and one concept test. The first two design loops focussed on problem statement creation and the 'why' of research. After these design loops, the design challenge was reframed towards creating an empathizing research strategy instead of a spark to MVP full ideation strategy. This switch was made because of new gained insights about the first phases of innovation at We Are Builders. To test if empathizing was the right direction to focus on, the third design loop focussed on empathizing in a design thinking manner. This design loop resulted in a pivot of the design direction from idea generation and problem definition towards explorative research, because the original design thinking process in combination with focusing on empathizing did not fulfill the set goals.

Also, every design loop session was recorded and transcribed. Transcripts were translated to statement cards (Sanders and Stappers 2012), which were clustered to create more generic insights of the sessions (appendix C11, C12, C13 and C14). The insights from the three design loops formed the basis of the concept solution framework, tested during the conceptualization phase

During all design loops, tests were executed at WAB and with external designers. This to test if the (partial) solution works for all internal stakeholders, and to get design advice on where additions might be relevant for strategy success.

2.4.1. Action research

the main insights from the three parts of the discovery phase. These parts of research are concluded in a process overview, supported by the three main insights of the discovery phase.

Action research and particular the principles of a Design Innovation Catalyst (Wrigley 2016) are used to create practical knowledge of the possible ways of applications of design and how these do or don't, and in what way, add value to startup studio processes. As described by Wrigley (2016), a Design Innovation Catalyst coaches the use of design methods and skills to non-designers. Also, a Design Innovation Catalyst works with employees and stakeholders on projects directly while simultaneously improving strategy or processes. This allows the researcher to switch between business and design and translate research into practice to test what creates added value to the company.

For this research this means that while researching materials, conducting interviews and analysing literature, I participated as a designer and researcher in the pre-startup phases of the new startup WAB is launching together with the WAB researcher, who functioned as a 'design champion' throughout this project. A design champion is a team member who is a design enthusiast and a well appreciated team member to create enthusiasm about the new process at the team. This insight was gathered during the external research.

The goal of my participative role was to directly apply design knowledge to the process of WAB and educate the team about design as a way of thinking and doing. To achieve this direct application of design I participated as a researcher in the process of research to the new WAB startup, Obeyo. Together with the WAB researcher we hosted two creative sessions (appendix C6) to let the WAB experience creativity.

This approach of directly transferring design

knowledge was experienced as pleasant for the team and for me because it showed how design can be useful and how it can be linked to the way of working of WAB.

Because there is currently not a process put on paper, the team was open to combine old and new techniques to create a unique ideation process in a collaborative manner. Action research also gave me the opportunity to learn from the participants and ask questions during the process and therefore integrate design instead of imposing design to a company process (Bradbury, 2015).

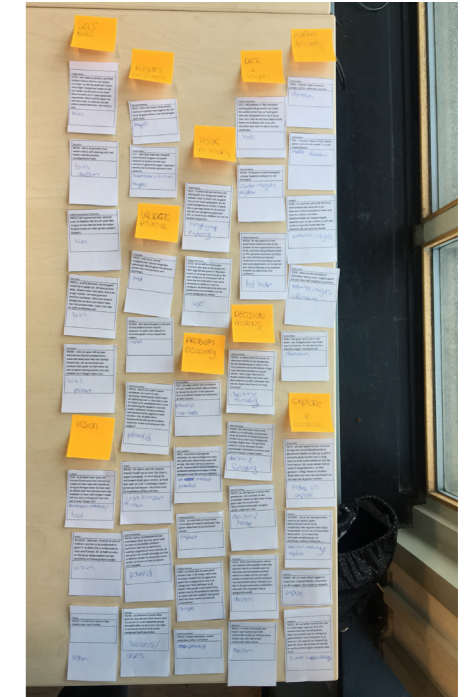


Figure 6 – Clustering insight cards

2.5. Deliver

The deliver phase focussed on creating the final product and building plan. The solution was tested to validate if the design challenge is met, taking into account the desirability, feasibility and viability of the solution (Calabretta, Gemser & Karpen, 2016). Desirability has been tested by creating a prototype of the final solution and evaluate this with WAB team, who are the

end-users of the solution. The feasibility of the solution has been evaluated with the WAB venture manager to see if the product can be built. Viability of the solution has been evaluated by using the framework for a real ideation session (appendix C14 and C15)

Discover

In this chapter, the research site, research context and bigger picture of the project are explored in a divergent manner. The goal of this chapter is to set the ground to define a clear and concise design statement. To achieve this grounding, literature research on innovation and design was done to create a theoretical framework for design in an innovative surrounding. Internal and external research was executed to create a comprehensive understanding of the context of the project and to link theory to practice in a grounded manner to be able to define a design goal for this project.

3. Literature analysis

Literature analysis will touch upon the fields of innovation and design in multiple ways. First, the value of design will be analysed in a business context with the goal of creating design process blueprint. Afterwards, innovation literature will form the basis for context understanding to be able to link the project to a broader innovation context. Lastly, research about design in innovation and digital surroundings will conclude the chapter and will help to create a design approach that fits the context of this project.

3.1. Value of design

In the book Change by Design by Tim Brown (2009) an indepth understanding of how design changed from product development to being a process to achieve change is described. In history, design made an already developed idea more attractive, a tactical role where design builds on what exists and takes it one step further. During the economic shift from industrial manufacturing to knowledge sharing and service delivery, the role of design became more strategic. The shift pulls design out of the studio and unleashes its disruptive, game-changing potential in the field of business and entrepreneurship in the form of design thinking.

Design thinking is both a way of thinking and a way of doing. As a mindset, design thinking allows people to explore customer-centric insights, needs and problems through abductive thinking and inductive qualitative research methods (Pinder, n.d.). As a process, design thinking is an iterative design process that incorporates user-centered research, problem definition, ideation, exploration, prototyping and testing (Brown and Katz, 2011).

The distinctive aspects of the design thinking process are its central focus on customer needs and its collaborative activities (Brown and

Wyatt 2010; Adams et al. 2011). Design focuses on 'humanizing' innovation through consumer insights (Brown and Wyatt 2010). Therefore, combining design and innovation gets to the heart of what is meaningful to people. To achieve this goal, deep user insights are needed (Bucolo, Wrigley, Matthews, 2012, Verganti, 2008).

Identifying deep user needs and customers aspirations will help defining the to be solved problem. Deep user needs are described by Sanders and Stappers (2012) as tacit and latent user needs, the needs that are not observable but request more generative research techniques to uncover (figure 7). Based on analysis and deep insights (Hekkert & van Dijk 2011), a solid base is created for the project. Translating the identification and framing of latent user needs to a human-centered problem definition is key for design innovation (van der Bijl-Brouwer, Dorst, 2017, Price, Wrigley, Matthews, 2017). To discover deep customer insights and create a clear problem definition, the process of sense making (Dervin 1998) is used in design. The goal of sense making is to find out what users - audiences, customer, patients, clients, patrons, employees - 'really' think, feel, want, dream. The outcome contributes to a platform for prediction for further product development.

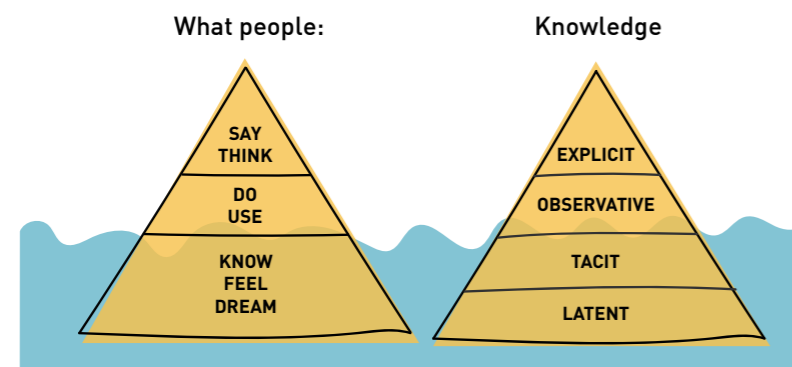


Figure 7 – Deep user insights

DESIGN FOR BUSINESS

Design can be defined as the process of creating inventions that change existing situations with products, services, procedures, strategies and policies. These inventions are designed by combining synthesis and analysis. In practice this results in the combination of generative research (research for inspiration) with evaluative research (research for information) (Tan, 2010). Design offers a systematic and user centered approach to exploiting opportunities through a collaborative approach (Moggridge and Atkinson 2007). The ultimate aim of design is to ensure solutions stay focused on meeting identified goals (Kenna, 2018). This makes design a process to create renewal and therefore becoming strategically important for business (Brown and Katz 2011; Dell’Era, Marchesi and Verganti 2010).

HOLISTIC

Next to creating deep user understanding, design brings together what a user needs, wants and desires, with what is technically feasible and economically viable (Brown and Katz 2011; Wolbling et al. 2012), and bring these criteria for successful ideas into balance (figure 8). Design doesn't start with the constraint of what fits within the existing business model regarding these criteria, but embraces constraints and allows to explore future possibilities. A designer therefore adds empathy and the ability to diverge and converge to a process (Design Council, 2005).

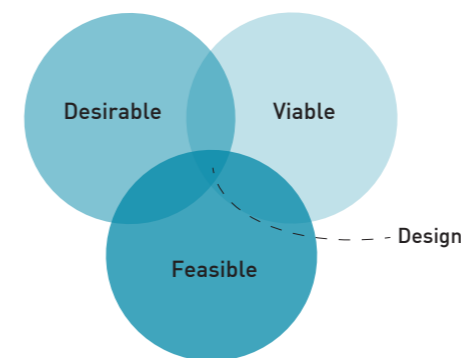


Figure 8 – Holistic design approach

CO-CREATION

The collaborative activities of design (Brown and Wyatt 2010) can be defined as co-creation. Design involves cross functional teams, which involve co-creation where needed (Garcia 2008). This collaborative process helps designers to ensure that a problem is examined from multiple

perspectives, to identify different directions and evaluate with customers (Brown 2009). Madjar, Oldham, and Pratt (2002) demonstrate that interactions with others from diverse backgrounds improves the creativity of individual responses.

To get the most value out of co-creative activities, Price and Kleinsmann (2018) address that knowledge of the design process at the client or team enables designers to generate deep insights from the client that could be reframed into design opportunities. This enlarges the opportunity of revealing hidden constraints.

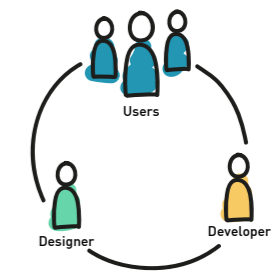


Figure 9 – Co-creation

DESIGN PROCESSES

Examples of (design) processes containing deep user insights are ViP (Hekkert and van Dijk, 2011), the Golden Circle of Sinek (2009) and the Needs and Aspirations for application in a Design and Innovation process (NADI) model (van der Bijl-Brouwer, Dorst, 2014) (figure 10) and the design thinking process described by Vianna et al. (2012) (figure 11). The NADI model combines design and innovation and will therefore be discussed in more detail. In comparison to the Simon Sinek model, the NADI model distinguishes two levels of 'why' that makes the model both applicable for design and innovation. The model is not a stand alone process, but can be used in combination with design methods to identify and create deep human insights (Bijl, Brouwer, Dorst, 2017).

The design thinking process of Vianna et al. (2012) combines design research with practical implications. This makes using these process outlines, in combination with the other discussed design processes a clear basis for process comparison concluding the discover phase.

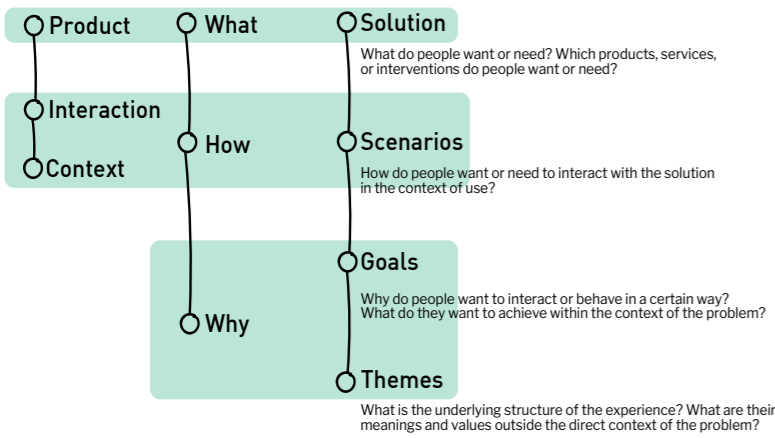


Figure 11 — Deep user understanding processes

3.1.1. Concluding value of design

To recap the value of each step of the design process, the detailed design thinking process defined by Vianna et al. (2012) and the findings of the design literature review (figure 12) are used as a design thinking blueprint throughout this project. The Vianna et al. model is chosen based on the direct linkage of theory and practice. Combined with the above design research, it forms the basis for this project's design practice.

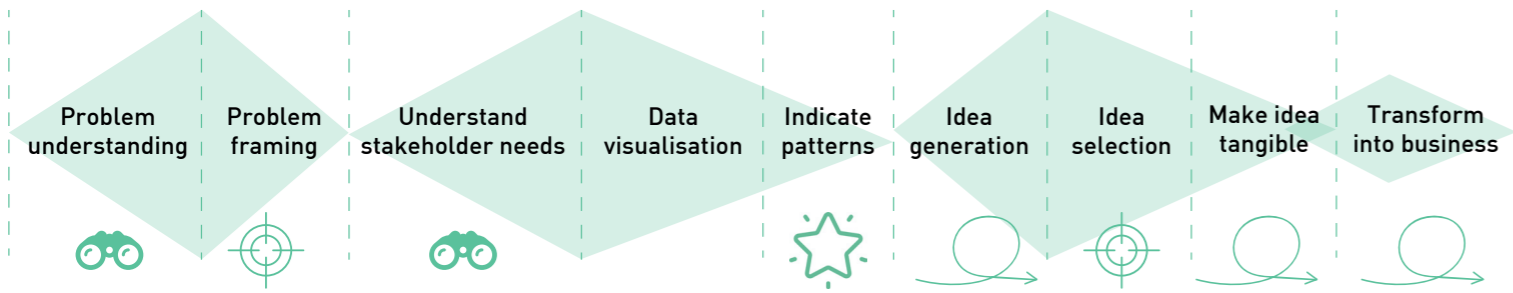


Figure 10 — Design process overview

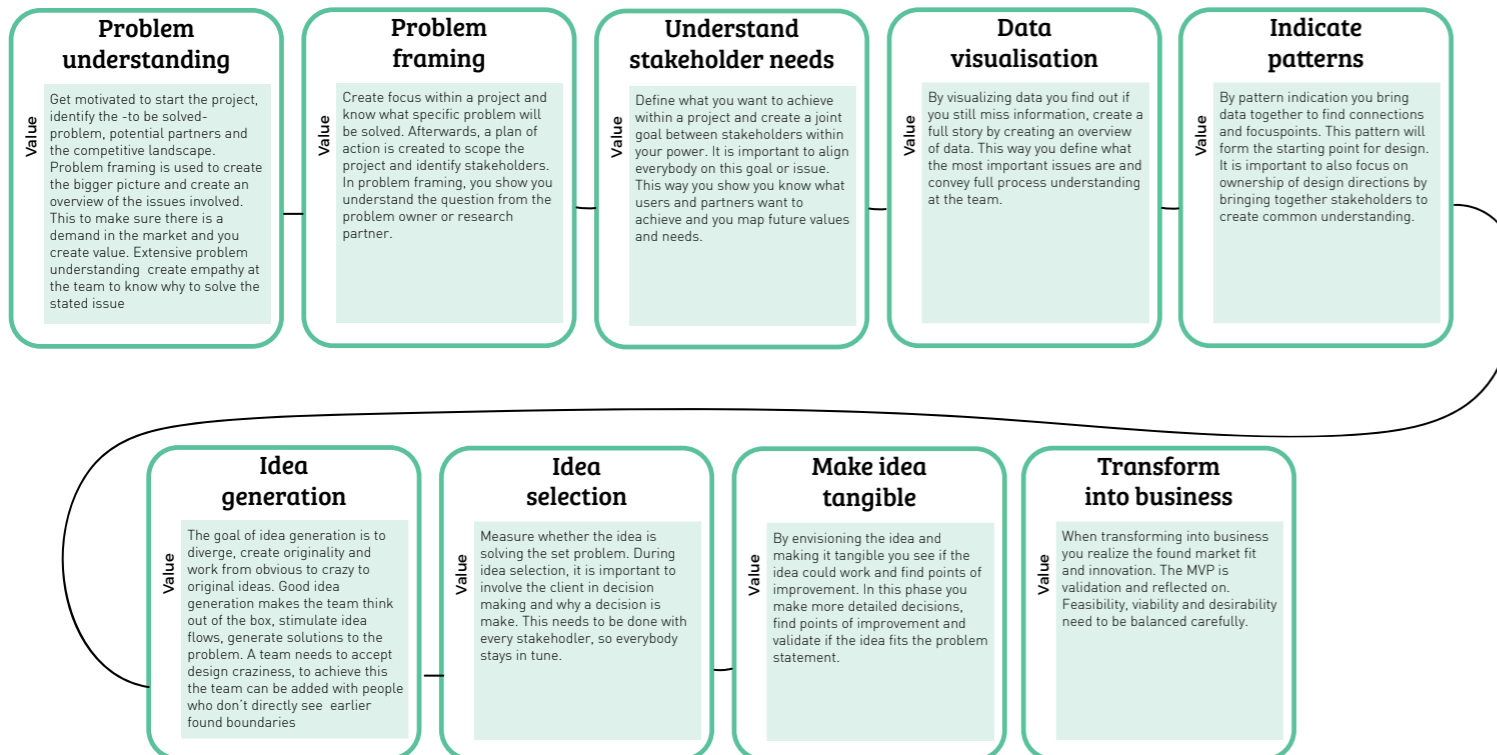


Figure 12 — Design process values

3.2. Innovation

The process of innovation is one of renewal via utilizing and advance technologies, resulting in new product or services with value for user and company (Bessant, Lamming, Noke, Phillips 2005). In a world where the only constant is change, innovation is vital to sustain and advance business and to growing new businesses. As described by Chesbrough (2005), the innovation context changed from Closed (internal focussed innovation) to Open (external focussed innovation) and therefore the innovation process changed as well to a more cooperative and explorative process to create future value. Open innovation is described as:

“Open Innovation combines internal and external ideas into architectures and systems whose requirements are defined by a business model. The business model utilizes both external and internal ideas to create value, while defining internal mechanisms to claim some portion of that value”
 (Chesbrough, 2005, p2.)

An innovation process can be split into three phases (Koen et al 2001). First the right problems are uncovered, ways to solve them are proposed. Once validated through experimentation, a solution scales up. These three phases overlap with the research of Kleinsmann and Valkenburg (2017) where they split the innovation process in opportunity identification, analysis, idea generation, idea selection, concept and technology development.

Next to being a process, an innovation is also the outcome when the creation of new products and services delivers value to customers, in a manner that is supported by a sustainable and profitable business model (Bason, 2010). The innovation delivers commercial or customer value when the solution is implemented, which requires a product, service, and organization and system (Osterwalder and Pigneur 2010).

Therefore, innovation implies the process of solution creation and the creation of business models, solutions and strategies (Dorst, 2015).

ENTREPRENEURSHIP

Where innovation focuses on the process of creation, 'entrepreneurship' involves the person who is creating businesses. Entrepreneurship is the process of creation, change and vision in a dynamic context (Drucker, 2014). Creative solutions and new ideas are created and implemented by energy and passion of the entrepreneur. Crucial elements are the willingness to take deliberate risks, the formulation of an effective team, setting the necessary resources, building a decent business plan, and having a clear vision with an ability to recognize opportunities (Kuratko, 2009).

STARTUP

A startup is a temporary organization whose goal is to search for a sustainable and profitable business model and innovations, and build a new company at the same time (Viki, Toma and Gons, 2017). Searching is managed using startup methodologies such as design thinking, customer development and experimentation. Building is done by the search of funding, growth of the team, and production of the product or service.

As Eric Ries (2011) stated:

“A startup is a human institution designed to create a new product or service under conditions of extreme uncertainty (Ries, 2011, p8).”

Because of the unobvious solution space and extreme uncertainty, not all startups grow into self sufficient companies (Ries 2011, CBinsights 2018).

3.2.1 Innovation success and risk factors

There is not a general agreement in academia on how to define startup success (Hultink 1997). Is it the introduction to a market? Reaching the forecasted market share? Profit the product is making? To get an understanding of the diversity of reasons why startups succeed or fail, startup success and risk literature was analysed. This analysis is focussed on pre-startup phases because of this research' scope. Success and risk factors are divided according to Gartner's framework for new venture creation (1985) by person, organization, process and surroundings and will be discussed separately.

Person

Successful entrepreneurs are prone to cognitive biases, this enables them to take (unseen) risks (Simon 2000), they have higher perceived self-efficacy (Chen, 1998). Successful entrepreneurs have broad business experience, a clear and broad business ideas and seek risk reducers throughout the process. They are motivated by perceived market need, lack of alternatives in a market or motivation by challenges (Duchesneau, 1990). These qualities make successful entrepreneurs different from less successful entrepreneurs.

Organization

The organization behind a startup needs to be flexible, participative and adaptive to the context of the solution (Duchesneau, 1990). Successful companies have a convincing and coherent strategic concept, are customer oriented, ambitious, build on earlier results and have a strong network (van Gelderen, Thurik, Bosma 2005). What 'success' for a specific project incorporates, must be defined by the involved stakeholders (Buijs, 2012).

Process

A successful startup starts with ambitious goals (Duchesneau 1990). A breakthrough innovation is a creative solution to a found problem including a strategy on how to re-design the systems and context around that innovation (Kleinsmann, Buijs, Valkenburg, 2010). This asks for a process that delivers deep context understanding (Nussbaum 2013). Successful transformation of a startup out of pre startup phases is pushed by: industry experience, less risk perceiving, full-time commitment, small start capital, exposure to guidance from professionals and experienced people in the sector (van Gelderen, Thurik, Bosma 2005).

Surrounding

Successful entrepreneurs keep checking with the industry, customer and suppliers to make sure the product is still fitting the market. They have a diverse network of strong ties as a source of opportunities and resources (Aldrich, 1999). Chances of success are increased by making use of information and guidance in pre startup phases (van Gelderen, Thurik, Bosma, 2005). This information sharing and guidance is structured in incubation models that increase startup chances of success (Pauwels, 2016)

3.3. Strategy in innovation

In this process of innovation, strategy is an important aspect. Innovation strategy can be characterized by: bold, directive, opportunity-seeking, experimentation and risk-taking (Dess et al., 1997). According to Gavetti (2007) strategic decision making is crucial to long-term competitiveness and organizational actions. Entrepreneurial strategy is directed by the startups' vision direction (Mintzberg, 1973).

PROJECT FRAMING AND VISIONING

Only identifying deep user needs will not directly lead to successful innovation. This asks for problem framing and visioning (Hekkert and van Dijk 2011). To create a clear project frame, Maniak and Midler (2014) set up three criteria: 1) have a clear concept, 2) use design rules and formalize specific development routines, 3) create ambitious technological roadmaps for future expansion. To frame a problem future vision, the creation of empathy towards end-users can be achieved through immersion (Sanders and Stappers 2008).

To make sure the project has a clear focus throughout the process, visioning is essential. The innovation team needs to have the ability to be ambidextrous and balance short term profit with long term success. It needs to realize today and at the same time explore tomorrow (Maniak Midler 2014).

3.4. Design innovation

DESIGN LED INNOVATION

Design has gained interest as an approach to tackle innovation challenges and as a way to gain competitive advantage (Verganti 2008). This is addressed in the theory of Design Led Innovation (Bucolo, Matthews 2011). Design Led Innovation (DLI) is a process of creating a sustainable competitive advantage, by radically changing the customer value proposition from multiple perspectives. DLI is proposed to achieve radical innovations from new users through push of user needs, technology developments and firm vision. This is done by linking the product - or service interaction to the business model and brand value of the company, as well as the latent needs of consumers and understanding of pre -, during -, and post experience (Bucolo, Matthews, 2011).

Key phases of the DLI framework are:

- Gathering deep user insights from customer and stakeholders
- Propose a future oriented solution that captures the value delivered for these customers and stakeholders
- Shape strategy that leverages the value delivery by the future solution

In the DLI process, knowledge is created through action, whereby past and present experiences are guiding future solutions (Price, Wrigley, Matthews 2018) by creating deep insights. The insights form the basis for future predictions. The set of created predictions for the basis form decision making on future values and therefore create foresight. Concluding, the DLI framework supports the translation from knowledge, to insight, to prediction to eventually foresight on future value. Solutions that are created according to the DLI framework are integrated, anticipated to future user needs and encourage feedback (Bucolo et al. 2012).

In the DLI process, designers are referred to as Design Innovation Catalysts (DIC) that operate between research and reality. Therefore DIC are able to translate design research into business, and business insights into design problems (Price and Straker 2017). DIC have design knowledge and skills, understand business,

have cognitive abilities and are customer and stakeholder centric. The DIC bridges research and practice and moves between teaching and learning (Wrigley 2016) with the goal to build design capacity within an organisation. The data driven approach to value creation and reliance on self-referential knowledge within organisations counteract hypothesis testing process with consumers and users that design follows (Bastiaansen, Price, Govers, Machielsen 2017). To prevent this, developing design capacity is done by actively engaging the employees in design exercises (Wriley 2016).

DELFT INNOVATION METHOD

The combination of innovation and design is also reflected in the Delft Innovation Method by Buijs (2012) (figure 13). He organized the innovation process in stages that vary, where understanding of the innovation context (users, buyers, customers and competitors) plays an important role. To apply this innovation method, Buijs states that not only a method is needed to successfully innovate, also facilitative leadership, multidisciplinary teams, creativity and external orientation is needed.

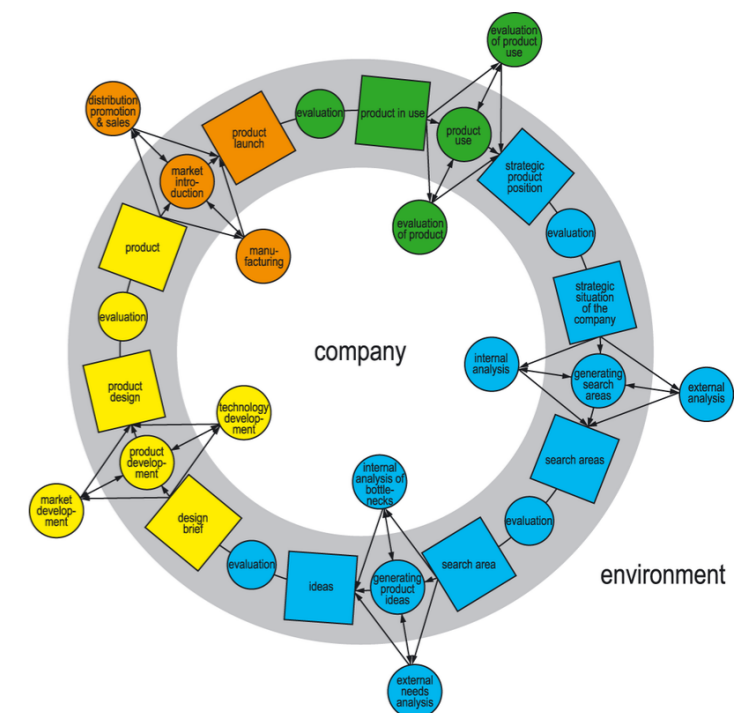


Figure 13 — Delft Innovation Method

3.5. Design to mitigate self bias

As discussed by Chen (1998) entrepreneurs are prone towards self-bias. Liedtka (2014) described how design thinking can reduce cognitive bias, and enhance success, in innovation contexts. She summarizes reducing bias by design thinking in three categories and methods:

The first form of bias can be described as: *“decision-makers’ inability to see beyond themselves and their own experiences, current state, personal preferences, and the tendency to be influenced by specific factors.”* Design mitigates this bias by emerging stakeholders in the context of end users and providing data about user wishes and improving the ability of stakeholders to imagine and visualise by using metaphors in the thinking process.

The second form of bias is defined as *“the inability of users or customers to articulate future needs and provide feedback on new ideas, making it difficult to develop value creating ideas for them.”* Design thinking assists customers to create a more accurate description of their experiences, which helps to surface unarticulated needs. This is done by tools such as journey mapping or prototyping.

The third flaw is the decision-makers’ inability to test the hypotheses they have developed themselves. Entrepreneurs can be unimaginative, overly optimistic, and drawn towards initial and preferred solutions. Design thinking emphasis on prototyping to create more vivid test experiences and can identify assumptions.

3.6. Design innovation in digital surroundings

To uncover how design behaves in digital surroundings, as this is also the case of this research site, traditional software methods are elaborated on first. Afterwards, the value of including design principles in software development is discussed to understand how the design process adjusts withing software surroundings and adds value to this context.

In software development, methods and models are conventional and made for operation. An example of such method is the inflexible waterfall model where a development team works in a linear and structured way towards the end deliverable (Huo Verner Zhu Babar 2004). In the waterfall model, users are not actively involved in development and are seen as a source of feedback after product purchase. Traditional development teams have similar professional backgrounds and share professional experiences. This traditional method shifted to a more iterative method with the introduction of Agile development.

Agile methods deal with uncertainties by short iterations and early releases and see speed as a mean towards creating value, since speed allows frequent customer feedback (Schwaber Beedle 2002). A software development team becomes development-led once running well, making the team members involved in user research feel less relevant (Munoz, Helander, de Gooijer and Ralph 2016). Collaborations in digital innovations are diverse and complex because of the large amount of collaborations between parties (Calabretta and Kleinsmann 2017). The introduction of design thinking in software development enriches software development teams with a structured way of creative problem solving (Wölbling et al 2012) and enabling end-user centered innovation (Lindberg et al. 2011).

3.7 Concluding literature analysis



Design has a central focus on customer needs and collaborative activities (Brown and Wyatt 2010; Adams et al. 2011). Design focuses on humanizing innovation through deep customer insights (Brown and Wyatt 2010). Deep user needs are tacit and latent needs that request generative research techniques to uncover (Sanders and Stappers 2012).

A breakthrough innovation is a creative solution to a found problem including a deep understanding of the context of the innovation and how to design for that context (Kleinsmann, Buijs, Valkenburg 2010). This asks for an exploration process that delivers deep context understanding (Nussbaum 2013). Translating latent user needs and deep context understand to a user-centered problem definition is key for creating innovation using design (van der Bijl-Brouwer, Dorst 2017; Price Wrigley, Matthews 2017).



Innovation is risky. When innovation focusses to be open innovation, it is a cooperative and explorative process to create future value (Chesbrough 2005). A startup success factor is a flexible, participative and adaptive organizational structure with ambitious goals (Duchesneau 1990). Entrepreneurs are prone towards self-bias during the innovation process (Chen 1998). That bias is reduced when using design by emerging stakeholders in the process, create an accurate description of user needs and the emphasis on prototyping to identify assumptions (Liedtka 2014).



An important success factor within innovation is strategy. Strategic decision making is crucial to long-term competitiveness and organizational actions (Gavetti 2007). When combining understanding of deep user needs with problem framing and visioning, the startup success rate will rise (Hekkert and van Dijk 2011). As Buijs (2012) states not only a method is needed to successfully innovate, this also asks for facilitative leadership, creativity and external orientation. Design uses the process of sense making and therefore has the ability to create a basis for future prediction. To ensure that problem definitions are examined from multiple perspectives, multiple stakeholders need to be involved in creating a problem definition -co-creation (Garcia 2008)- and the problem definition must be evaluated with users and other stakeholders (Brown 2009).

4. Internal analysis

The internal analysis is structured as follows: first a description of the different roles is given, then the product category and company structure is presented. The company value are discussed by the formation of a positioning statement and company identity. Concluding the internal analysis, the startup building process and the current ideation process specifically are analysed by document research and interviews. The chapter concludes with possible design opportunities.

4.1. What - startup product category

We Are Builders (WAB) is a startup studio with the goal of combining software developing and entrepreneurial experience to build new companies together with entrepreneurs. With a background in software engineering and platform development, **WAB focusses on tech opportunities within the scope of Software as a Service (SaaS) and business to business (B2B) software.** An example of a startup is Obeyo, shown in figure 14.

Obeyo's mission is to support the resident of the future in ease of living. This is done by bringing technology and hospitality together to make a house come to life. By using Obeyo, people get to spend more time doing the things they like to do.

Obeyo is a solution for residents of serviced apartments. All home services and smart home devices are managed via the digital Obeyo platform. This makes it easy to get the most out of the available home services. Obeyo is also the solution for property managers by collecting data to improve the ease of living of residents.



**Living as-a-service.
De toekomst van wonen.**

Voor optimaal woongeluk.

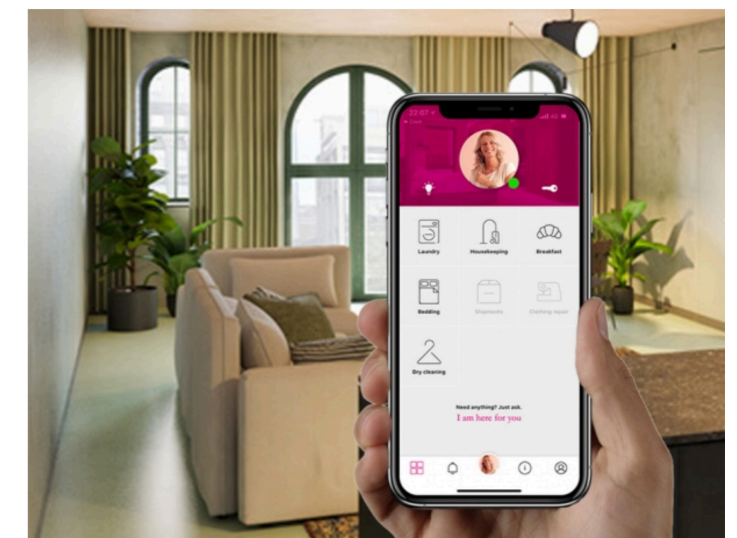
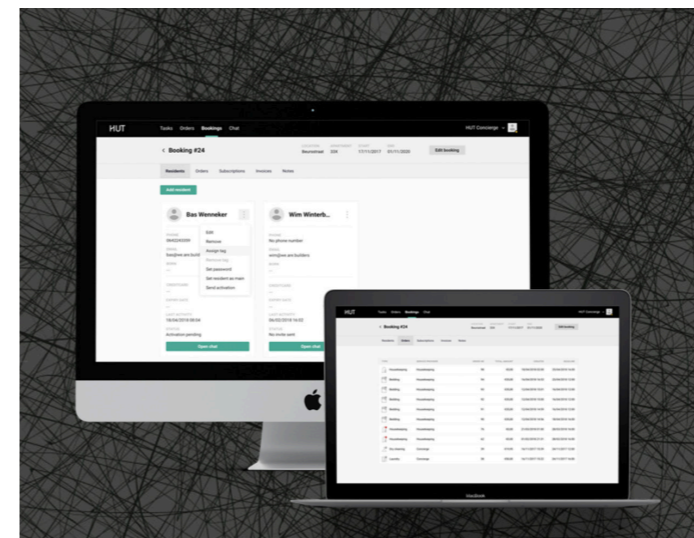
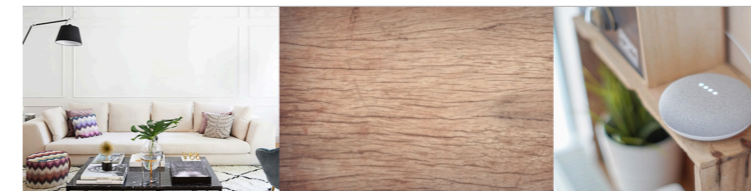


Figure 14 – Obeyo

4.2. Why - WAB values

WAB is launched to create a place to share knowledge between entrepreneurs and create a unique place for entrepreneurs to become the best entrepreneur possible. This means that WAB is a place to share knowledge and help young entrepreneurs with gaining experience and grow as an entrepreneur. Together with idea generators, investors, and startup founders, WAB wants to transform unique ideas into independent tech companies and build a future impact. WAB wants to make software that simplifies life and therefore has impact on end users' daily life (WAB CEO interview).

To capture the value and goal of WAB, and to get a better understanding of a why WAB wants to strategize their ideation process, a creative branding session based on the Brand DNA model by R. van der Vorst (van der Vorst, Brand and Product Commercialization Lecture Slides, 2017) is executed (appendix 4). This model is chosen since it gives a visual and clear view on company goals and attitude. This model forms a company DNA based on the company's positioning statement, personality, and purpose. These aspects of the company were not defined before. This made it hard for the researcher to understand the company's behaviour and future goal. The WAB CEO, CTO and venture manager joined this session and formed the input for the following positioning statement:

“For Entrepreneurs We Are Builders offers a startup studio model that co-founds new ideas, supported by the core team, and empowers stakeholders to be a hero”

To support the companies positioning statement, the 'golden circle' introduced by Simon Sinek (Sinek, 2009) is used (figure 15). In Sinek's model, he makes a distinction between three aspects. The first is the 'why'. The why is an abstract level explanation of a company's existence. The second part is the 'how'. Through the 'how' a company can explain their plan that ensures the 'why' is met. Finally, the third part explains what the company offers by describing, in less abstract terms, 'what' it does.

During the branding session, the participants discussed who their end users are: entrepreneurs, or end users of the software they create? This can be referred back to the software engineering background of the WAB employees and the fact that the startup studio is also a new company structure for them. The positioning statement and the company identity gave insight in what WAB defines as their core identity and what they want to deliver to their employees, their stakeholders and to the world. With this in mind, analysis and design is pursued.

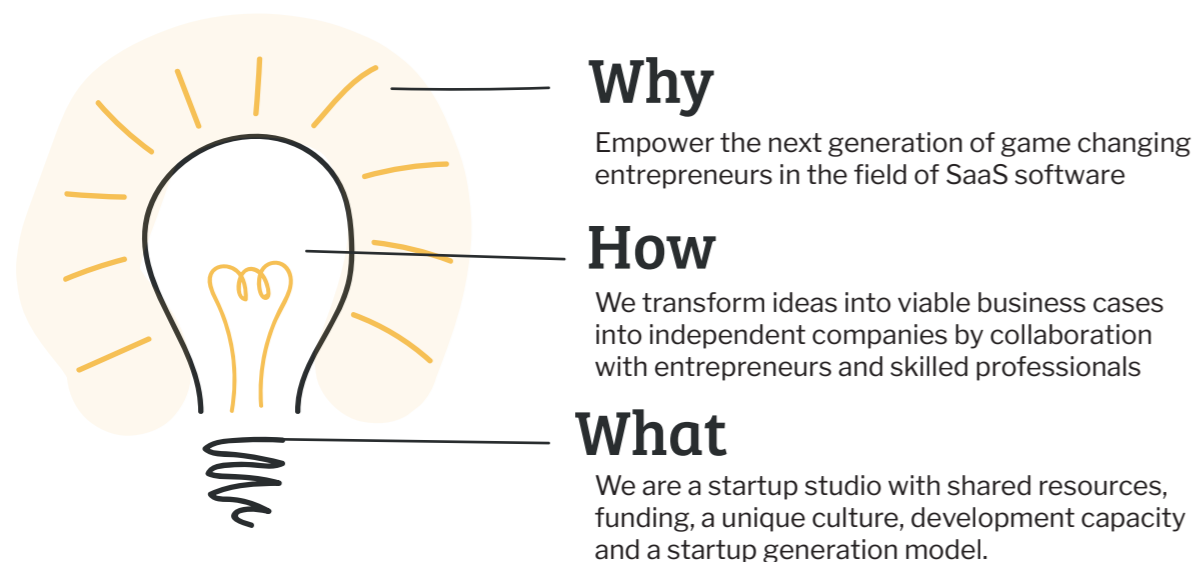


Figure 15 — WAB golden circle

4.3. Who - people and responsibilities

The team of WAB can be divided into the core team and co-founders, these will be discussed separately. It is important to make this division because the stakeholders have different priorities and values. This information has been gathered through interviews with employees (4 interviews) and a startup founder (1 interview).

4.1.1. WAB core team

The WAB core team is a composition of professionals in software development (2 people), design (graphic/UX/UI) (1 person), researching (1 person), marketing and growth (1 person), financial control (1 person), venture manager (1 person) and management (1 person) (figure 10).

The core team has years of experience in software building, entrepreneurship, launching startups and growing companies. The main goal of the WAB core team is the support of the development of startups for optimal growth. The core team validates ideas, advises on strategic decisions, predict cash flows and, monitors and advises on financial metrics.

The core team supports the startup team with market research, prototyping and building of concepts and products, and minimizes the uncertainties startups face. The support also includes knowledge of venture team compositions, venture needs in pre-startup phases, and recruitment of startup teams. This

makes a studio a safe place for entrepreneurs to launch a startup.

4.1.2. Business and technical co-founder

In the WAB studio playbook the startup founding core team is described as a composition of a technical co-founder, a business co-founder and a stakeholder from the WAB core-team (WAB breakout slide deck, 2018) No startup has launched yet with this structure. The structure and vision behind this composition is based on research and experience of WAB in the entrepreneurial sector. The validation of this startup founding structure is outside of the scope of this graduation. Therefore the startup founding team will be used as a given during this graduation.

WAB states an ideal founder is an experienced entrepreneur and forerunner in a specific sector. To get an insight in how a founder experiences being part of a startup studio, a founder is interviewed (appendix C2). According to this interview and my observations at the company, it is important that founders get thoughtfully matched on business and emotional levels. The technical co-founder is responsible for software development, the technical roadmap and guiding and leading the future technological team (software development and support). The business co-founder is responsible for marketing, sales and operational leadership of the startup.

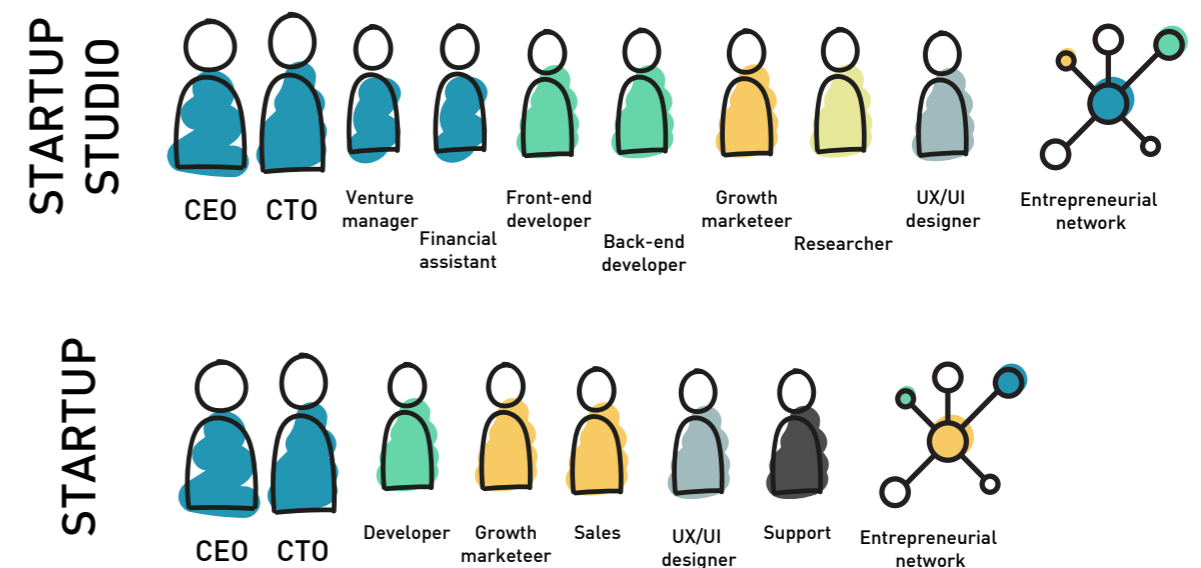


Figure 16 — We Are Builders employees

4.4. How - Way of working

Until now, WAB did not execute the process of startup creation as been described in the venture playbook. WAB made an overview of how startups are launched at the WAB. The process takes on average 24 months. An overview of the different phases within these 24 months is shown in figure 17.

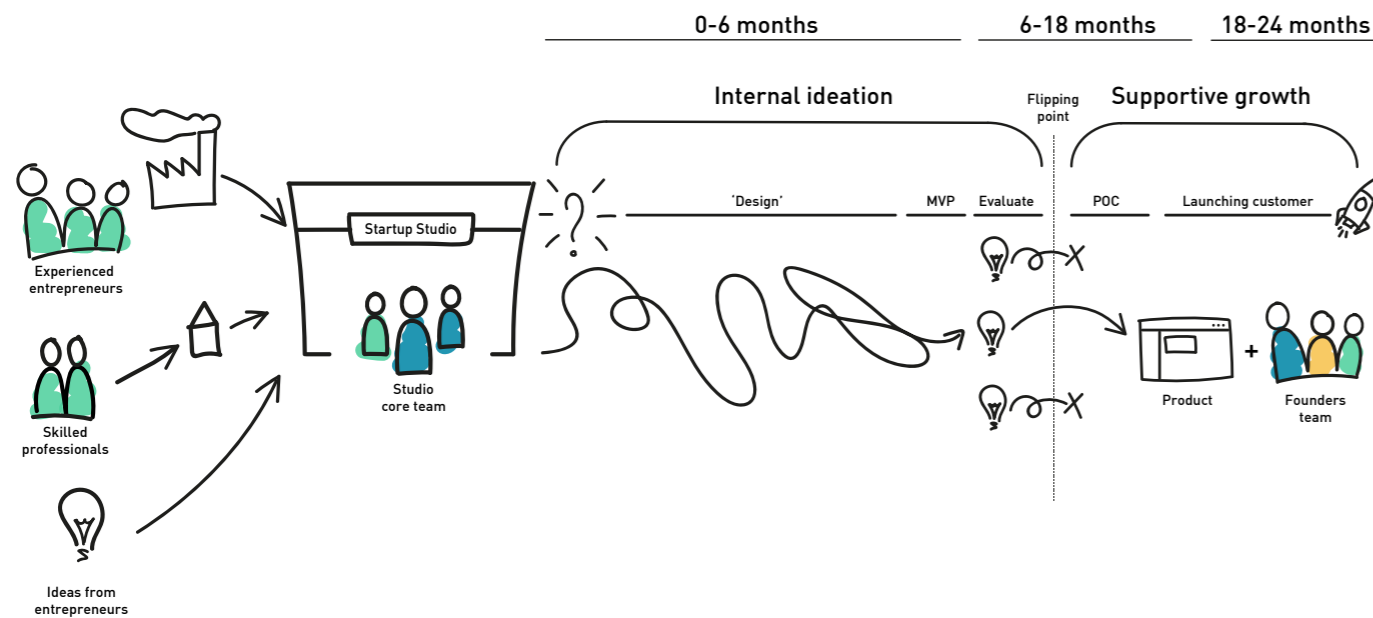


Figure 17 — WAB process overview

WAB acts as a research company during the first 6 months of the startup creation process: the internal ideation phase. After 6 months, the studio core team transforms into a knowledge partner in development, marketing, sales and strategy during the supportive growth phases of a startup. This phase end around month 18. Afterwards, the WAB core team acts as co-founder when the company exits the studio, between month 18 and 24. In the process of leaving the studio, WAB advises on strategic decisions, sparks strategy discussions, monitors the startups growth and progress since WAB owns a 25% share in every developed startup. After the exit, WAB is not involved on a executional level anymore.

A more detailed explanation of the WAB startup building process is described in chapter 4.3.1. Afterwards, the process of startup building by WAB is analysed in chapter 4.5 and the ideation strategy is analysed in detail in chapter 5.4.2.

4.3.1. WAB way of working

To create a detailed overview of the way of working of WAB, internal sources are analysed and combined to create an understanding of how WAB approaches innovation. This research concluded that the startup studio model of WAB is build around core phases, stages and activities shown in figure 18.

PHASES

Phases are indicated by key moments such as originate, invest, advise, acquire and redistribute resources. Originate marks the start of a project, invest means the green light for the create stage, advise is the period in which WAB only has an advisory role, acquire stands for the startups change to financial independence, and redistribute resources means that the companies assets are being reinjected into other ventures. During the different phases set go/no-go moments are located at originate and invest. At these moments the decision is made if the deliverables (a project idea a first and a testable product concept, a minimum viable product (MVP), later in the process) are worth investing in.

STAGES

The phases are overarching three stages of the process: spark, explore and create. The goal of

the explore phase is to discover whether there is a need for a specific solution in the current market. An MVP is created to validate market needs and outlines of the concept. If the MVP is tested and traction is found between a concept and a specific market, the studio core team decides they want to bring this concept to the next phase: create. Within the creation stage a co-founding team is acquired and a customer to develop the solution with is searched.

ACTIVITIES

Stages are split down into set activities. In the explore stage ideation is executed, wherein trends are identified, market research is executed and prototypes are made and validated. Afterwards, an MVP is created and tested and the business model of the concept is evaluated. If the evaluation turns out positive, a startup founder team is recruited and together with the founder team a Proof of Concept (POC) is created. A POC is the evidence of the feasibility (technically and in user experience) of a solution and can be used to convince future clients of the value of the solution. The founding team is responsible for finding a launching customer to finance the POC and test the POC with. The launching customer is the first (real) prove of market fit. If a POC is evaluated as successful, the startup is ready to become independent of the studio.

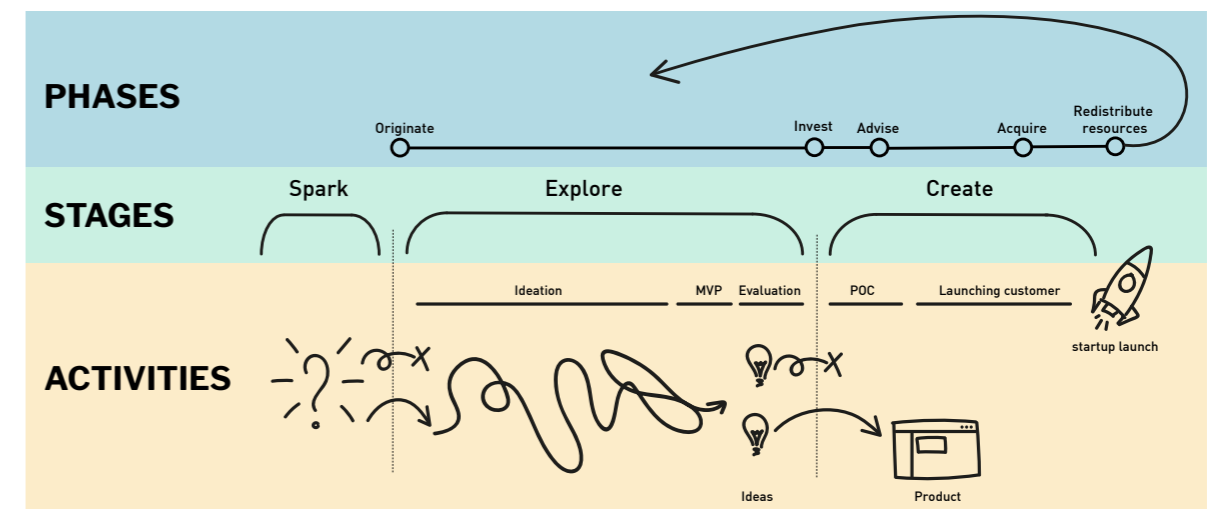


Figure 18 — WAB phases, stages and activities

4.5. Process analysis

I analysed the process of WAB by looking into six WAB startups and their process in history. I analysed the current WAB ideation strategy by focussing on one of the six startups in depth. The goal of the startup history analysis is to explore the startup studio and their process by looking into past startup building activities of WAB (this includes startups before the WAB studio is launched) to understand how WAB launches startups. The analysis of WAB ideation provides deeper insights regarding how currently the process of ideation looks like and how it is experienced by the stakeholders.

The process analysis concludes with an overview of the innovation process used by WAB, with elaboration on ideation, to create common understanding of WAB activities between the researcher and WAB. This overview, figure 119, didn't exist before.

4.5.1. Earlier startup analysis

Earlier startup building research is done to find patterns in the startup building process of WAB. With the goal to find links between success and failure and choices made during the innovation process. The research is done by interviewing startup initiators (WAB CEO, venture manager, and the CEO of one of the WAB ventures). I've asked them to recall what steps were taken per startup in detail, this included strategic decisions, team expansion or reduction, funding and remarkable moments. These notes and the interviewer's notes of interviews with the participant are combined using the Scoping Canvas (Board of Innovation, n.d.) to frame the knowledge in one overview. The scoping canvas is used because it gives a clear and complete overview of what aspects play a role in project scoping. The canvas is used to create overview during the analysis. The scoping canvas of every venture analysis can be found in appendix C5. After filling in the scoping canvas, the specific activities are plotted on the Double Diamond (design council, 2015) to get a visual representation on what kind of activities WAB takes during startup building.

As seen in figure 19, WAB always worked together with other companies or stakeholders to create a new venture. Execution and development of the product was often their responsibility and strong point throughout the process. As can be seen in 3 out of the 5 startup processes, the idea is always directly translated to a product. This product is in only 2 cases framed as a MVP, but often the first launch of a product still forms the basis for the startup in later phases and is it only edited.

WAB often skips a clear definition stage. According to WAB's CEO, this is experienced as a hurdle for WAB. Because a problem definition or future vision often lacks, the process is experienced as too fluid to make important decisions based on data and therefore decisions are often based mainly on gut feeling or entrepreneurial bias. When presenting this to the WAB CEO validated that defining a project better will create more clarity when a client gets involved.

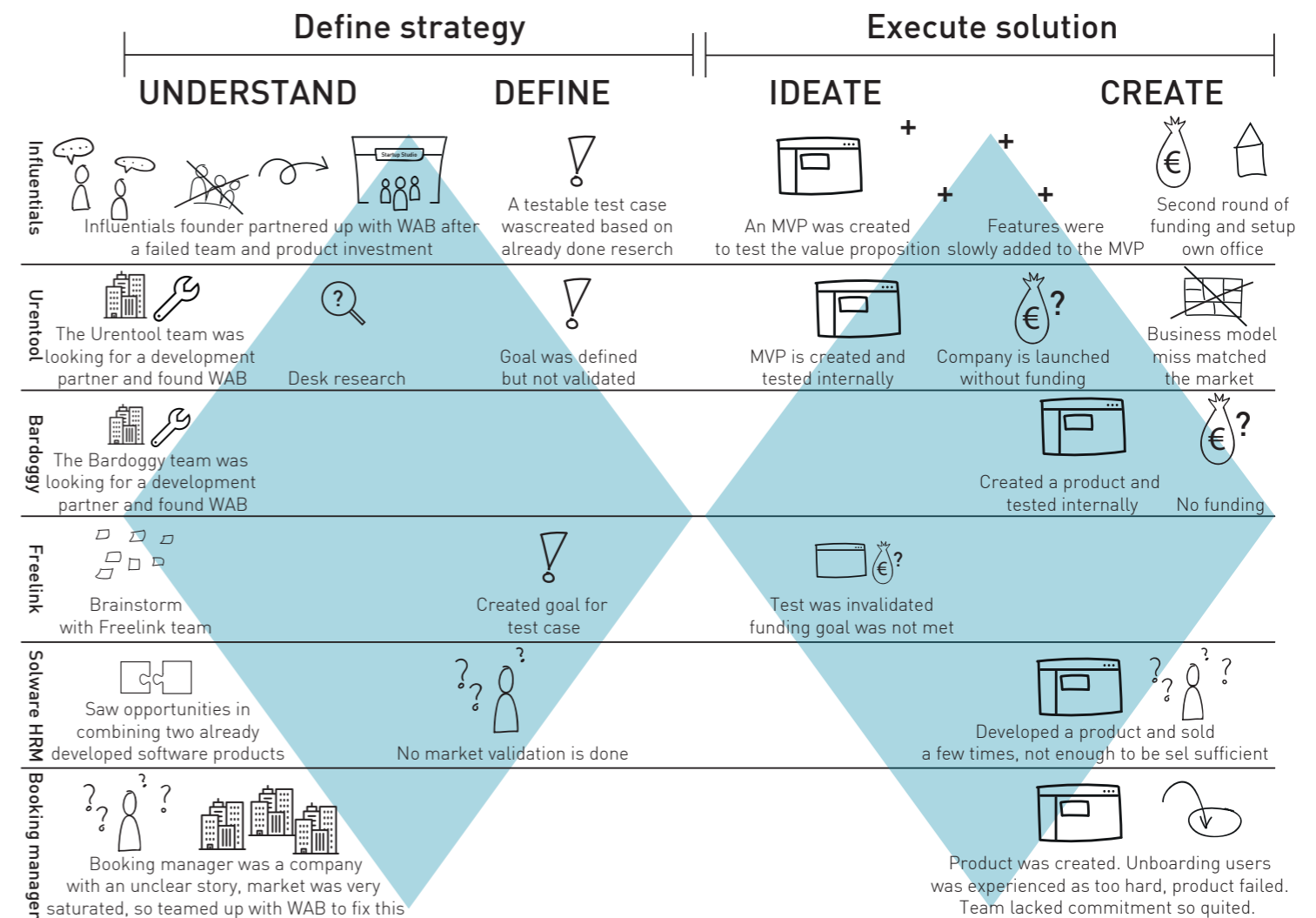


Figure 19 — Earlier startup analysis

4.5.2. Ideation process analysis

This graduation assignment focuses on early phases of innovation. To get more insights in how WAB behaves in these phases and to better understand how WAB transforms a spark to an MVP, I zoom in on the spark and explore stages, discussed in chapter 4.3.1. This is done through reviewing company documents and presentation slide decks on 'ideation of Obeyo', the most recent startup of WAB.

SPARK

'Spark' is the word that WAB uses for the start of a project. A spark can be a gap in a specific market, thoughts for optimization after a commercial project, or a drive for change from someone inside or outside the studio. A big factor to define a thought as a 'spark' comes with the entrepreneurial gut feeling (Duchesneau, 1990). For WAB, a spark is something that feels 'right' or motivates the company to directly build the proposed solution. To some extent it is true that it is hard to point out what is motivating WAB to start exploring the opportunities of spark A and not spark B.

IDEATION

After it is decided that a spark is worth further exploring, WAB starts with 'ideation'. The ideation strategy of WAB in the Obeyo case consists of a first market research, the creation of assumptions regarding market potential and a second round of market research.

During ideation, WAB mainly focussed on the understanding of their customers or clients:

'We learned that the key to success in the B2B world is to think like your customers, or better, to think like an insider. We need to understand who our customers are, how they work, who they report to, what budgets they hold, what problems they have and what they are trying to accomplish.' - WAB Obeyo ideation documentation

The goal of the first market research is to know what parties can be seen as risk reducers (stakeholders, partners or customers) and to explore where there is a need for what specific solution. To get to this full market understanding, five main topics are investigated by the WAB research team:

Trends - Trend research is done through reading blogs, literature, white papers and social media

of influential people and trend watchers in the market. Within trend research WAB tries to 'forecast' the next three years in a specific sector. Looking for longer term trends is seen as less effective because chances are customers don't have these trends on their agenda today and therefore are seen as less valuable.

Competitors - When entering an existing market with a new solution, it is not only important to learn about prospects, but also competitors in detail via market research and interviews

Customers - Discover what companies are likely to be future customers. Via reading news articles or press releases of those companies,

WAB learns what keeps these companies busy. These companies will also be the target during later experiment phases.

Influencers - Market influencers and opinion makers are news sources, blogs or industry experts that influence the public opinion in the market.

Events - Meetings and events that are attended by target customers where target customers can be found can be a source for inspiration and insights into the customer segment

This information enabled WAB to make assumptions on the target customer and their problem. These assumptions are tested by executing interviews with potential customer companies: does the idea solve a known problem for an identifiable group of users? In the second round of market research these interviews are seen as the core activity:

'Talking with potential customers provides valuable insights in what keeps our prospects busy. Learning about their problems is our main goal, but this is easier said than done. An important rule is that we don't ask about the future. People

generally are bad in predicting future behavior (or lie to you). In order to learn from interviews we always ask about things happened in the past, i.e. actual behavior that they showed.' - WAB Obeyo ideation documentation

MVP

After the validation of customer and problem assumptions, WAB proposes a solution in the form of an MVP. The MVP is built to gain and show traction, to show stakeholders the outlines of the future product. The user in this situation is often the client who is likely to pay.

All employees of WAB have a background in software development, so creating a MVP is not seen as a big hurdle. In this stage, WAB involves a client to fund the MVP. This involvement tends to steer the MVP towards the needs and wishes of the client.

CONCLUDING

With this chapter, one full cycle of WAB ideation is analysed in detail (figure 20). This shows that the form of a spark differs, and therefore the approach to future phases differs as well. To optimize the 'spark' phase, there needs to be a way to frame and evaluate sparks to make it . How to do this, is a design opportunity.

Research is mainly focussed around market and stakeholder understanding from a business perspective. In this phase desk research is combined with stakeholder interviews after assumptions are made. By involving stakeholders very late in the process of discovery the project already got a clear focus and interviews can only (in)validate knowledge instead of steering the project team. This makes ideation currently a process where knowledge gaps are indicated by desk research and filled with knowledge gained from interviews.

The involvement of a client during the MVP is a step that needs attention to execute properly. The needs and wishes of the client don't always overlap with the needs and wishes that were formulated during ideation. This can result in friction in interest of the project, as verified by the WAB CEO.

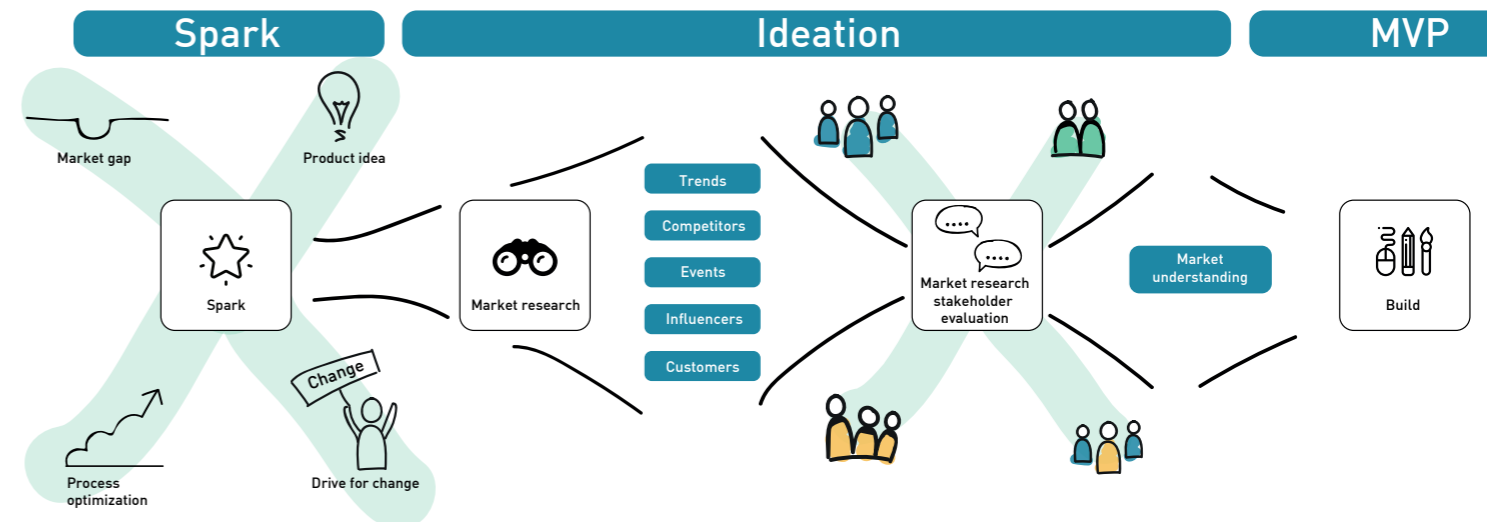


Figure 20 — WAB ideation process

5.4.3. Concluding process analysis

To conclude the process analysis, a visual representation of the WAB startup building process with the emphasize on the ideation phases is shown in figure 22. The conclusions are drawn in three categories: define stage, explorative research and problem definition, all three discussed separately.

Define phase is skipped

The earlier startup analysis (paragraph 4.5.1) showed that the 'define' stage of the Double Diamond is often skipped during the internal process and this is experienced as a hurdle in the current startup building strategy. In early phases of innovation, before the creation of an MVP, during exploration of opportunities defining a goal or vision can be useful to create clarity during development and prevent the decision making process being based on only entrepreneurial gut feeling.

Market research is called 'ideation'

The current ideation process of WAB, the activities WAB takes until an MVP is created, can be more a straight - than diverging process as can be seen in paragraph 4.5.2. Market research forms the basis of WAB ideation. Ideation, as discussed in chapter 3, is a process that includes idea generation, testing and, selecting. Before ideation, Design includes explorative research to understand the problem and to frame the scope of the to be designed product. To get towards problem understanding, research must be done to uncover deep stakeholder needs before product development. Opportunities arise to broaden the ideation phase of WAB beyond only market research.

Focus blurs when client is involved

As soon as the project moves from explore to create, the project changes to being a multiple stakeholder project, since a launching customer is involved when creating a MVP. The clients' opinion tend to often form the project, as described in the MVP part of paragraph 4.5.2.. This opinion or future vision of the client and WAB don't always overlap, this difference can result in traction between WAB and the client. At this point WAB needs to decide: do they follow the needs and wishes of the client to secure product value for them, or do they stay close to the opportunity directions that were defined after ideation, that formed the basis for market value? To use ideation as a solid basis for product development, a clear problem definition is needed. Defining a problem statement or design goal is currently not created in the early phases of the WAB innovation process. This shows opportunities for adding a problem definition stage (figure 21). This stage as defined by Vianna et al. (2012) can be a basis for the creation of this stage in WAB.

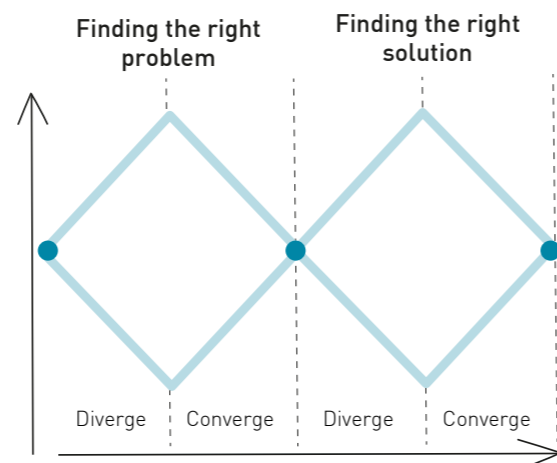


Figure 21 – Diverge and converge within design

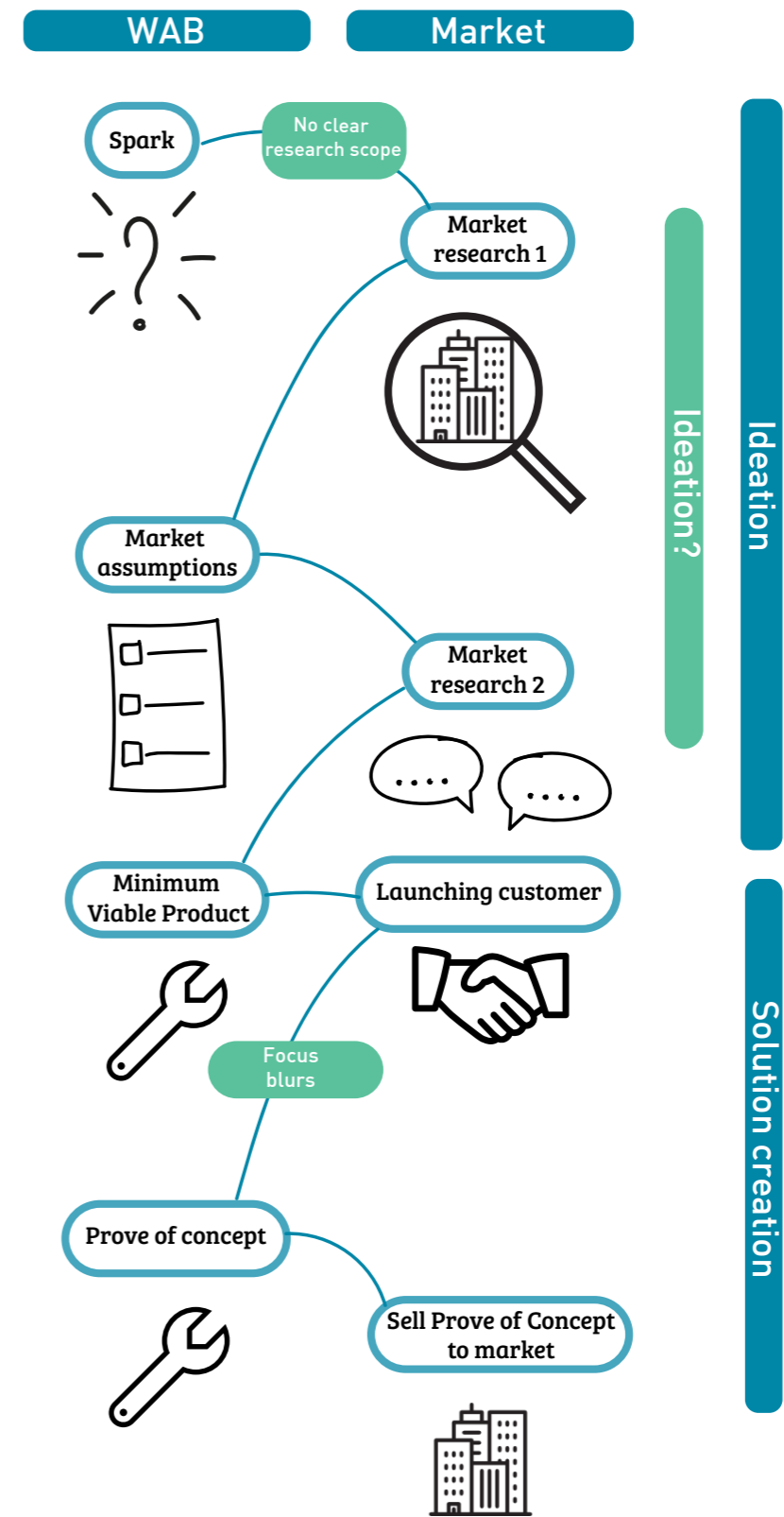


Figure 22 – WAB process of startup building

5. External analysis

External analysis is done by sector expert interviews and a competitor analysis. The goal of the sector expert interviews is to understand what designers experience while working in a software focussed or innovation focussed surroundings. These insights can be seen as learnings for this project. The goal of the competitor analysis is to create an overall 'venture builder' process to compare the WAB process with.

5.1. Sector expert interviews

Via semi-structured interviews with sector experts about the application of design in real and relevant contexts is analysed to broaden my knowledge and understanding about how design is applied in innovation and digital surroundings. The interviewed designers are working as innovation consultants (design innovation consultancy, 2 designers) or software context (international software company, 2 designers). All of the interviewed designers work in multidisciplinary teams and are responsible for the application of design tools and methods in the corporate process. The interviews were recorded, replayed and analysed via writing a summary of the conversation. This analysis can be found in appendix C3 and C4. The findings relevant to the context of this graduation are discussed.

5.1.1. Software designers

Design and software development often go hand in hand, this is reflected in the many UX/UI designers working at software companies. What is relatively new is the involvement of service designers and strategic designers in software development. This combination has not received much attention in the research community yet. Therefore a semi-structured group interview with two service designers who work for a software development company are conducted to gain insights in how design is applied in a strategic manner within a software development context. The interviews are combined in one group conversation because of time issues. The interview transcript can be found in appendix XX, most important insights based on the interview analysis and quotes are discussed.

TEAM INCLUSION

As a designer in a non design surroundings, the

services designers indicated the importance of design education at the whole team. This design education should be experience based:

'To let the team experience the whole process of design, a workshop can be useful. This to let the team experience the value of design and for the designer to use the workshop as an example to reach back and refresh design knowledge.'

Also, it is important to make design and design thinking relatable and doable:

'To get the development team familiar with design, it is smart to start small. This can for example be done by taking developers to user test, to evoke curiosity towards the customer.'

But at the same time it is unrealistic that this design education will not be effective for all team members:

'You can't teach empathizing skills to everybody, but there are always people who are enthusiastic or had a good experience with design/design thinking.'

The team members who have valuable experiences with anything related to design can be seen as design champions:

'You can use them as your champions and include them in the design process. This inclusion can start with small steps, like motivating them to sketch more.'

TRUST YOUR DESIGN EXPERTISE

To show the value of design, a strategy can be to one step ahead and predict the questions people can ask: why is this method good for the team? How is this helping our process? Why do we want to listen to customers? This to explain the value of the process:

'For some, who are more distant but do understand the value of design, it is important that as a designer you show evidence of the steps your taking.'

pay.'

External examples of how other companies use design can be used as inspiration as well:

'Other companies publish a lot of design related content and made 'prove' that triggers non-designers.'

As a designer and the one who is leading the process you have to be on top of your discipline. When you let participants experience design it is about changing mindset and not only apply tools to familiar processes. This to prevent that tools are misused:

'You have to be on top of your discipline. This means it's not about letting your team use design tools and methods, but about changing mindset towards design and explorative activities. Tools and methods work when designers use them. When you put design tools and methods 'out in the wild' without context, non-designers take it for granted and no matter what is the problem they are going to reach out to that tool.'

5.1.2. Innovation designers

To understand how design and innovation cooperate in reality, interviews are conducted with designers in an innovation setting. Two designers have been interviewed via an unstructured interview who currently work as innovation consultants in multi stakeholder projects. These innovation consultants have a background as strategic designers.

OPEN VALUE CREATION

Open value creation is the process of co-creative value creation where the outcome of the innovation process for a specific partner is unsure:

'In the case of mutual partnerships important that all partners agree on 'open value creation' of the project, where the outcome and the value of the innovation for a specific partner is unsure.'

To make sure a project team has a shared understanding it is important to understand the social cultural context for the concept, all understand and agree on the discovered latent user needs:

'The balance between only executing after a set question by the client and creating a valuable innovation without constraints is hard. Often the 'user' in user research is the client who is likely to

DESIGNER AS COMMUNICATOR

Visual communication of the research results and vision helps to create shared understanding (Bucolo, Matthews 2011). Innovation or strategy workshops can also help with creating a shared understanding of the project and create empathy at stakeholders for the project goal:

'Involvement of innovation partners is sometimes hard. Everybody has a different background and therefore different values and goals to reach within the project. Innovation or strategy workshops can help with creating a shared understanding of the whole scope of a project and empathy for the goal of others.'

In innovation settings the value of a designer is not only the design work itself. A designer can create overview and shared understanding:

'A designer in co-creation surroundings is a problem solver and overview generator. A strategic designer is valuable for the innovation process because he is comfortable with looking beyond its own skill set and mindset. Therefore a designer can bridge gaps between professionals from different disciplines and can facilitate the creation of value instead of solving the puzzle of the stakeholders involved.'

5.2. Venture builder research

The goal of the venture builder research is to identify competitors and analyse their strategy in early phases innovation. This is done by first identifying company structures that are comparable to the startup studio concept on the Innovation matrix (Board of Innovation, n.d.). This matrix is designed to give insight into the many different forms of venture creation models. The startup studio model is not explicitly mentioned in this matrix, since it is relatively new. The startup studio concept place on the innovation landscape is identified together with the WAB CEO (appendix 6). This scoped down competitor identification. Competitors are found via desk research and a second matrix, divided by vision and process, is used to decide which specific competitors are identified as direct competition.

Direct competitors don't differentiate themselves on vision, but differentiate themselves by fully focussing on co-founding ideas together with passionate entrepreneurs, comparable to WAB. These companies (The main ingredient, eFounders and Betaworks) are taken into account in analysing the startup creation process to create a startup builder' process blueprint. This blueprint forms an overview of how other innovation focussed companies approach the process of innovation and startup creation.

This blueprint is based on the online available process publication of these companies. How the competitive analysis is executed can be found in Appendix 7.

This publication analysis is combined with the academic research on venture builders by Rathgeber, Gutmann and Levasier (2017), with the goal to validate the findings of the desk research. The startup builders' process blueprint is visualized in figure 23.

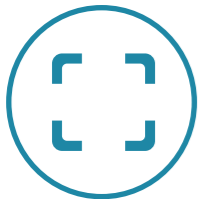
The startup builders' process blueprint shows that competitors make use of a clear project definition stage early on in the process of startup creation. This phase is followed by creating comprehensive process understanding via customer and business model research focussed on the end user with the goal to create new business ideas.

After two explorative phases, other startup builders also move towards more practical stages focussed on feasibility: validation, market ready and grow.

5.3. Concluding external analysis



Value of design can be shown by letting the team experiencing the design process themselves. This is closely related to team inclusion and the role of a designer as a process educator. In this process, a designer should be one step ahead of the team and be on top of their discipline.



At other startup building companies as well as in design a research scope is clearly defined. At other startup building companies a project always starts with a clear project definition to execute a focussed research phase. This allows teams to base decisions on evidence. Within design a clear problem definition allows to execute user research and explore opportunities via deep insights within a context instead of explore the context.



Open value creation in multi stakeholder projects is an important goal to keep the project focussed and make sure the maximum value is created for the context of the solution in stead of only creating value for the stakeholders involved.

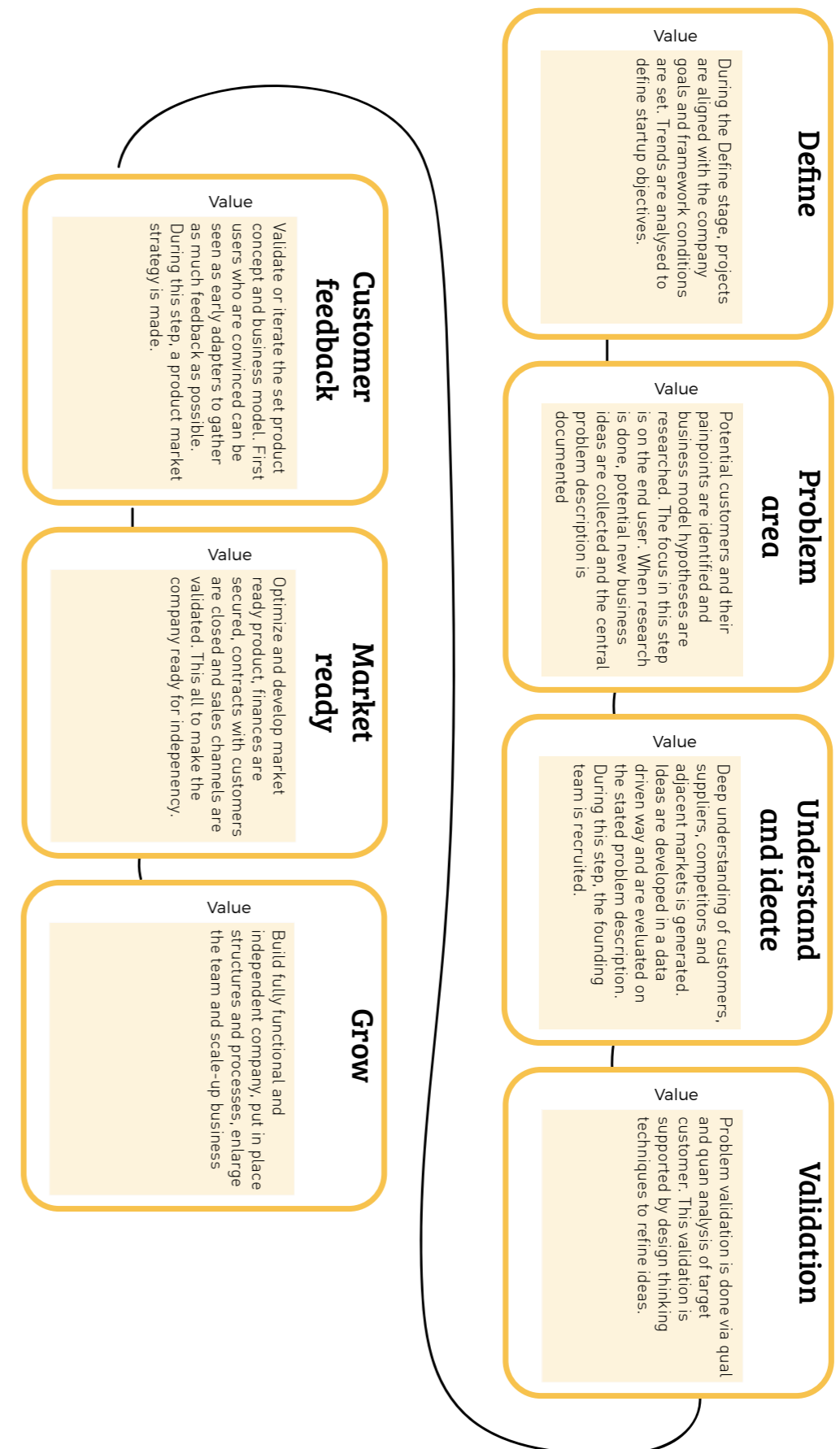


Figure 23 — Startup builder blueprint

5.3. Internal and external process comparison

To understand where the current ideation strategy of WAB is overlapping or differing from other venture builders, and what insights can be learned from this, the processes are compared (figure 24).

Competitors have a more clear structure on how to frame and explore sparks. This framing and exploring is often done in a define stage where a project frame or problem definition is formed to build a research plan on. Knowledge of competitor define stages are explored to see how project definition can help WAB in creating more clear project frames and conditions.

As concluded from the competitor analysis, Competitors make use of a clear structure for project framing and problem defining and validating of the problem area. At WAB, the step of 'problem definition and validation' has a less set place in the pre-launch period.

As discussed in chapter 4.5.2., ideation is currently done very minimal at WAB. This is also the case if you compare it to direct competitors, where you see that design thinking techniques are applied to create creative and new-to-the-market product ideas. The acknowledgement of 'idea generation' as a divergent stage where opportunities are formed and not yet selected, differs from the current WAB process.

5.4. Concluding discover

The findings from literature-, internal-, data- and external analysis present several clusters: **problem definition, performing explorative research and idea generation and idea generation. These clusters conclude the discover phase and form the basis for the design challenge defined in the define stage.**

Problem definition

The early involvement of a client steers the solution towards the needs and wishes of that specific client. Currently, it is unclear if the needs and wishes of that client are representative for the market, since a clear problem defining and explorative research stage is lacking. At other company builders and in the process of design, defining and validating the problem area is the first step after project framing. At WAB, the step of problem definition has a less set place in the pre-startup period. This results in unclear projects scopes.

Explorative research and idea generation

Ideation is currently seen by WAB as only market research (figure 20). Opportunities arise here to broaden market research towards an ideation process as used in design. This includes explorative research an idea generation as both divergent stages where innovation opportunities are explored and not yet selected. Explorative research has the goal to translate the problem definition and market research into new insights, before creating a MVP. How explorative research and idea generation can be applied needs to be discovered.

Open value creation

A client will always be involved in the later stages of the innovation process of WAB when developing an MVP and during company launch. To avoid negative traction between stakeholders, open value creation can be applied. This will allow WAB to keep the accomplished research in mind and make decisions based on that research. If WAB and a client can agree of open value creation, this will give focus to the project and the solution. Because the create phase is outside of the scope of this graduation the concept of open value creation during the MVP creating will not be discussed researched further.

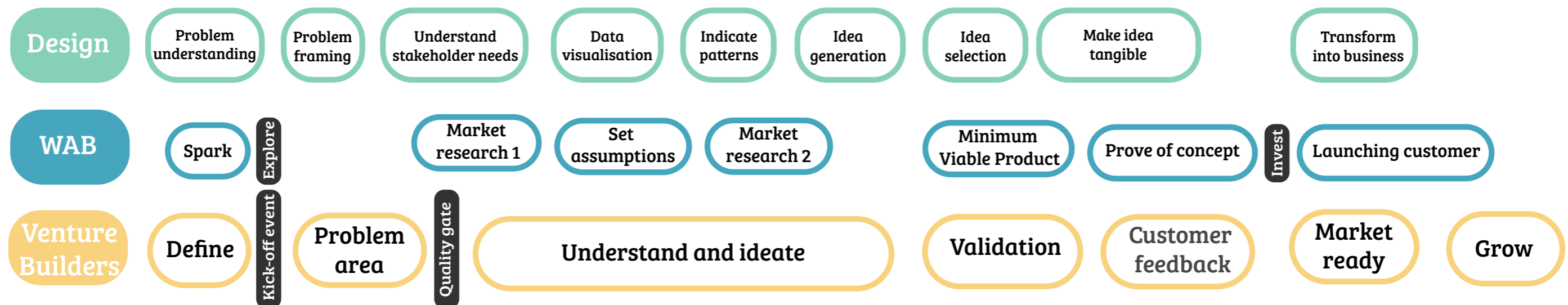
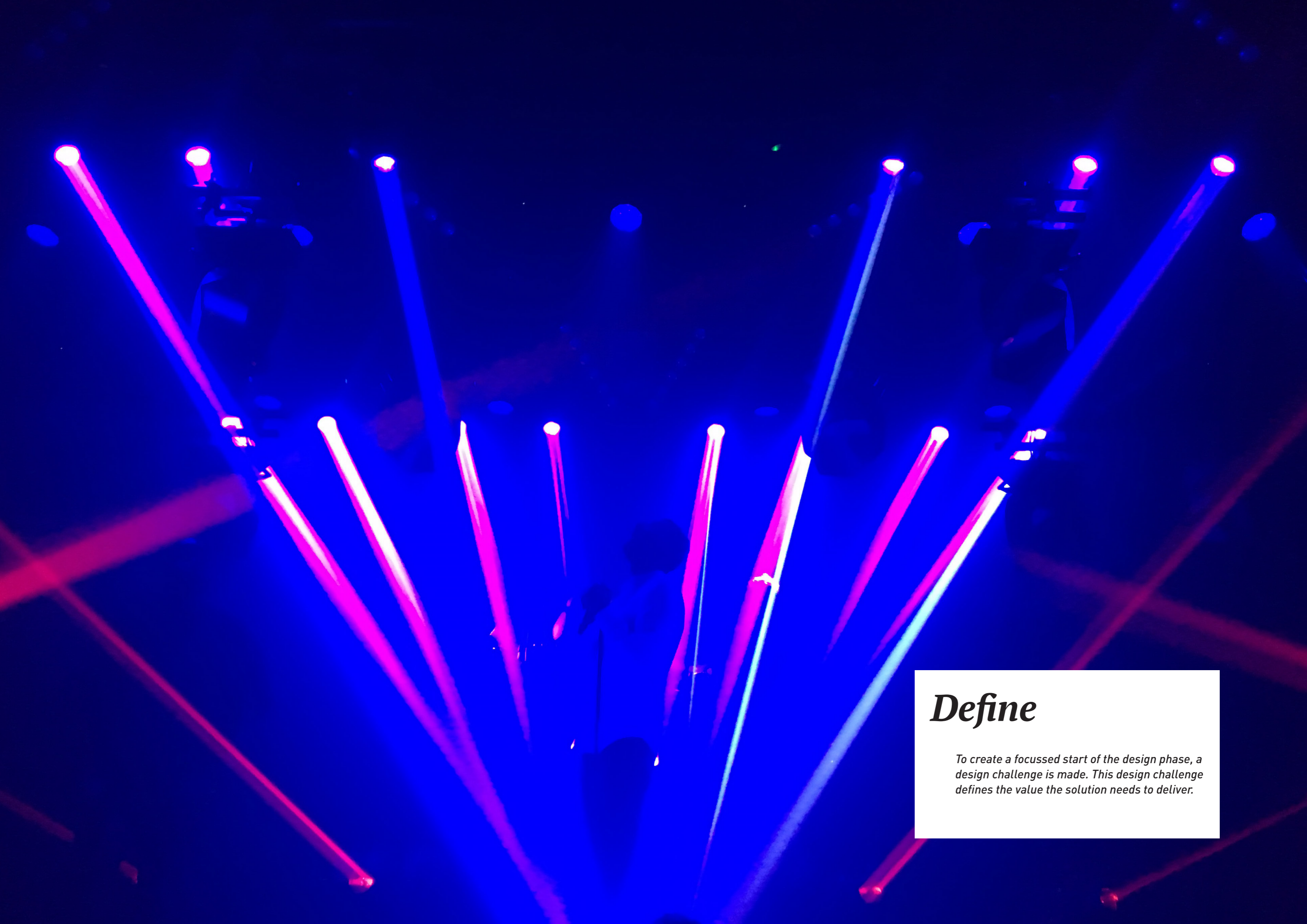


Figure 24 — Process comparison



Define

To create a focussed start of the design phase, a design challenge is made. This design challenge defines the value the solution needs to deliver.

6. Define

WAB currently has no set plan on how to approach research after a spark comes in. WAB processes of startup creation have been to diverse in the past, this makes it hard to know which path to choose in future startup creation, and to document one single way of working in the startup studio playbook.

The discovery phase focused on discovering where design and the impact of a designer can be of most value at WAB. This is done by analysing literature regarding design, design processes, innovation and strategy, deep dive into WAB as a company and their approach to the ideation phase, and analysing the way of working during the fuzzy front end of innovation. These three perspectives -academic, internal and external- showed three important research directions, disucces in 5.4. At define those conclusions are translated in a design challenge and design goals.

A design challenge forms an inspiring and challenging basis for the design phase. With the specific challenges for WAB in mind, this graduation focused on creating a framework for the the early phases of innovation of WAB and therefore creating a strategy for other innovation structures on how to approach FFE innovation phases in a design-led way.

6.1. Design challenge

Design a guide for explorative research that helps startup studios to create a holistic understanding of opportunities, do so by providing a way for entrepreneurs to create insights, plan research and communicate opportunities in early phases of the innovation process.

Guide for explorative research

To help a startup studio to explore and embrace the divergence of exploration, the final solution should guide them in this way of working. Explorative research has the goal to translate the problem definition and market research into new insights, before creating a MVP.

Holistic understanding

The goal of the explorative research guide is to help startup studios to create a holistic understanding of opportunities in which the Desirability, Viability and Feasibility are all equally explored and balanced out.

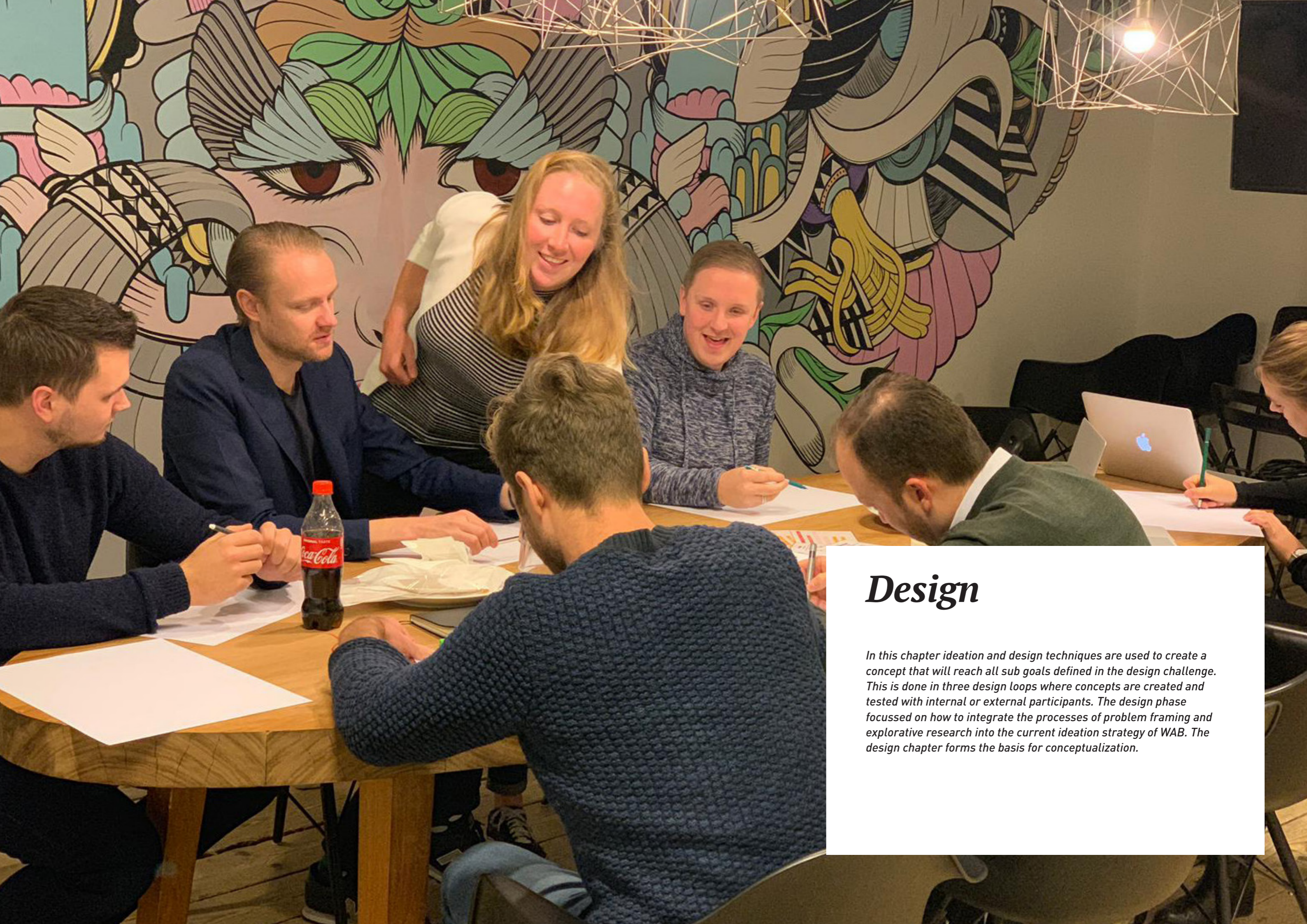
Create insights, plan research, communicate opportunities

The research guide should not only show how research must be done, the guide should help in translating knowledge to insights, making a research plan and a way to easily communicate the found opportunities to other stakeholders.

6.2. Design goal

The design phase will focus on how to integrate the processes of problem framing and explorative research into the current ideation strategy of WAB. This with the following goals:

- The design needs to create a framework to evaluate sparks. This with the result that the explore phase is executed in a structured way.
- The design needs to manage the transition from 'spark' to 'problem understanding and framing'
- The design must create a clear project goal to reduce ungrouped focus shifts during the involvement of a client.
- The design must give WAB handholds on how to approach discovering latent needs of stakeholder to create empathy regarding the problem and the user
- The design must give WAB handholds on how to diverge and explore during idea generation and make decisions afterwards based on earlier done research
- The design must let WAB better understand the value of exploring and open ended research instead of only focus research on filling knowledge gaps.



Design

In this chapter ideation and design techniques are used to create a concept that will reach all sub goals defined in the design challenge. This is done in three design loops where concepts are created and tested with internal or external participants. The design phase focussed on how to integrate the processes of problem framing and explorative research into the current ideation strategy of WAB. The design chapter forms the basis for conceptualization.

7. Design

Based on the analysis phase, designing starts in the direction of explorative research with the goal to create a holistic understanding of the spark scope. Design directions started with: problem statement, problem validation or testing and ideating solutions. The 'problem statement' design loop and 'problem validation' design loop led to a *aha-erlebnis* that resulted in a design goal iteration before and after the third design loop. The design phase formed the framework for the final concept, discussed in chapter 8.

7.1 First ideation

To explore the possibilities in designing a guide for explorative research, the first ideation consists of four different sessions, discussed separately:

- 7.1.1. Creating more knowledge about the practical design process
- 7.1.2. Create more knowledge about how to design a process
- 7.1.3. Create understanding of the WAB approach towards ideation
- 7.1.4. Spark creativity at the WAB employees

7.1.1. Co-create the design process

Design is a process that can include a lot of tools and methods. To explore what tools and methods are out there, a designer session for design master students was created to create an overview of tools and methods per step of the design process. This basis of the designer session is based on the design process defined by Vianna et. al. (2012). This session is created to get a better understanding of the design process in practice. For every step of the design process the designers were asked to answer: why do you perform this step? What tools or methods do you use? What is the deliverable of this step? The design session was joined by four designers. The findings of this session can be seen in figure 26. These overviews are used as inspiration in later design phases (appendix 8).

7.1.2. Creative session process design

In the design challenge the goal solution is described as a 'guide for explorative research'. Designing a guide includes more than only creating well thought of steps, but also creative overviews or nudges to get people engaged in the process. To get a better idea of how to design a process for the WAB ideation phase, I organized a session focused on what is important to do or include when designing a process. This is done in a dummy case, described in appendix 10.1. The outcome of the dummy case has no direct connection to this graduation assignment, since the goal was to create inspiration for process design in general. Explaining the graduation context wouldn't add value to reach this goal. This creative session approach is set up with the creative facilitation theory as a basis (Tassoul, 2009). Three designers joined this session. The overview of the ideas around the two most interesting 'how to' questions used in the design loops are visualised in figure 27. These overviews are used as inspiration in later design phases (appendix 10).

7.1.1. Design process

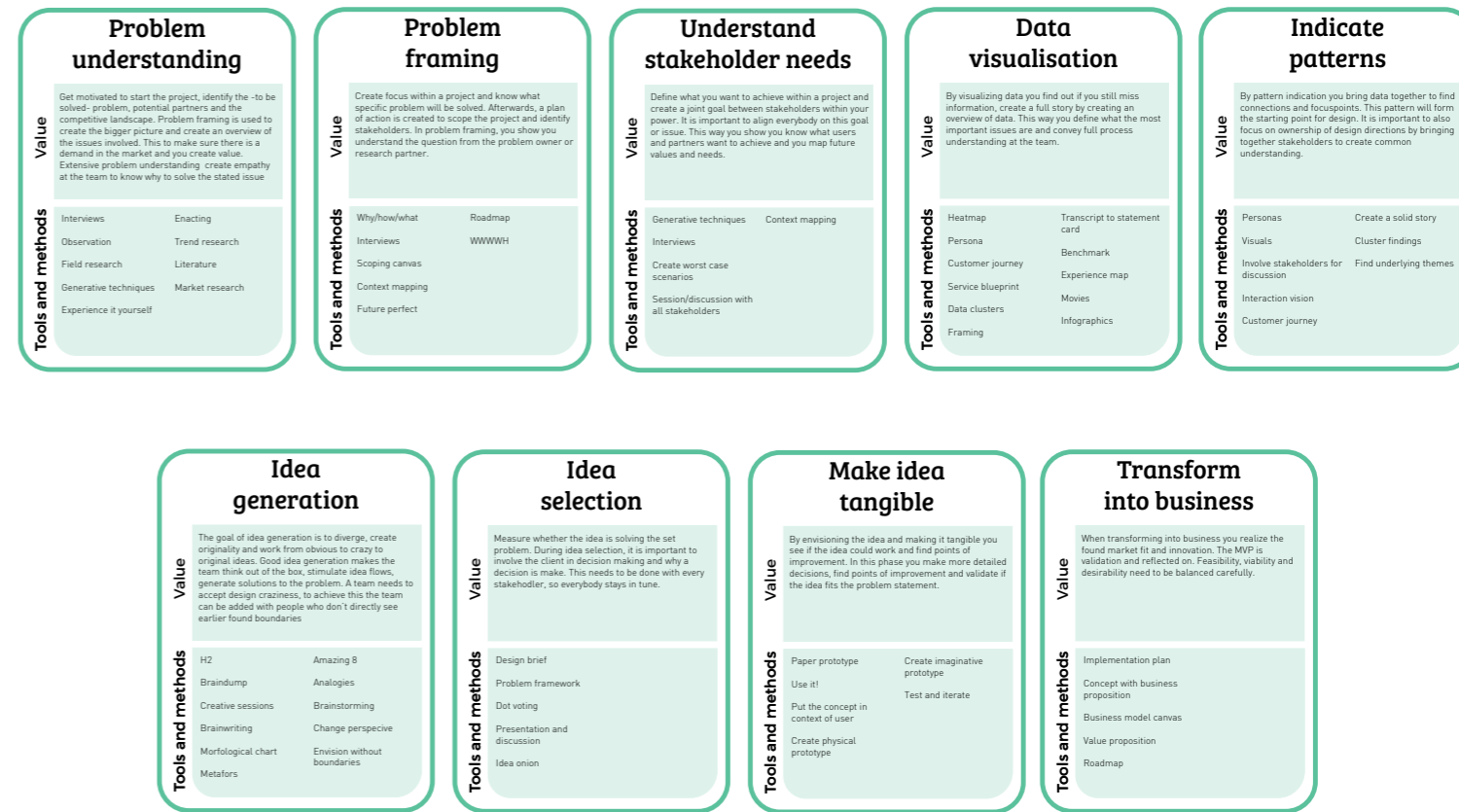


Figure 26 — Impression of creative session design process

7.1.2. Process design

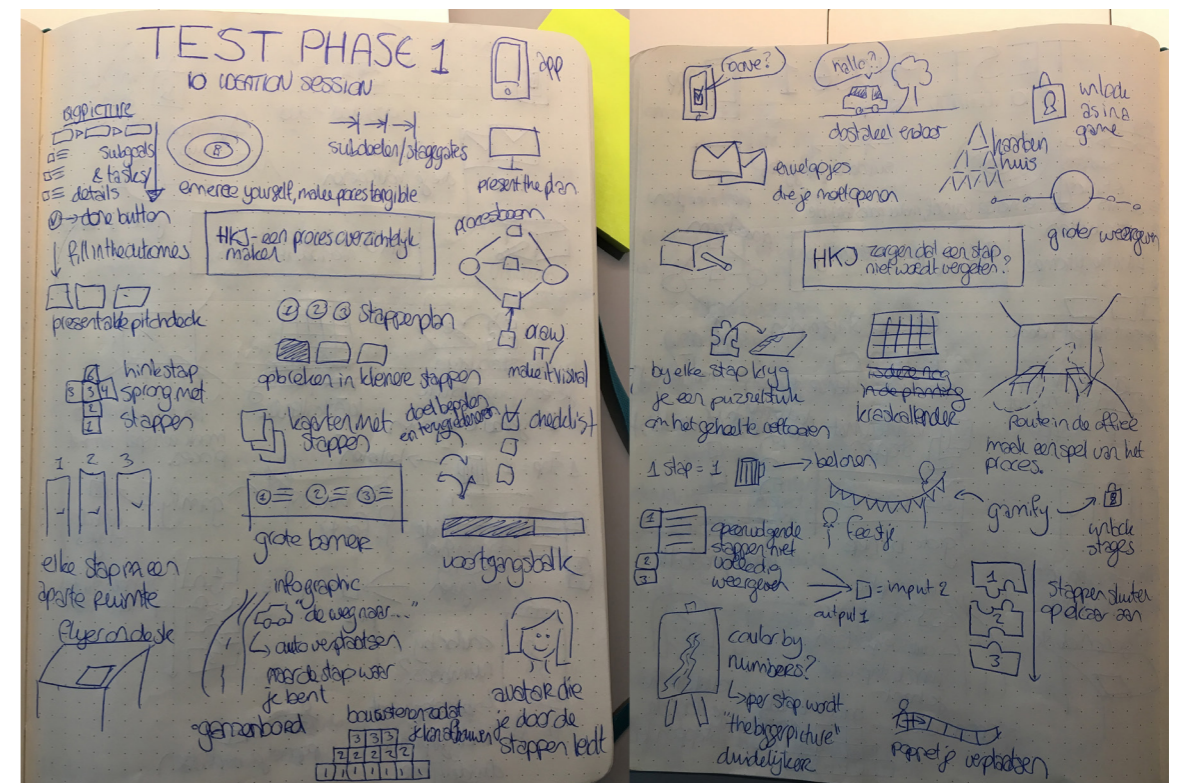


Figure 27 — How to - process design inspiration

Marloes Meijer

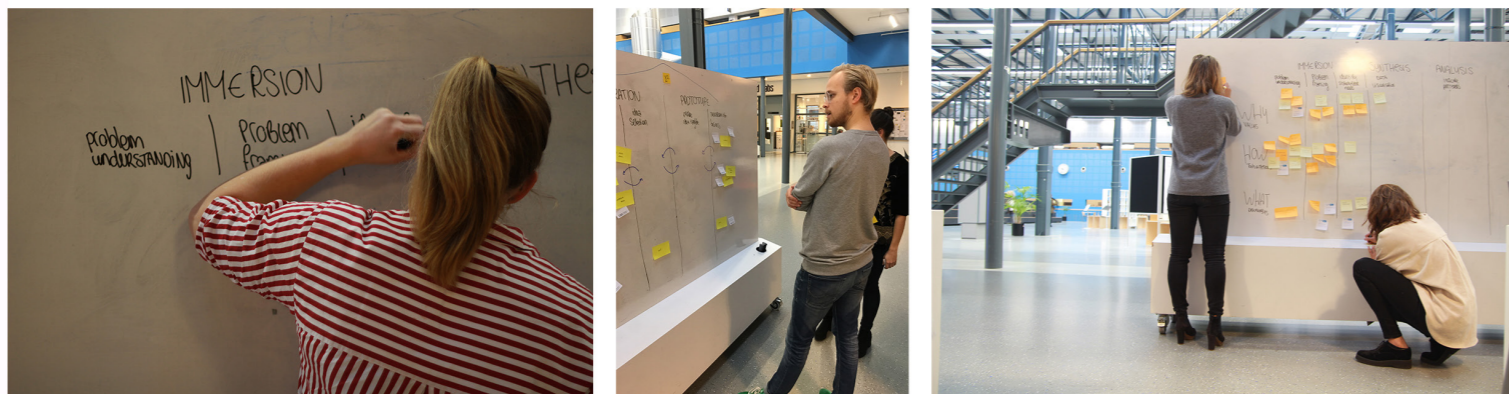


Figure 25 — Impression of creative session design process

7.1.3. WAB process design

To understand how WAB would design a process an interactive meeting is hosted. By letting the WAB CEO and venture manager answer 'How to' questions, the goal was to understand what steps the company is envisioning to take during ideation and project scoping (figure 28) (appendix 10).

Insights

This creative session was recorded. Because the session led to a insightful discussion around designing an ideation strategy, the session is transcribed and statement cards were made (appendix C7). The most interesting insights are:

Market research is a big part of scoping opportunities and starting with business model making:

M(3): If a new spark comes in the question is: what is the business model? If it is about goals you ask: who is your target group? How do you define the market? What is the market size? How can we solve their problem in a different way? What is the added value of your solution? What part (in %) of the market can we change with this solution?

Discovering if the problem you are solving for a type of person is desired, is not part of the process but is desired to be better in:

S(17): I think that a cool idea doesn't directly need to have a clear target group, I would know how to find a right target group. I think that there are enough innovative ideas in the world that switched target group. You have to have focus on a direction to work on a idea, so you just choose.

When a spark comes in, it is unclear what information is based on real data.

WAB is not used to work with (design) tools and therefore the participants felt like they would need a lot of guidance to perform the steps in a right way:

M(26): To recognize the target group you perform interviews to see if the target group experiences the problem, to break down my assumptions. Otherwise I get stuck with a lot of data that I don't know what to do with. Knowledge can be seen as a funnel from ideas to knowledge, and how do you funnel?

Visions don't change that often, but are sharpened by research:

M(34): I always check first on what impacts the vision of an idea the most. The vision is super

important. I think that afterwards you have to score possible vision directions. So if you have a spark, there are 2 or 3 interesting directions on how to approach that spark. That has to be tested, or maybe it is tested already.

Defining a problem definition is not something that is in essence part of the entrepreneurial:

S(37): if a spark comes in and you didn't think of solutions yet, I always envision a particular solution in my head. I have solution idea directly from the start, this is because I'm an entrepreneur.

As an entrepreneur you never think about 3 possibilities, you just have one very good idea. We always think on how to fit the idea in a buildable frame, maybe something we have seen already.

7.1.4. New startup creative session

To explore how creativity and explorative research is valued at WAB, a creative session for the new venture is hosted by the researcher and me (figure 29). The session setup and findings are described in appendix C6. The team reacted positive towards drawing and using their imagination. The goal of this session was to get the team out of their daily way of working and show that everybody can be creative and by listening to each other and visualizing what you think, you can learn more than by only writing a report. During the session the team was asked to draw their ideal household, this is in line with the new venture that is launched at WAB. Using your creativity was experienced as nice and new, but not directly as a valueable source of information. This insight will be taken along in the design loops.

7.1.3. WAB process

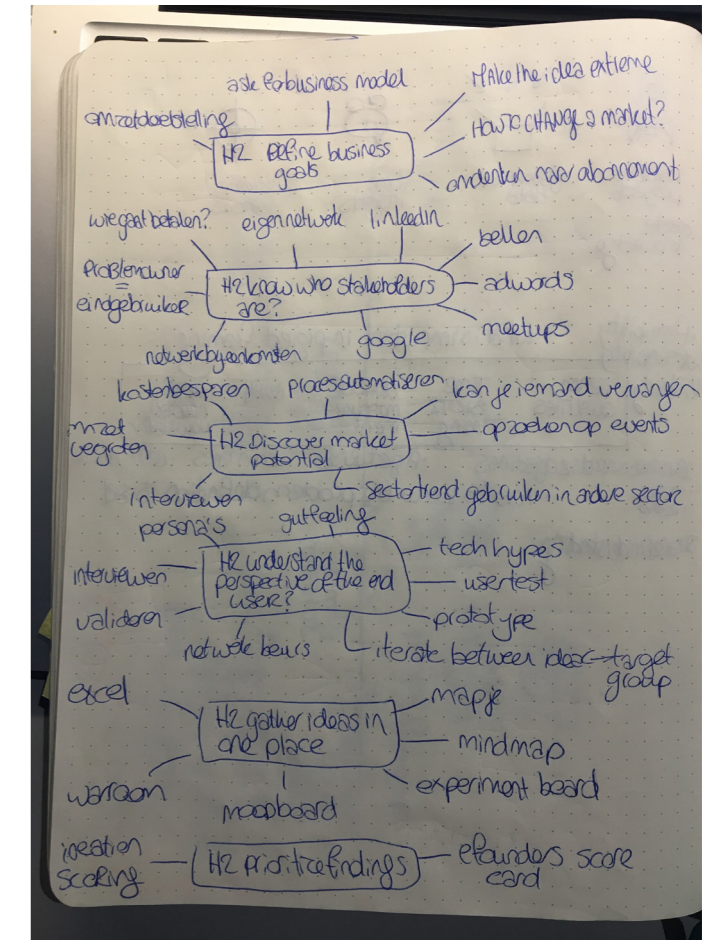


Figure 28 — How to WAB process design

7.1.4. WAB creativity

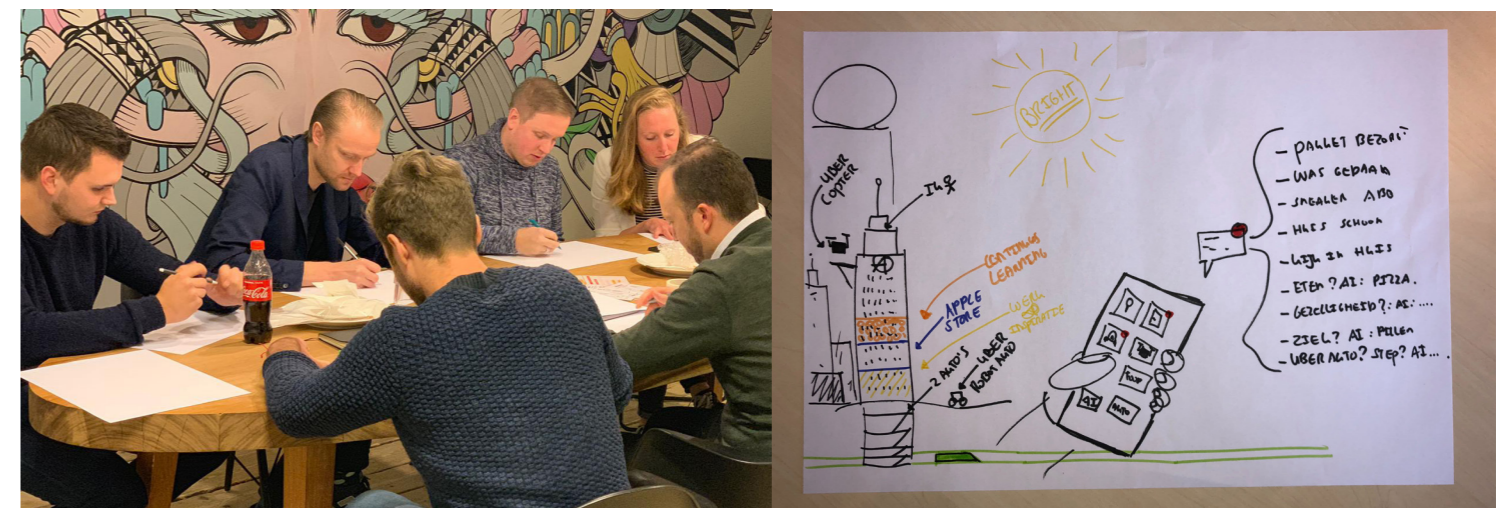


Figure 29 — WAB creative session

7.2. Design loop 1 - Problem scoping workshop

The first design focuses on the moment right after a spark comes in. At this point the goal is to uncover what knowledge is behind the spark and what research needs to be done to form a problem statement. A problem statement is a clear concise description of the issues that need to be addressed by a problem solving team for a specific user base. It is used to center and focus the team at the beginning, keep the team on track during the effort, and is used to validate if the solution solves the stated problem. Forming a problem description requires synthesizing findings from the exploration stage.

This first test loop focuses on creating an overview in what are important factors to take into account when designing a guide for explorative research with the goal to create a problem statement. This resulted in a problem scoping concept in the form of the Knowledge Workshop. **The goal of the Knowledge Workshop is a method to define a clear and concise problem statement via sharing and scoring knowledge.** Through collaboration and discussion the core team creates visual overviews of the knowledge and defines vision statements based on a real spark: The Digital General Practitioner (GP) (appendix C8). The goal of the the workshop is to get on the same page regarding the Digital GP topic, understand everyone's perspective and create possible vision directions based on the workshop outcome.

To create this context understanding, the goal is split into sub-goals:

- The team needs to get into the context of a project
- The team needs to agree on a shared project vision
- The team needs to discover what needs researching

All raw materials (appendix C9), session planning (appendix 11), transcripts and data analysis (appendix C10) of this session can be found in the appendix.

7.2.1. Materials

For the Knowledge workshop, I designed four canvases: the Knowledge dump, Assumption map, Assumption list and Vision directions (figure 30). The canvases in full size can be found in appendix 11. These four canvases form the basis of a 2 hour workshop for researchers and entrepreneurs. The canvases were supported during the workshop by me as facilitator and a presentation to spark discussion.

Knowledge dump canvas

The knowledge dump canvas has the goal to let the team touch upon four different aspects of the projects' context: context, user, problem, and value.

Assumption map

The assumption map has the goal to indicate what knowledge is known and what is assumed. This canvas will show all risky assumption and will make clear where research needs to focus on.

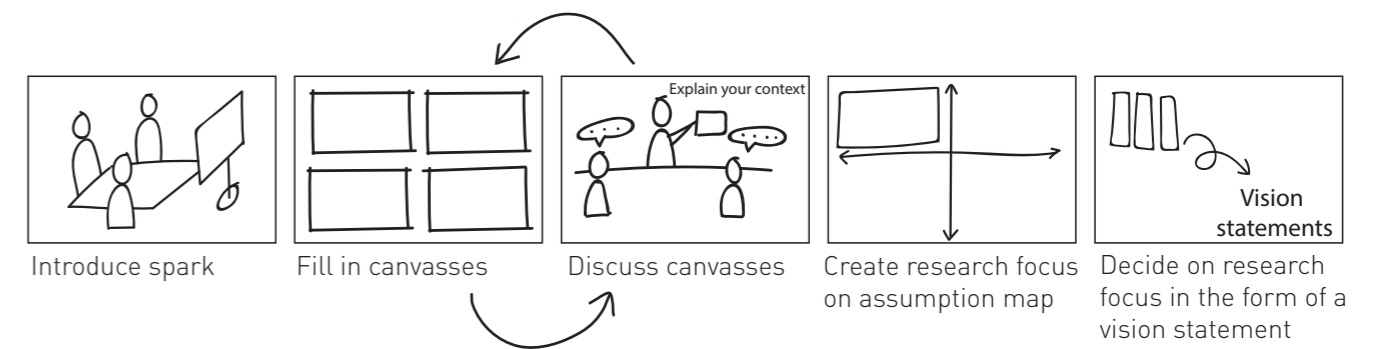
Assumption list

The assumption list breaks down the risky assumptions in stakeholder, problem and value. This to work towards vision directions.

Vision direction

The vision direction canvas provides the team with four vision boxes to fill in to decide what the project is going to focus on. Each vision box is supported by two sliders indicating how risky and essential the vision direction is. The visions can be seen as the direction of research.

7.2.2. How it works



7.2.3. Testing, insights and development

The focus of the Knowledge workshop is based on the 'How Might We' session with the WAB CEO and venture manager. The insights of this session can be found in appendix 6. The most interesting insight to start prototyping is that the focus on sharing knowledge and working towards a vision is very important. The canvases are created by first exploration tools and methods for problem scoping that are already available, for example the scoping canvas (board of innovation, n.d.) or experimentation board (Javelin, n.d.). The canvases of the Knowledge Workshop are developed by rapid prototyping and iterating based on reflecting on idea sketches with the WAB researcher, who functioned as the design champion throughout the research.

For analysis of the session, the sessions are recorded and partly transcribed. The participants are referred to as P1, P2 etc. The number in brackets is the insight card number of the specific quote. The participants functions are:

- P1: CEO
- P2: researcher
- P3: venture manager
- P4: startup founder

The test shows interesting results. The knowledge map and assumption map gave the participant the feeling that it gave them hand holds for sharing and documenting knowledge, as P1(1) said as a conclusion of the Knowledge Dump:

'Great. We got so many information already, and that only with one piece of paper.'

The link between the knowledge dump and assumption list was experienced as a nice tool to break down information, but too hard to execute in the current form: P1(6):

'I think it is a good way to go from macro to micro, also because it is a playful way to do so. But with the knowledge dump you are free to write down whatever you want and at the assumption map information needs to be broken down to small pieces, maybe it is smart to cluster in between, then the filling in of the assumption map is easier.'

Therefore the step between shaping the context (Knowledge Dump) and interpreting the context (Assumption map) needs more attention.

The idea of an Assumption map was highly demanded, but in the current form it was too hard to fill in. As P2(11) said: 'I think it is good to do the matrix (assumption map) together or have more interaction in between the steps. Maybe do the assumption map on the wall? Or a step in between where you cluster the information before going to the assumption map?'

Because of time issues the session didn't include the Vision Assumption canvas. During reflection, the idea of the Vision Assumption canvas is discussed. A participant concluded that the scoring bars were experienced as an addition to the current way of stating visions, because it gives insight in if a vision is already researched or not: P1(10):

'I really like the scoring bars, it gives insights in what needs researching, so it is like a to-do.'

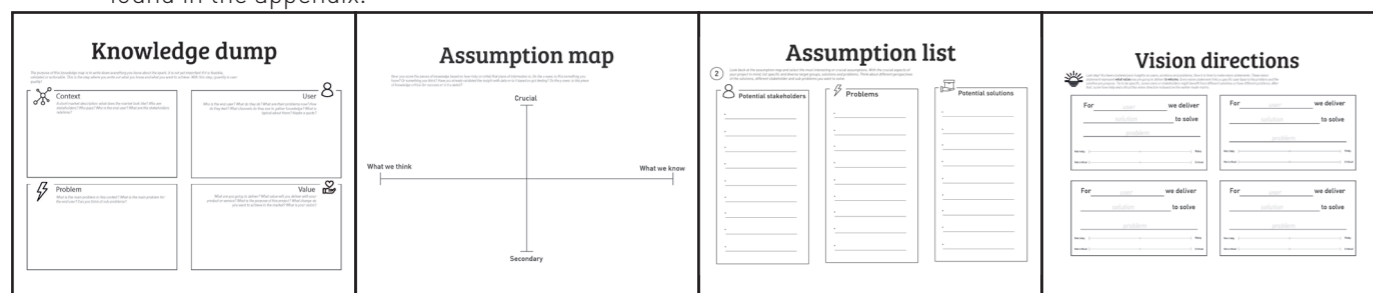


Figure 30 — Materials knowledge dump session

7.2.4. Insights for further development

The goal of this first design loop was to create a method in order to form a clear and concise problem statement that needs to be addressed in research. To create a problem statement, a deep understanding of the context is needed. The Knowledge Workshop did not prove to be as valuable as intended. This was because of the canvasses were not connected enough and the balance between boxes that were free for interpretation (knowledge dump) and structured frames (assumption list) were experienced as too hard to fill in one after the other. Because of this inconsistency, the vision direction didn't provide enough focus to be seen as research directions. Next to this, various insights were gained that were used for future solution development. The insights are linked to the sub-goals set at the beginning of this design loop:



The team needs to get into the context of a project

The Knowledge Dump was experienced as a valuable tool to create overview in knowledge and vision of the spark.



The team needs to agree on the initial vision of a project

The scoring bars on the vision direction map were seen as an addition to the current vision making process, but filling in the vision directions was done too bluntly and the problem was skipped 3 out of 4 times. Since the forming of a problem statement is at the core of the stated design challenge of this research, this needs more attention.



The team needs to discover what needs researching

The team agreed that much more research is needed than initially thought before the session. The Knowledge dump and Assumption map were of most value for this insight. To discover why research is seen as a necessary step, design loop 2 is designed around that topic.

7.3. Design loop 2 - The why of research

Research is found as a necessary step for WAB to take. But, as shown in design loop 1, defining a clear research goal or problem statement is often skipped. **Therefore it is questioned why the participants during design loop 1 skipped the problem definition three out of four times.**

Research at WAB is seen as market research or prototyping. For example, participant 3 mentioned during design loop 1 how market research is of particular importance:

'Research is both desk and field. Which players are present in the current market? Are there comparable ideas already?' P3(6)

During the same session one of his colleagues considered prototyping an important aspect:

'To uncover if an end user likes the idea we just design it and give him a product, a prototype.'
P1(24)

Since this approach to research differs a lot from design, **the goal of the second design loop is to uncover why and how research is executed from a design perspective and an innovation perspective.**

Sub goals of this design loop are:

- Discover what steps of research are seen as useful or useless by WAB
- Discover how design approaches research and why how this differs from the entrepreneurial way of doing research.

This design loop will conclude with insight on how to bridge innovation- and design research.

7.3.1. Method

This design loop consist of two parts: a designer case session and a WAB research session. All materials, session planning, transcripts and data analysis of this session can be found in appendix C12 and C11.

WAB RESEARCH SESSION

The goal of the WAB co-creation session is to get more insights in how research is done in past projects. This is done by co-creating the research map of two WAB startups with the WAB CEO and venture manager.

The WAB research session consists of a presentation around different research methods and purposes, to inspire the participants regarding the diversity of research. Afterwards, the research map, figure 31, was filled in by discussing the research steps of previously launched startups Obeyo and Influentials.

DESIGNER CASE SESSION

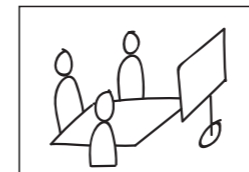
The designer case session is build around the made vision statements by WAB during the first design loop. The goal of this session is to uncover why the designerly way of defining vision statements has a mismatch with the entrepreneurial way of doing so.

The designer case session was a 2 hour session with 2 designers. The Vision Direction canvas and output (recordings, documentation and researchers' observations) from the design loop 1 at WAB formed the basis of this session. First, the spark (the digital practitioner, appendix C8) was introduced. Afterwards, both designers filled in the knowledge dump canvas. Secondly, I played the recording of the WAB CEO discussing his knowledge dump canvas and showed them the made vision statements of design loop 1.

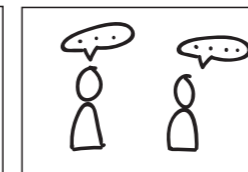
The designers were asked to create a plan on how they would validate if these vision statements are true. When the plan is made, a 'client' (entrepreneur with platform building skill) is introduced and they were asked on how this would effect their research approach.

7.3.2. How it works

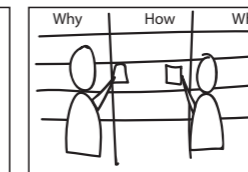
WAB RESEARCH SESSION



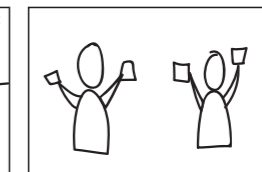
Introduce broadness of ways of research



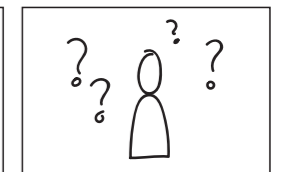
Discuss research approach of WAB



Map out research steps of two ventures

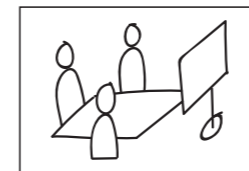


Point out most important learnings

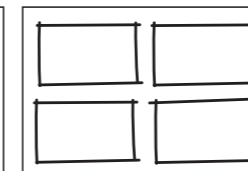


Conclude findings

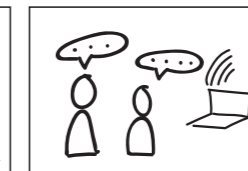
DESIGNER CASE SESSION



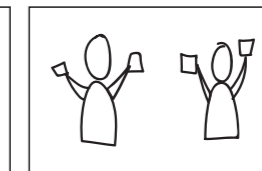
Introduce spark



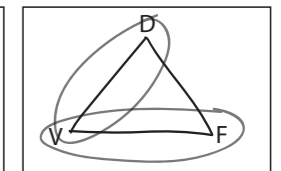
Fill in knowledge canvas



Listen to design loop 1 vision statements



Map and point out why approaches differ



Conclude on findings

7.3.3. Outcomes and observations 7.3.4. Insights for further development

The WAB co-creation session led to the creation of a research map, shown in figure 31. This session showed that the repeated question potential startup CEO's ask WAB is: 'What does the user want?' and WAB has no good answer to this question. As the WAB CEO said: P1(10) : *"[about Obeyo] We've invested 100,000e to hear: do you even know if people want to use it? That hurts. We could have thought of that earlier. We need to discover earlier if there are other parties who share a future market vision and go to that parties and talk to their end users. We need to do research in 200 hours, instead of 2000."*

The research overview of two WAB startups, figure 31, shows that end-user research is not done at the moment and WAB switches to the solution quickly, this is shown when P1(4) said: *'We fall back towards the feasibility quite fast: is this technically feasible? Will it work?'*

The designer case session verified that user-centeredness is prominent in how designers approach to research. This is shown in the way designers approached the vision statements. The two designers involved in this session described the overarching approach of filling in the vision statement as:

For users, we deliver [something we don't know yet], to solve [something our research will show is lacking]

This design loop turned out to be an addition on already done research during the discover phase of this graduation. The most interesting insights all focuses on why research is done in a specific way, from two perspectives:

1) WAB is experiencing research as time consuming, where innovation is fast paced. They are struggling on how to combine the two and are looking for ways on how to do so, like a WAB employee said:
S(8) : Maybe we should have a 'theme year' and focus on one market only. This way you build a network and you can include them in generating new ideas.

2) Research is the activity of gathering knowledge, not gathering verifications of earlier made decisions (backwards engineering). This is described by the participant as 'afterwards validating':
S(2) : Every time it is the same: find competitor, understand their value proposition, find potential customers to interview about the problem. Limitations of this strategy is that validation is done afterwards so you search for what you want to hear instead of what you have to hear.

3) As shown in chapter 3, end user research is something designers are very familiar with. This is the opposite of the insight of the WAB co-creation session: where user research is not part of the current research strategy. This led to the emergence of a big insight, rescoping the design goal of the project, discussed separately in the next chapter.



	RESEARCH STEPS	HOW	WHY	RESULT	LEARNING
	1) Desk research 2) Identify client needs 3) Research service living projects Launch MVP (hours spend: 1000) 4) Research end-user needs 5) Search founders 6) Analyse MVP data	1) Google search 2) Interview innovation managers 2) Competitor comparisons 2) Telephone interviews 3) Networking 3) Marketing websites of building initiatives MVP: create future vision 4) Personas 4) Interview other service deliverers	1) To create market understanding 2) To create a competitor overview 2) Identify market positioning 3) and MVP) Validate business case 4) Identify if users want to use the concept 6) Find friction in the MVP	1) Competitor overview 2) and 3) Pilot partner 3 Pitch desk with revised mission and vision	1) Future vision report are usefull data overviews 2) All interviews created a good basis for potential pilot partners MVP) The current solution is nice, but is it needed? MVP) Is the timing right? MVP) The MVP is not used 'enough' MVP) Communication between residents and the service deliverer is essential
	1) Desk research 2) Identify client needs 3) Research influencer marketing projects Launch MVP (hours spend: 3700) 4) Interview 1 or 2 user on MVP experiences 5) Revise MVP based on usage and interviews	1) Google search 2) Interview marketing managers 2) Competitor comparisons 2) Telephone interviews 3) Networking 3) Websites of marketing companies MVP: validate product vision 4) Telephone interviews 5) Recreate product form and business model	MVP:) Usage levels of MVP were very high 5) Change problem statement and therefore product delivered	MVP) Demand is validated 5) Influencer marketing is currently too unknown so information delivery is needed	MVP) Pricing is right MVP) Brands don't know how to approach influencers

Figure 31 — WAB rsearch overview

7.4. Friction!

The difference between design research and entrepreneurial research

As discussed in the discover phase, design loop 1 and design loop 2, there is a difference between the explorative way design (and therefore me as a designer) approaches research and the direct and market focussed way of WAB

research, showed in design loop 2. Why this friction occurs is defined in different views on a vision statement, formed during analysis of the designer case session of design loop 2:

Design way of approaching a vision statement:

For users, we deliver [something we don't know yet], to solve [something our research will show is lacking]

Entrepreneurial way of approaching a vision statement:

For [a client in a specific market] we deliver [something we can build], to solve [the clients' demand]

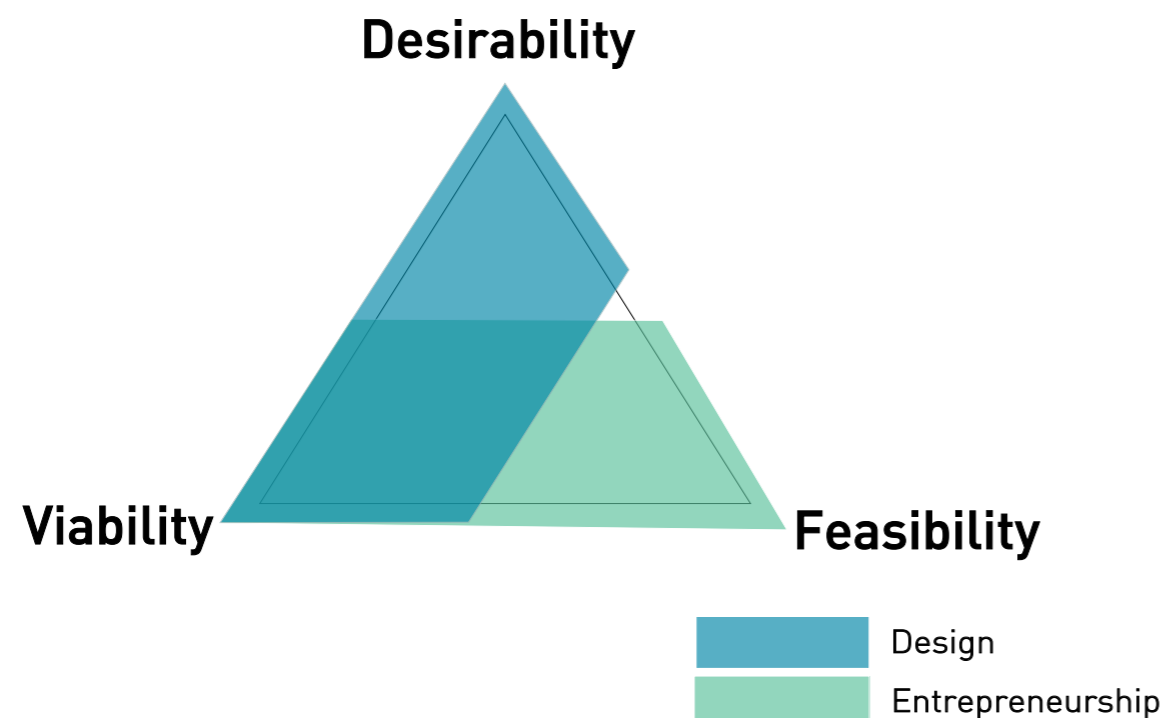


Figure 32 — Design and entrepreneurial focus friction

Entrepreneurship approaches a challenge from inside out: what is feasible: what is our unique selling point as a company and what can we make? And in what market can we find demand for that skill? Design research focuses on linking viability: market demand and future vision, with desirability: deep user understanding and stakeholder needs (figure 32). As stated in chapter 3, to increase potential success, you have to balance viability, desirability and feasibility. In the WAB ideation strategy, the desirability aspect of an idea is currently not equally addressed as the Feasibility and Viability aspects. This can be one of the main causes of why research currently doesn't provide for

a solid base for solution creation. This insight asked for reflection of the earlier stated design goal on two parts. To make desirability an equal pillar in the explorative research guide the understanding of the opportunities needs to be user-centered. To create a better understanding if all pillars (desirability, viability and feasibility) are addressed, the research guide needs to provide entrepreneurs with a way to create, visualize and communicate knowledge. With 'visualize' is meant that the guide has to help the (entrepreneurial) researchers to directly see if all pillars are equally addressed. With this new finding, the design goal is revised to:

Design a guide for explorative research that helps startup studios to create a holistic, and therefore user-centered, understanding of opportunities, do so by providing a way for entrepreneurs to create, visualize and communicate knowledge in early phases of the innovation process.

User-centered

The goal of the explorative research guide is to help startup studios to create a holistic understanding of opportunities in which the desirability, Viability and Feasibility are all equally explored and balanced out.

Create, visualize and communicate knowledge

The research guide must guide the user to create knowledge in a structured way. The structure must ideally be visual, since this makes communication of research easier for the researcher as well as the receiver to understand. The research guide must therefore pay attention to how knowledge is communicated during research and in communicating insights.

7.5. Design loop 3 - Empathize

To grow the ability of WAB to research with addressing desirability, the third design loop will focus on creating empathy for end users. This is done by using the d.school 'Wallet Exercise - an introduction to Design Thinking' of the Stanford School of Design (2013) [appendix 13]. This exercise is a way to show non-designers the value of creating empathy for end users and therefore design a desirable solution. With this exercise the non-designer needs to empathize with the person he is designing for. The method is guides the non-designer in creating empathy using the process of Design Thinking.

With the Wallet Exercise participants get the feel of all design stages (define, ideate, prototype, test). **The goal of this design loop is to let participants experience the value of engaging with real people and to help them ground their design decisions before and during development of a solution based on these engagements.**

All materials can be found in appendix 12, the evaluation transcripts of this session can be found in appendix C13.

7.5.2. How it works

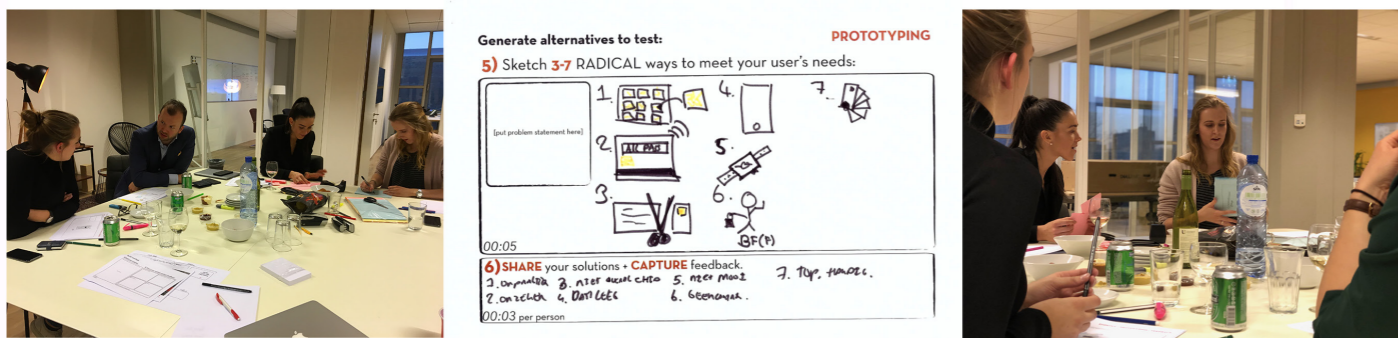
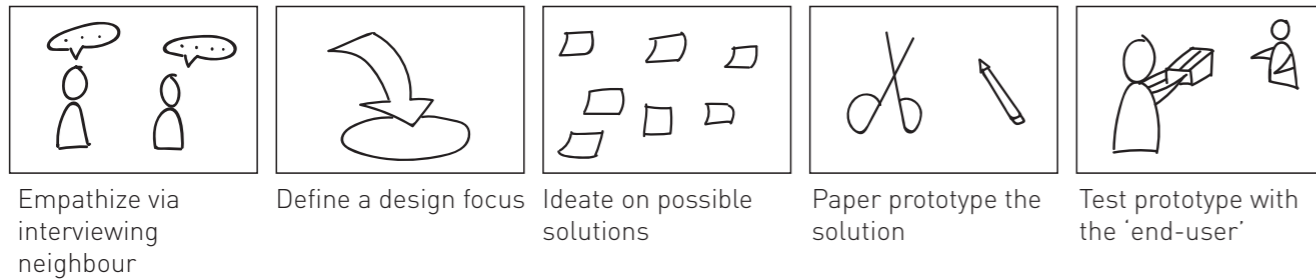


Figure 33 — Impressions from the wallet exercise

7.5.3. Insights

The wallet exercise showed that asking 'why' to your target group was seen as a useful addition to do research. Asking why creates new insights and enables the researcher to understand the end-user on a deeper level. An example of this was pointed out by P1:

P1: I didn't think about this solution in the beginning!

Marloes: what made you think about it in the end?

P1: yeah... I don't know. The whole time the practical aspect of the solution came back, I wrote it down like five times.

Marloes: why did you write it down five times?

P1: it is because I asked why a lot, and she kept giving me the same answer. For me a wallet must be pretty.

For idea generation the process of Design Thinking was seen as less valuable. This because idea generations feels very intuitive to the participants, like P3 pointed out during design loop 1:

"...If a spark comes in and you didn't think of solutions yet, I always envision a particular solution in my head. I have a solution idea directly from the start, this is because I'm an entrepreneur. As an entrepreneur you never think about 3 possibilities, you just have one very good idea. We always think on how to fit the idea in a buildable frame, maybe something we have seen already. P3[37]"

WAB forms a solution is often directly when a problem is identified. During idea generation the vision and the experiences of the entrepreneur are guiding the direction of the solution. This also showed during the wallet exercise when P1 made a wallet for P2. During reflection P2 stated:

'It is an insight that P1 added his own opinion to the solution, he searched for a mid way between my wishes and his point of view.'

7.6 Pivot

The insights of design loop 1 and design loop 3 combined asked for another pivot in the design direction (figure 34). The discovery stage shortly addressed the value of design in the idea generation phase where techniques are used to explore creative solutions before building a specific solution. Design loop 1 and 3 showed that because the vision of entrepreneurs is so strong, idea generation as done in the Design process, doesn't fit the startup studio's ideation strategy. Therefore it is decided not to include 'idea generation' as a step of the explorative research guide.

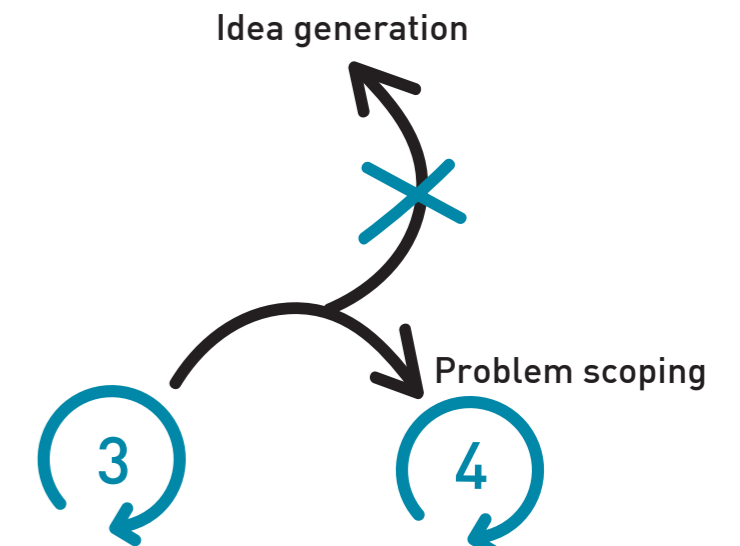


Figure 34 — Project pivot



Conceptualization

In the conceptualization chapter the findings from the discover phase and the experiments from the design phase are combined into the final framework for the explorative research guide. The framework is tested with a framework concept to evaluate if this framework can form solid and desirable building blocks for the final design.

8. Conceptualization

8.1 Explorative research guide framework

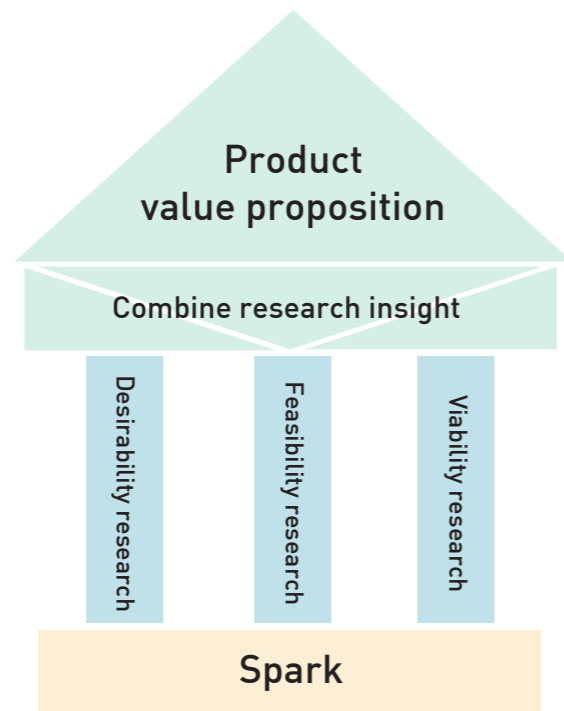


Figure 35 — Explorative research framework

The goal of the explorative research guide is to 'help startup studios to create a holistic, and therefore user-centered, understanding of opportunities'. As discussed in chapter 7.4., to review a startup, research has to touch upon desirability, viability and feasibility in balance. The explorative research guide must therefore create a way to create insights into if the current research balances each aspect. A framework for the research guide (figure 35) is designed based

on the Lean Canvas (Maurya, n.d.) and creative techniques to translate knowledge to insights. The sketches and ideas of this framework are often discussed and revised with the design champion, since the researchers of WAB are the end user of the solution to be designed according to this framework. The raw data of the model and the exact process of how the framework is designed can be found in appendix 13. The framework will be discussed using the design challenge:

Design a guide for explorative research that helps startup studios to create a holistic and user-centered understanding of opportunities, do so by providing a way for entrepreneurs to create knowledge, visualize knowledge, translate knowledge to insights and communicate findings in early phases of the innovation process.

Holistic and user-centered understanding of opportunities

The process of WAB research doesn't address desirability as an equal pillar, the framework tackles this by creating as many attention to viability, feasibility and desirability aspects.

This will make the process holistic, figure 36. By emphasizing desirability and therefore the end-user, the process will become more user-centered and therefore equally divided.

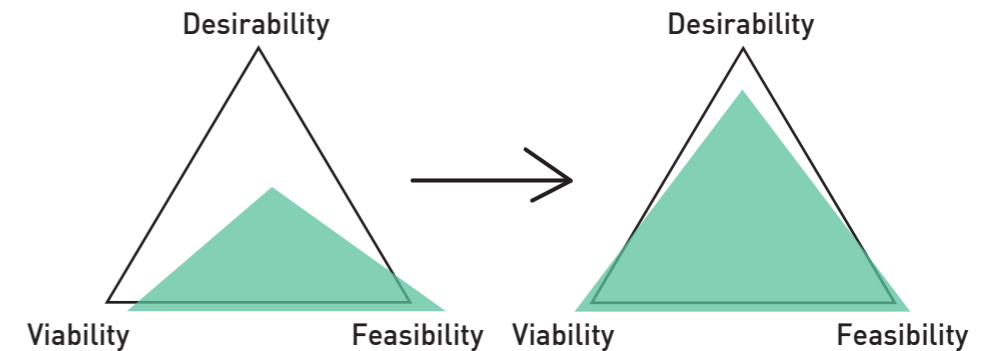


Figure 36 — Holistic research

Create knowledge

As seen in discover, it is currently hard to capture what is already researched and what information is based on assumptions. Therefore the framework is based on the theory of known and unknown knowledge (Rumsfeld, 2002) (figure 37) where knowledge exploration is stimulated. With this exploration in mind, the

framework must always be open to add or change information when new knowledge is gathered. The framework must finally stimulate users to share insights and ask questions to others to explore if there are knowns or unknowns yet to be discovered.

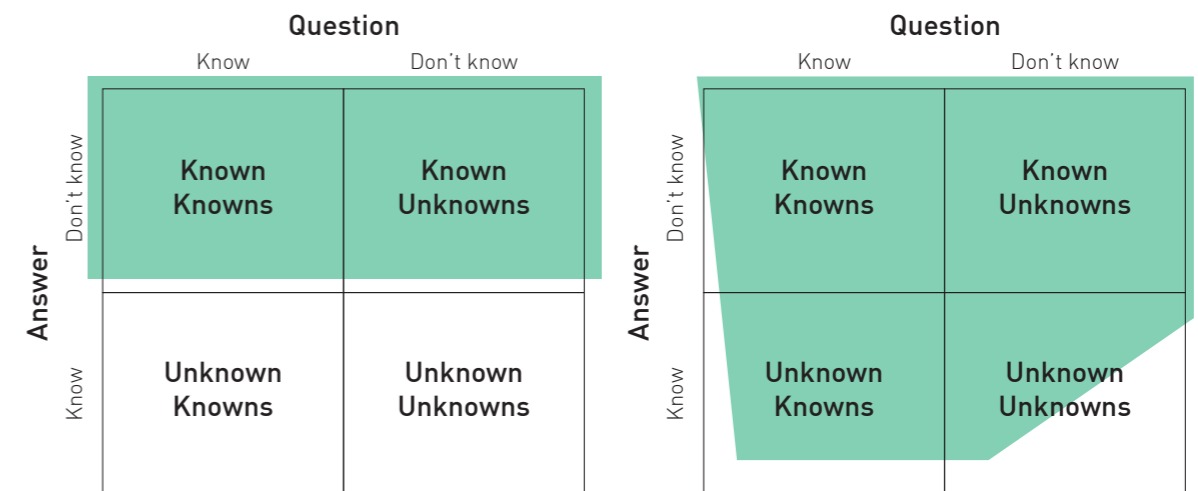


Figure 37 — Known and unknown knowledge

Visualize knowledge

To make the process of creating insights from knowledge easy and smooth, the framework must have clear goals and frames to store knowledge in a visual manner. Frames are used to place information in perspective of creating a holistic understanding right from the beginning. Frames divide tasks into small pieces, what makes the task more understandable and approachable. Design tools and methods are stated to be valuable in creating overview. To give the user this overview throughout

the framework, design frames are gathered or designed to stimulate exploration and visualization. This is particularly useful during exploring the context of a spark. To make sure the explorative research forms a basis for a holistic context understanding, the frames must equally touch upon the desirability (D), feasibility (F) and viability (V) pillars (figure 38).

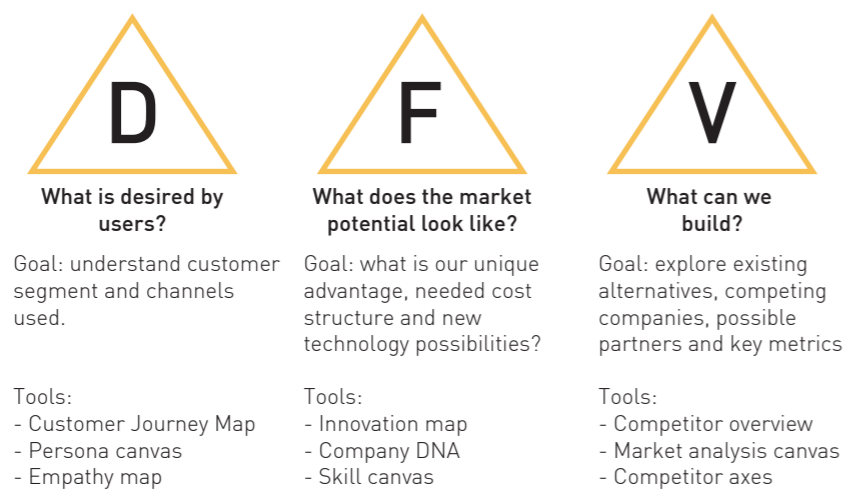


Figure 38 — Goals and tools

Translate knowledge to insights

After the explorative phase that is based on the three aspects of holistics, knowledge needs to be translated to insights (figure 39). Since the creation of insights can be felt ambiguous or unclear, design techniques like a morphological chart, two-by-two matrices, and clustering (Van Boeijen Daalhuizen van der Schoor 2014) can be used to stimulate researchers to combine knowledge and to create insights. These methods help to visualize key challenges by showing the relationships between multiple associated factors (Beckman and Barry 2007).

It is important that this step is executed in a collaborative manner to stimulate creativity and enthusiasm towards creating new insights within the research team.

In this part the following questions must be answered:
[DxF] - How can we build the desired value?
[FxV] - How can we deliver a product that fits market demand?
[DxV] - How can we match market trends with the demanded user value?



Figure 39 — Cluster pillar knowledge

Communicate findings

To communicate findings, the framework combines insights in projects' value proposition. This value proposition must be created based upon the findings of research and exploration in earlier parts of the framework. To make this fit the current way of communicating and translating knowledge at the startup studio, the visualization and communicating of findings is done via the use of the Lean Canvas (figure 40). The Lean Canvas by A. Maurya (n.d.) is

created to translate the Business Model Canvas (Osterwalder, 2010), to a more problem focused canvas, this makes the Lean Canvas suited also for this framework. The Lean Canvas will structure the findings again, and therefore creating a solid overview of the explorative research. The creating of this overview must be done in a collaborative manner to create focus of the projects' goal at the whole team.

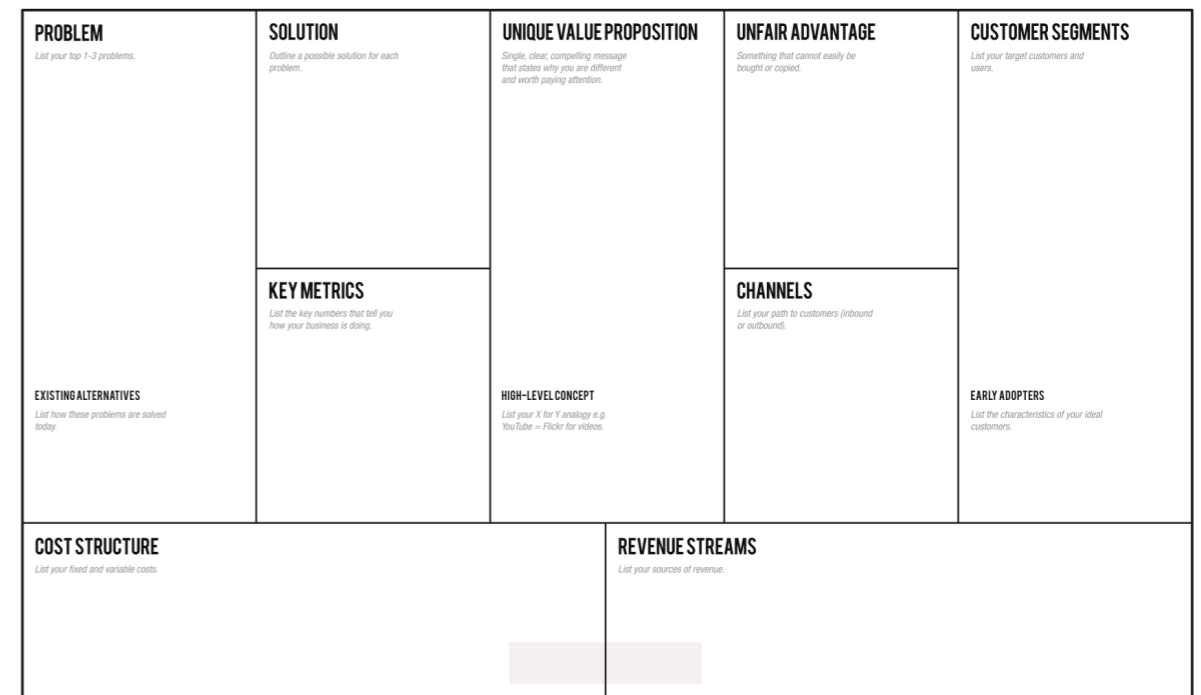


Figure 40 — Lean Canvas (Maurya n.d.)

8.2 Framework testing

To test the framework, a four hour creative session is created around Obeyo, the new WAB startup. Obeyo is a 'Living as a Service' platform created by WAB. The concept is already tested with an MVP, but a clear focus and research behind the MVP was lacking. Since some research is already done, but never in a structured way and a clear value proposition lacks, Obeyo forms a good case to test the research framework. All materials (appendix 15), session planning (appendix 14), presentation and outcomes (appendix C14) can be found in the appendix.

The session was joined by a researcher, the WAB CEO and a (potential) Obeyo CEO. This CEO wasn't yet hired by WAB. This makes that the session functioned as a test for my explorative design framework, as well as a test for the potential CEO of Obeyo. How this effected the session will be discussed in 8.3..

Since time needs to be used efficiently, the whole framework is tested in a 3 hour session without including the activity of doing research. This was not viable in the timeframe of the session participants. To test the framework, this is sufficient, since research to the context of Obeyo is already done in the past by the WAB CEO (market analysis) and the researcher (end-user research, not yet finished). The potential Obeyo CEO also has experience as an entrepreneur in the real estate market, so his knowledge of the topic is sufficient for the session. WAB created a Obeyo MVP, shown in chapter 4.1. This MVP is already in use for several months by one customer.

The goal of the session is to uncover if the framework can form a basis for an explorative research strategy for WAB. To test this, the framework is translated to a collaborative session consisting of 5 phases. The presentation used during the session can be found in appendix 15. All phases, and their link towards the framework discussed in 8.1 will be discussed seperately.

1 - MAKE SURE THE BASIS IS SOLID

The session started with an introduction of the participants and an introduction to the Obeyo MVP, that formed the topic of the test session. To align all stakeholders the current context of Obeyo is presented by the WAB CEO.

Afterwards, the participants filled in the revised knowledge dump canvas (figure 41) from design loop 1 (appendix 11). The goal of the canvas is to uncover the context and align the participants'

vision on Obeyo and the context of the Living as a Service concept. This step was used to create shared understanding of eachothers individual vision on the context and the product.

2 - EXPLOIT YOUR EXPERTISE

After the knowledge dump, every participant was responsible for one of three pillars of holisticity, the one that fitted their expertise best. In this case the WAB CEO was responsible for the feasibility pillar, the researcher was responsible for the desirability pillar and the potential Obeyo CEO was responsible for the viability pillar. This division was made by me in consultation with the WAB CEO in advance of the session. This phase consists of three canvases per pillar (figure 42) (appendix C14). The goal of the canvases is to give handholds to the participants in exploring their pillar. By using visual frames, it is clear to a person what information is currently present and what information is still lacking. It also allows a participant to share his knowledge more easily. The canvases are designed based my experience with design canvases and the findings from design loop 1 and 3.

After filling their own canvases individually, the participants put the canvases on a wall ready to transfer to the next step.

3 - TRANSFER KNOWLEDGE TO INSIGHTS

To translate knowledge on the canvases to insights, the third step started with sharing the filled in canvases in an open discussion. This discussion allowed all participants to understand what knowledge is gathered at the other pillars and to add knowlegde where they can.

The design goal, stated in 8.1., adressed that the framework must assist users in translating knowledge to insights. To do this, I designed three axes that can be used to stimulate knowledge clustering and combining (figure 43).

1

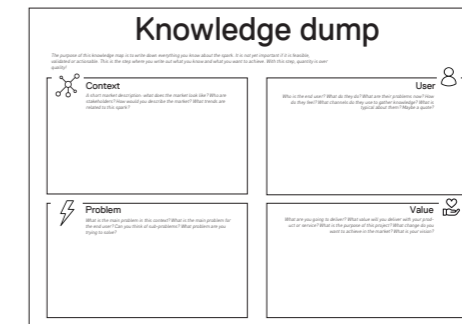


Figure 41 — Revised knowledge dump canvas

2

D
F
V

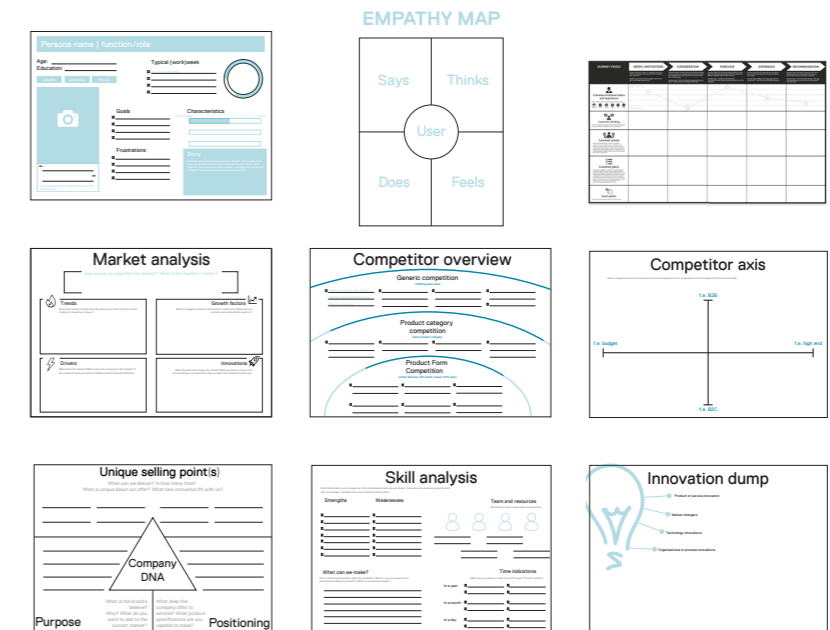


Figure 42 — Session expertise frames

3

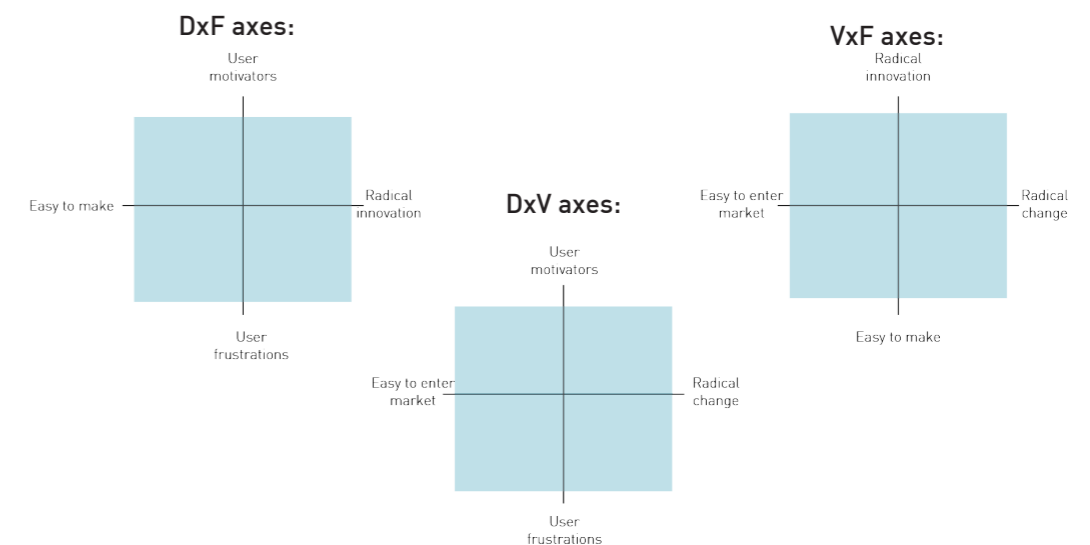


Figure 43 — Cluster and combine knowledge

4

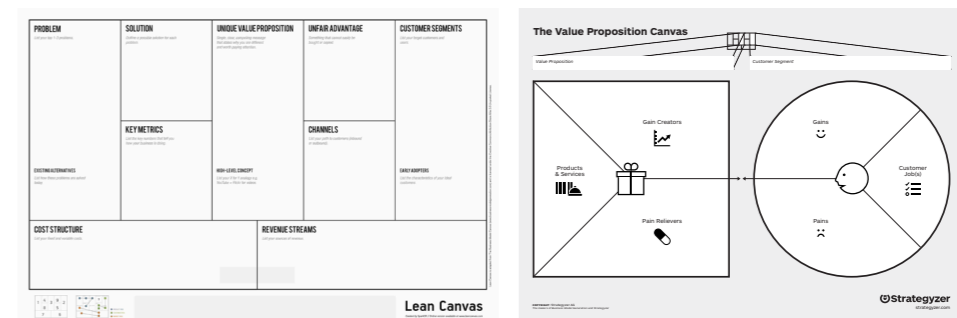


Figure 44 — Lean canvas and Value proposition canvas

All axes (three) combined two pillars by addressing each pillar on the X or Y axes. The D stands for the desirability axes, F for feasibility, V for viability.

These axes were printed on individual A3 papers and the participants were asked to write individual insights of their part of research on post-its after finishing filling in the pillar canvases.

These post-its are plotted on the axes to see where information are linked to each other. The goal of the axes was to see what pieces of information would be valueable combinations.

Concluding the step, three questions were answered in a discussion between the participants:

- [DxF] - How can we build the desired value?
- [FxV] - How can we deliver a product that fits market demand?
- [DxV] - How can we match market trends with the demanded user value?

4 - PRODUCT VALUE PROPOSITION

After exploring the context, detailed understanding of desirability, viability and feasibility aspects of Obeyo, the participants filled in the Value Proposition Canvas (Osterwalder et al. 2014) (figure 45). Filling in the Value Proposition Canvas functioned as the funnel towards deciding for who, the team is going to design what. I choose to not directly move towards the Lean Canvas (Maurya n.d.), because the Lean Canvas asks for detailed information regarding the topic, based on a value proposition. Therefore, I decided to first create a clear value proposition that functions as the transition step between knowledge and decisions. This is the part where knowledge is translated to insights. This is done in a collaborative manner, where the facilitator (me) stimulated discussion.

After the value proposition map is filled in, the participants transfer the made value proposition to the Lean Canvas. Afterwards, the participants filled in the Lean Canvas (figure 46) based on the value proposition and the knowledge gathered in the pillar research. Again, the facilitator stimulates discussion and addresses if something is unclear or out of scope of the value proposition.

5 - RESEARCH PLAN

During the whole session, the facilitator functioned as a 'research opportunity spotter'. This means that as soon as one of the participants mentions that something is unknown, or that something needs more research, the researcher writes this topic on a post-it and parks until the Lean Canvas is filled in (figure 46). At the end of the session, these post-its, shown in the upper left corner of figure 47, with research opportunities are evaluated, clustered and prioritized in the form of questions by the participants (figure 47), this allows the participant to write down research questions that needed to be answered to sharpen the created value proposition and business plan.

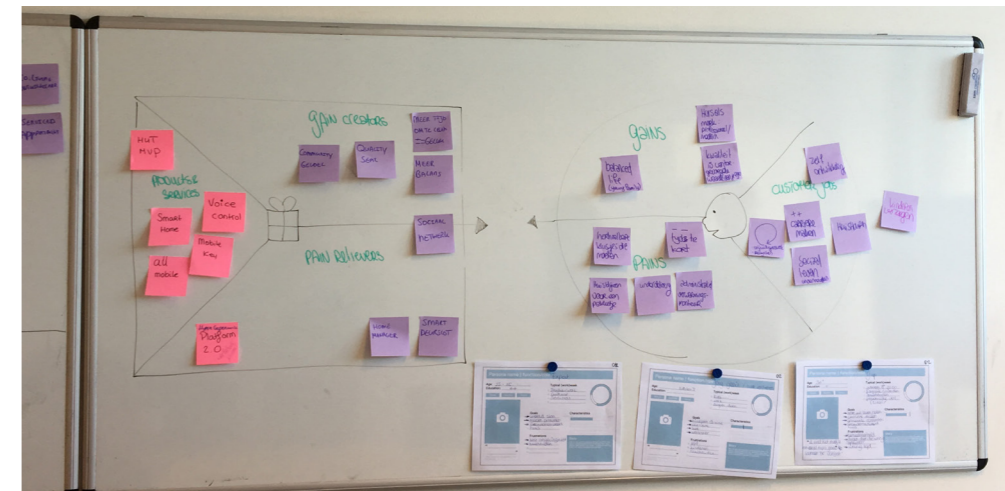


Figure 45 — alue Proposition Canvas



Figure 46 — Lean Canvas

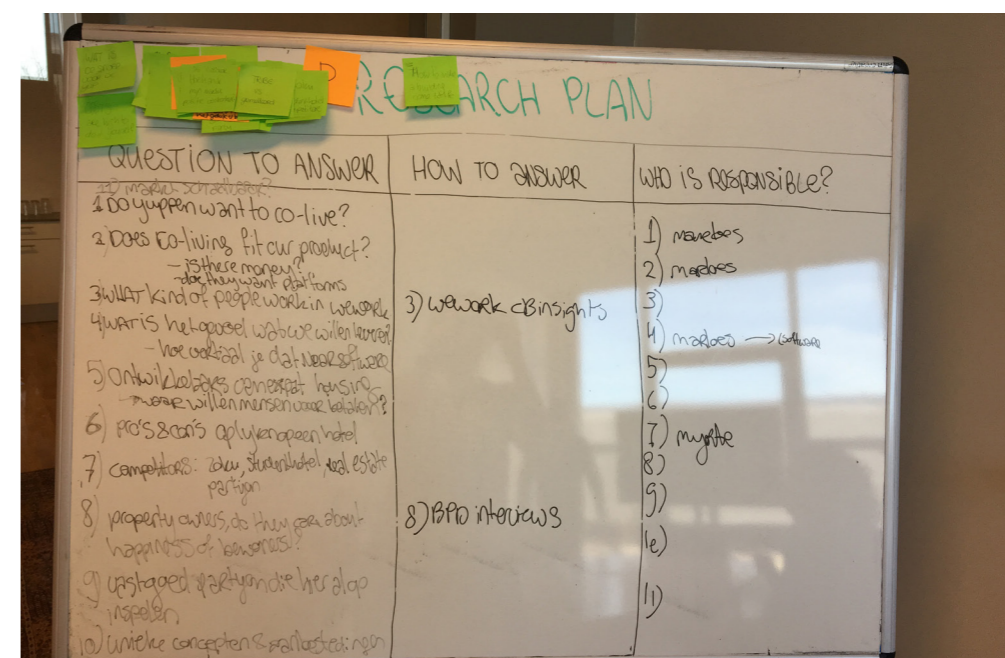


Figure 47 — Research question to be addressed

8.3 Framework evaluation

The framework and test session will be evaluated based on the session observations and the design goals stated in chapter 6. All the content created during the framework test, a report of the outcomes per canvas and final result, the Lean Canvas (Maurya n.d.) and research plan of the new WAB startup Obeyo, can be found in appendix C14.

During the session, I fulfilled the role of facilitator as well as the role of researcher regarding the research framework. Evaluating the session material with participants was done quickly. This because the commitment of three hours for the session was experienced as long and intense for the participants. Also, a miscommunication on roles of me as an ideation process researcher instead of a startup researcher formed that I focussed on creating a session findings document for WAB about Obeyo. This research document can be found in appendix C14. The evaluation of the materials used during the session was done with the WAB researcher in an informal conversation and by recalling my own observations. This resulted in the following findings:

DOING RESEARCH

During evaluation, the researcher and I took in mind that phase of doing research (the research pillars) will actually occur in reality. This was not the case in the session because of time issues. This is one of the most important steps of the research framework. The researcher experienced the empathy map and innovation map are not useful. This because these canvases were not adding any new information to the other two canvases within their pillar (desirability and feasibility).

LINKING INSIGHT

During the session it turned out that I overestimated the ability of the participants to use post-its as a mean to create overview, for example with clustering. Almost all post-its used during the session were written down by me, and clustering was skipped. This showed especially during the axes where insights were combined. Since the canvases that were used in the pillar research step are filled by writing on the canvas itself, it is seen as insufficient to rewrite all information to post-its and use them to create an overview on the axes. During the session the participants had a lot of questions

about why we were using the axes and what the goal was. Therefore I concluded that the axes are too ambiguous and are not contributing to the flow of the session. The questions after the pillar research phase ([DxF] - How can we build the desired value? [FxV] - How can we deliver a product that fits market demand? [DxV] - How can we match market trends with the demanded user value?) were experienced as a useful step towards combining insights. During the session this was done in the form of a conversation. The advantage of a conversation is that the participants can easily react to each other. The disadvantage of a conversation is that the facilitator must pay close attention to document the answers afterwards.

COLLABORATION VERSUS INDIVIDUAL

WORK

The balanced of individual work and discussion was experienced by the researcher as close to optimal. When addressing all steps in one meeting, a lot of work (doing research to fill in the canvases) needs to be done prior the meeting. The chances that this is not done are high, since people don't yet experience the urgency before the start of the research phase. It is also not desirable, since the team would not have agreed on a shared understanding of the scope of the spark (this is done during filling in and discussing the knowledge dump canvas). To make the framework of doing research workable, we decided together to split the process of explorative research in three time frames:

2 hour meeting - start of the project, fill in and discuss the knowledge dump canvas, divide the research pillars or canvases between the team members.

2 weeks of research - in a period of two weeks, all participants are responsible for doing research to fill in their individual knowledge dump canvases

2 hour meeting - two weeks after the start of

the project, the team meets again to discuss the information gathered based on the filled in canvases. The team together answers the questions that translate knowledge to insights ([DxF] - How can we build the desired value? [FxV] - How can we deliver a product that fits market demand? [DxV] - How can we match market trends with the demanded user value?), fills in the Value Proposition Canvas and the Lean Canvas. During this meeting, the facilitator is still needed to address if something is unclear or needs more research and to point out findings and conclusions for future documentation.

8.3.2. Framework evaluation

To evaluate the framework to the research prior to the design phase, the framework is evaluated based on the design goals stated in chapter 6.

- The design needs to create a framework to evaluate sparks to start the explore phase in a structured way

The workshop allowed the team to explore the context of a spark in a structured way using the Knowledge Canvas. In design loop 1, as well as in framework test, this canvas is experienced as a useful way to create an overview of knowledge and to get to know how other team members think about the spark. The design allows to evaluate a specific spark, but it is not tested if this approach also allows the team to evaluate sparks with each other.

Also, the knowledge dump framework is tested based on two different spark (Digital General

- The design needs to manage the transition from 'spark' to 'problem understanding and project framing'

The research guide allows the team to explore the spark with a holistic approach. In the test session, after the Lean Canvas was filled in, no decisions were made on where to focus on. This was because of timing issues at the end of the session as well as because the discussion between the participants was very vivid during the Lean Canvas step and the facilitator did not focus enough on guiding the participants towards decision making.

- Create a clear project goal to reduce the mistakes currently made during the involvement of a client.

This design goal could not be tested during the session, since an external client is not involved yet in this case. Creating a project goal is done by filling in the Lean Canvas based on explorative research in insights. But as stated in the evaluation of the second research goal, no decisions on focus directions were made during the session.

- The design must give WAB handholds on how to approach discovering latent needs for problem framing

The framework did give WAB handholds on discovering latent needs for problem framing by creating visual overviews throughout the process. Handhold on HOW to discover not yet researched latent needs must be addressed after the research plan is written. This needs more attention in the final design.

The design needs to let WAB understand the value of exploring and open ended research

The framework test, as well as the previous design loops showed that the participants discovered unknown unknowns during participation. A facilitator played an important role in spotting and documenting these insights. The step from discovery towards action therefore needs more attention in the final design, when a designer is maybe not part of the research team.

Final design

This chapter translates the framework via design goals to a final design: IGNITE! This final design consists of two parts: an MVP and a prototype. The IGNITE! MVP covers a booklet of the explorative research guide, including methods, tools, and the facilitator guide. This MVP is a first embodiment of how the framework is translated to a workable concept. The second part of the final design consists of a digital prototype of the IGNITE! software. This prototype shows how the process can be digitalized. The IGNITE! prototype consists of a clickable wireframe and building plan. The clickable wireframe shows how the process flow can be digitalized. This building plan consists of user stories covering the full research process and product flow that function as a guide for WAB to translate the process into software.



IGNITE... LIFT-OFF!

The final design chapter will translate the framework towards two deliverables. First, the design requirements are revised and translated towards the different deliverables. Afterwards the two deliverables will be discussed separately.

The first deliverable is the IGNITE! MVP (figure 48). This is a booklet of the Explorative Research method including a toolset and facilitator guide based on the the framework tested in the conceptualization chapter. The goal of this deliverable is to make WAB able to put the ideation strategy into practice starting today.

The second deliverable is a prototype of how the IGNITE! - Explorative Research Platform can look like when the process is digitalized (figure 49). This deliverable consists of a clickable wireframe and a building plan in the form of epics and user stories, explained in chapter XX. The goal of this deliverable is to give WAB the ability to make a digital product of the explorative research method in the future.

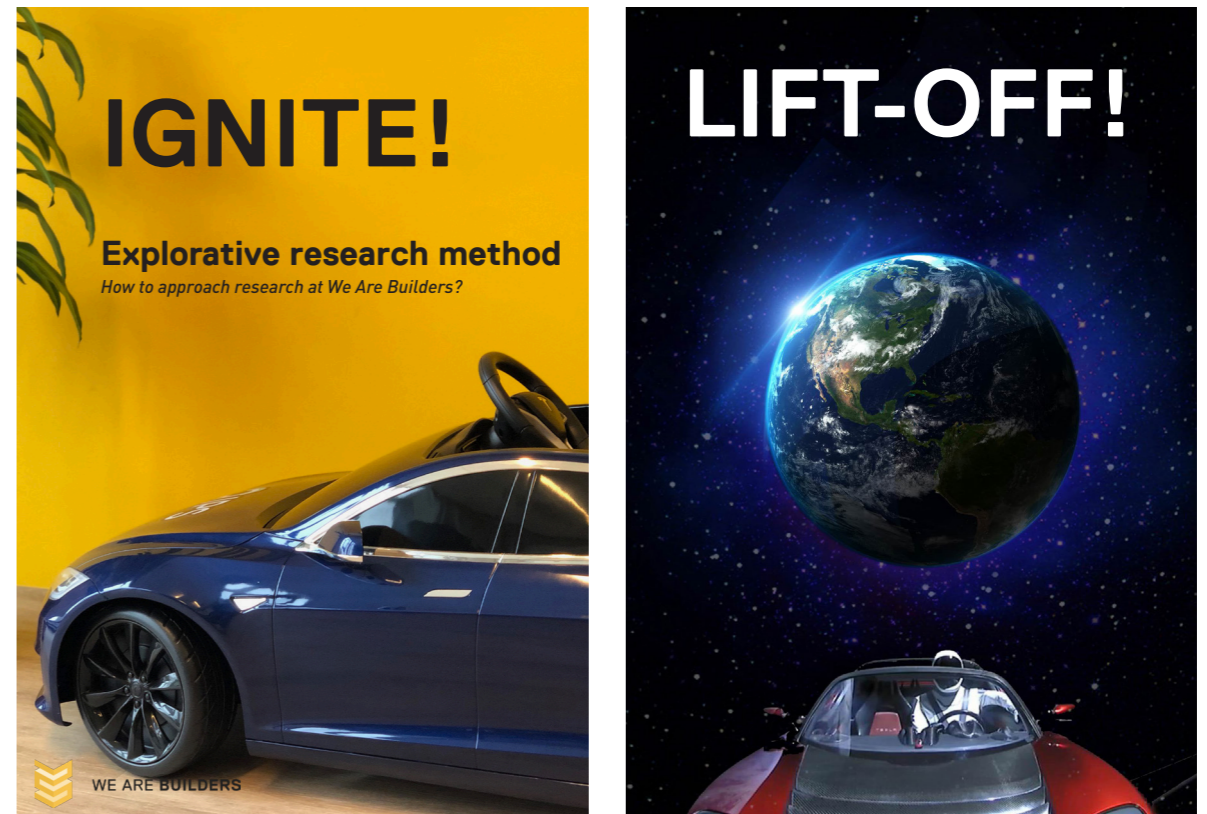


Figure 48 — Front and back of IGNITE! MVP booklet

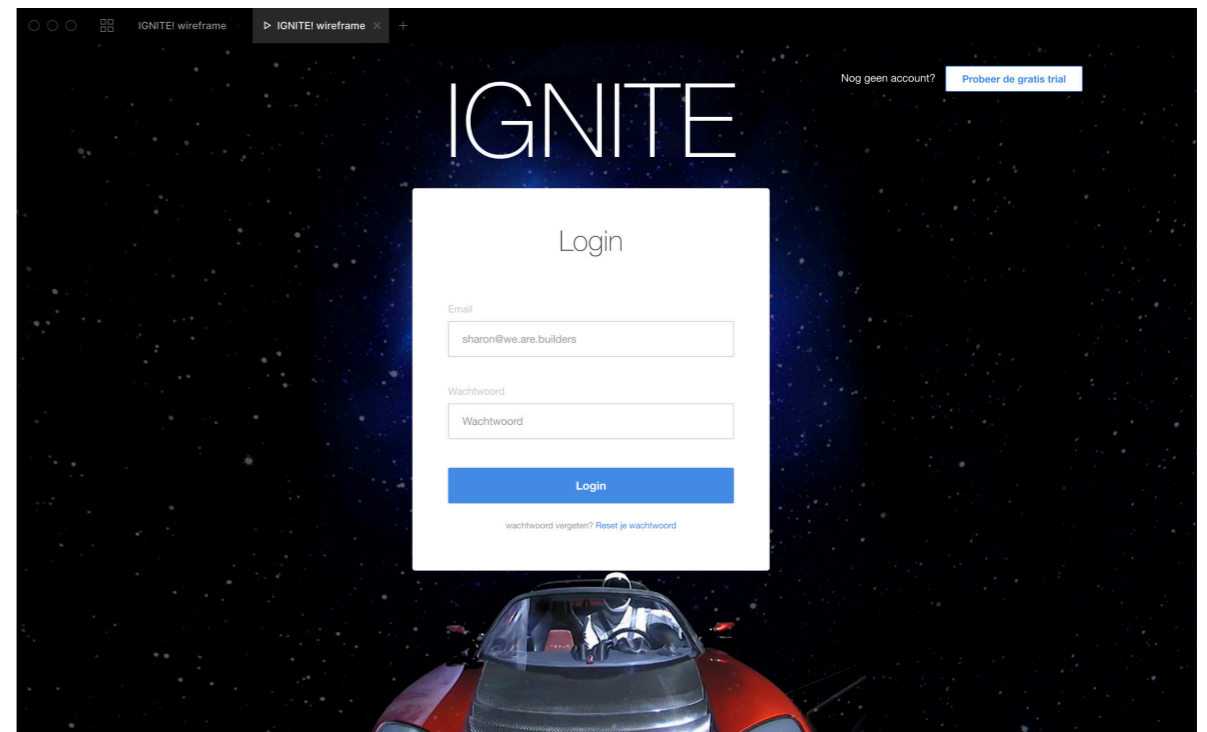


Figure 49 — Log in screen of IGNITE! Explorative Research Platform

9.1 Final design requirements

The framework evaluation showed that the design goals stated in the define stage need to be specified to create a focussed and consize design. This is done by reframing the design goals and cluster them based on the final deliverables. This is done because every deliverable has a clear focus. The Explorative Research Method booklet has the goal to let WAB be able to use the tools and methods right away, but this does not cover project management tasks or a clear and set process flow.

It is unrealistic in the time frame of this graduation the prototype of IGNITE! can be build to a workable digital solution. The prototype therefore focused on giving insight in the basic process flow of the IGNITE! research method.

To bridge the gap between the booklet and the wireframe, and to adress the design goals that are not met by the booklet or wireframe, a building plan is made to show how to translate the explorative research method explained in the booklet to the wireframe explained in the prototype.

Design a guide for explorative research that helps teams to create a holistic understanding of opportunities, do so by providing a frame to create and visualize knowledge, translate knowledge to insights and communicate findings in early phases of the innovation process.

MVP

- The design needs to create a framework to evaluate a spark. This with the result that the explore phase is executed in a structured way.
- The design needs to manage the transition from 'spark' to 'problem understanding and framing'
- The design must give WAB handholds on how to approach discovering latent needs of stakeholder to create empathy regarding the problem and the user
- The design must let WAB better understand the value of exploring and open ended research instead of only focus research on filling knowledge gaps
- The 'why' of every step must be clearly written down in WAB language. This means that the higher goal and what a step is going to deliver must be clear immediately.
- The process should stimulate to work simultaneously on desirability, feasibility, viability aspects of the problem. It should also stimulate knowledge sharing between the different topics and team members.
- The design must create a clear project goal to reduce ungrounded focus shifts during the involvement of a client.
- The design must give WAB handholds on how to diverge and explore during idea generation and make decisions afterwards based on earlier done research

Prototype

- The process must be able to make (partly) digital. This because digital is embedded deep into the way of working for WAB
- Downloads of tools and methods must be in the product to create direct call to actions.
- The process should stimulate to work simultaneously on desirability, feasibility, viability aspects of the problem. It should also stimulate knowledge sharing between the different topics and team members.

Further development

- Every step must be referenced by an external party who or made the tool, or used it and explains about it. This because it gives practical evidence of the use of a specific tool and to give an example of who a tool is used.
- The process must be leaded by the questions raised during the process. This means the process should be able to transfer knowledge from one step to the other in an easy and cooperative way.
- The process must be able to made (partly) public to stimulate knowledge sharing between entrepreneurs. This because WAB wants to stimulate learning between entrepreneurs.
- The process consists of steps, gate checks, tools, deliverables and explanation of tools and methods. This to stimulate the building of design knowledge at individuals.
- The explorative research guide deliverables should fit with the next step in the startup building process of WAB, the creation of an MVP. This means the insights must be understandable for researchers, designers, management and software developers.
- The process must be leaded by the questions raised during the process

9.2. Explorative research method

The explorative research method is a method designed with the goal to translate sparks to research to insights in a structured way. The goal of this explorative research method is to create a holistic understanding of opportunities in a specific context. A holistic understanding means that research touches equally upon the desirability, feasibility and viability aspects of a spark.

This explorative research method explores viability with market and competitor research, desirability by indicating the users and their scenarios, and feasibility via skill and company analysis. The goal of this research method is to create overview in what is known and what is yet to discover. In this context, the canvasses function as a visual reflection of a to-do list, and a way to explore in order to create a focussed understanding of opportunities around a spark.

This way of researching stimulates a team to share insights, to explore if there are knowns or unknown yet to be discovered via the use of research canvasses. The explorative research method is especially useful when some research is already done, but never in a structured way and a clear value proposition lacks.

The research method consist of four phases (figure XX) that combine group effort (team alignment workshop and focus alignment workshop) with individual (research) activities (doing research and focus communication). All will be disucced separately.

1 - TEAM ALIGNMENT MEETING

The research starts with a team alignment meeting. This meeting is organized when a **spark** is indicated as potentially interesting by a project leader or project initiator. The team alignment meeting has the goal to kick off the project and agree on the research direction. This is supported by the use of the knowledge dump canvas and research direction canvas. These canvasses stimulate team members to write down everything they know and allows them to share their thoughts in a visual manner with the other team members. To create team alignment on the goal of the project the meeting must be attended by all team members involved in researching the specific spark.

2 - DOING RESEARCH

When a research direction is chosen, the team moves to the second phase: doing research. In this phase research is divided in **desirability research, feasibility research and viability research**. Each pillar of research is supported by two canvasses that form the blueprint of what aspects need to be addressed per pillar. The canvasses can be seen as a visual representation of a to-do list per pillar. When findings are put in the form of a canvas, it represents at what part knowledge is already acquired and what is yet unknown. Making it visual also allows a team member to easily share his findings with others.

Doing research is executed individually, this allows every team member to take up the part that is close to their expertise. What part that is, is up to the team to decide.

Doing research takes on average **two weeks** and can include desk research, interviews, observations, visiting the research site and many other research techniques. At the end of research, the facilitator or project leader plans a focus alignment meeting.

3- FOCUS ALIGNMENT MEETING

During the focus alignment meeting the team **combines research insights** by presenting the filled in canvasses to each other and discuss how to combine the found information. This meeting combines all research efforts into a shared Value Proposition Canvas (Osterwalder et al. 2014) and lean canvas. The lean canvas forms the conclusion of the research since it forces the team to link all information gathered in the research pillars to one solid concept.

4 - FOCUS COMMUNICATION AND FURTHER RESEARCH

The final step, focus communication, is about storytelling and forms the basis of a product prototype to test the value proposition. The focus communication should be a concise story about **what** is going to be delivered, **why** and for **who**. This communication can be done in the form of a presentation or research document. This presentation is the last part of research and allows the team to reflect on the potential of the spark in a holistic way: is the spark interesting enough to build a prototype to test the value proposition? If so, the spark moves out of the research phase into the prototyping phase.

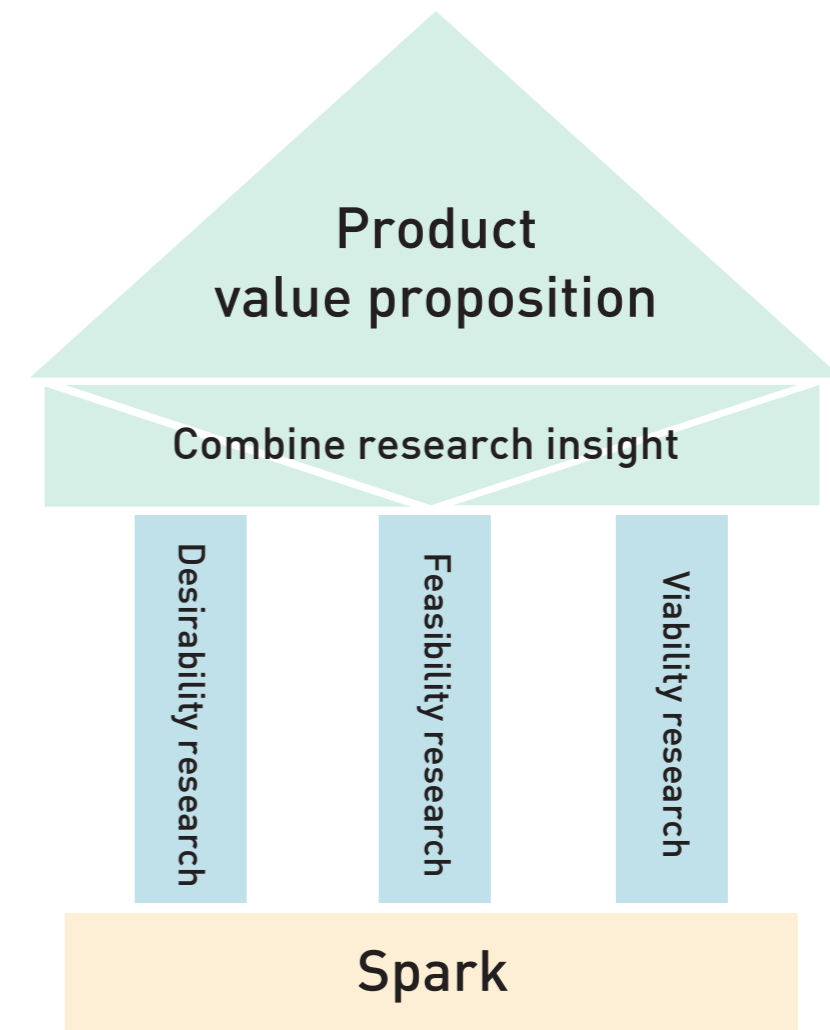


Figure 50 — Framework for explorative research



Figure 51 — Research steps within the framework

9.3. IGNITE! MVP

The goal of the IGNITE! MVP is to translate the value of the research method to a minimal embodiment. The goal of this minimal embodiment is to make the process of IGNITE! for WAB to use, starting today. The IGNITE! MVP is a booklet consisting of an introduction towards the research method, a detailed explanation of all four research steps and all canvases explained on 1) why to use this canvas and 2) how to use this canvas. This is described for both end users as well as research facilitators within teams. The full booklet can be downloaded scanning the QR code on the next page. The steps involved in the MVP research method are discussed chapter 9.2. The explanation of the canvasses and the structure per canvas will be discussed below.

9.3.1. Facilitator guide

The IGNITE! MVP pays close attention to assisting the facilitator during the process. Every step, as discussed in chapter 9.2, is discussed individually before introducing the canvases. These step introductions describe session details and give the facilitator or project leader hand holds during the process of guiding the research team.

9.3.2. Canvases

The Research Method makes use of canvases. Canvases are useful to frame knowledge and make information visual. Visual information is more easy to understand and allows people to share their knowledge in a clear way. Since explorative research is about broadening your perspective and creating a solid and holistic understanding of the context of a spark, it is important that all data gathered throughout the process is easily understandable for all stakeholders. By using canvases, the team will know what information they are looking at and allow them to present information in a structured way.

The goal of the canvases is to make visual what information is already there and what spots are left blank, and therefore show knowledge that is still lacking.

Explorative research makes use of 10 canvasses in 3 steps:

Team alignment meeting

- Knowledge dump canvas
- Research direction canvas

Doing research

- Persona canvas
- Scenario map
- Company DNA
- Skill analysis
- Market analysis
- Competitor overview

Focus alignment meeting

- Value Proposition Canvas (Osterwalder, 2014)
- Lean Canvas (Maurya, n.d.)

9.3.3. Canvas structure

For every canvas the explanation is split in three parts: *why?* *how?* and *tips!*.

Why?

Starting the canvas specific information the canvas is goal is explained. Next to that, the reason on why to use the canvas is explained. For example at the knowledge dump canvas:

The purpose of this knowledge map is to write down everything you know about the spark. It is not yet important if it is feasible, validated or actionable. This is the step where you write out what you know and what you want to achieve.

When written down, share your vision on the spark with the team, listen to each others point of view and try to understand how rich the subject is. This stage is about diverging, gathering knowledge and learn from each other.

How?

Afterwards, the advised steps to take when filling in the canvas are listed in a bullet point list. These steps are practical and hands on. This to guide the user in the process of filling in the canvas. For example at the knowledge dump canvas:

1) *Context: Describe the market. What trends are related to this spark? What is a unique aspect of the market? Try to be specific!*

2) *User: Who is the end user? What do they do? What are their problems now? How do they feel? What channels do they use to gather knowledge? What is typical about them? Maybe a quote?*

3) *Problem: What is the main problem in this context? What is the main problem for the end user? Can you think of sub-problems? What problem are you trying to solve?*

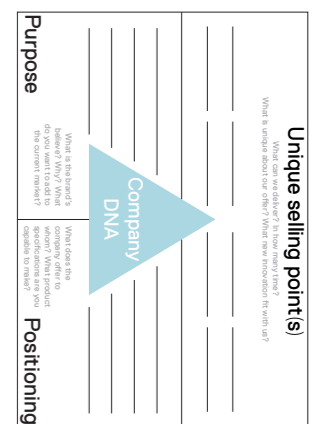
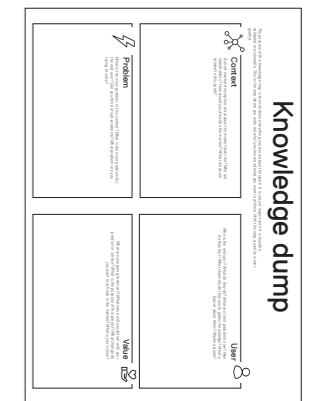
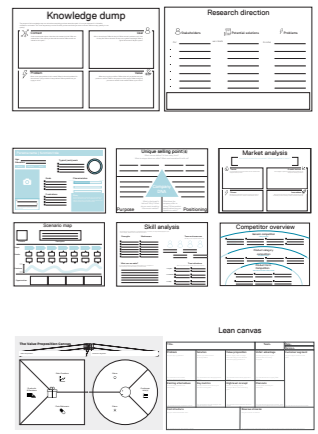
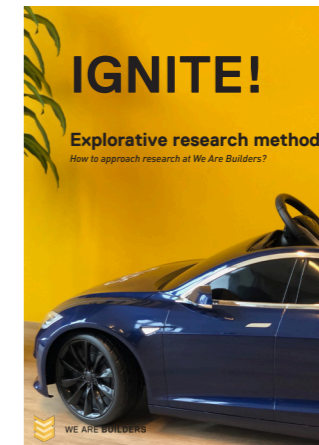
4) *Value: What value are you going to deliver? What is the purpose of this project? What change do you want to achieve in the market? What is your vision? What product or service are you going to deliver?*

5) *Share your canvas with the team, point out what you think is interesting or worrying (what might be a show stopper for the idea)*

Tips!

If it is desired that specific information is not overseen at a specific step, it is written as a tip at the bottom of the page. This tip had the goal to inspire the reader and to stimulate correct use of the canvas. For example at the knowledge dump canvas:

Tip!
With this step, quantity is over quality! Write down everything that is potentially interesting



Scan the QR code to click through the full prototype!

Figure 52 — Pages of the IGNITE! MVP booklet

9.4. IGNITE! Prototype

We Are Builders is a startup studio that is focused on building innovative digital platforms. During the conceptualization phase of this research the WAB CEO got excited: what if this way of doing research, that is unique for him and the company, could be a platform? This will have two benefits. It will 1) make the process of doing research more approachable for WAB employees since they are familiar to digitalize all processes at the studio, and 2) it will create possible competitive advantages when the research method is seen as applicable for multiple organisations, and IGNITE! can become a software platform.



Figure 53 — WAB software development process

Process overview

To understand why the IGNITE! prototype is delivered, we first zoom in to the development process of WAB. Software development starts with a process overview, as seen in figure 51. This is a brief overview of what the user needs to achieve with the process.

Epics

When the team agrees on a process overview, it works towards a more concrete translation of the process into epics. An epic is a body of work that can be broken down into specific tasks (called user stories) based on the needs/requests of customers or end users (Atlassian, n.d.). Examples of epics in the case of IGNITE! are:

Epic: As a facilitator, I want to have an overview of the research approach and plan research

Epic: As a project team, we want to create knowledge on a single place and help each other research the topic

All epics of IGNITE! are evaluated and adjusted together with the WAB venture manager. This was an important step, since the epics are the translation from the vision towards what is going to be developed. When we agreed on the epics, I translated the epics to user stories.

User stories

A user story is the smallest unit of work in an agile framework. It's an end goal, not a feature, expressed from the software user's perspective.

Stories use non-technical language to provide context for the development team and their efforts (Atlassian, n.d.). Examples of user stories for IGNITE! are:

As a researcher, you must be able to link team members to roles (D/N/F/researcher/boss) in the project

As a researcher, I want to insert all information from the team alignment session to the platform

A lot of user stories are written per epic. Not all of these user stories are essential for the success of the platform. Especially not in the future first release. Therefore user stories are prioritized using four categories:

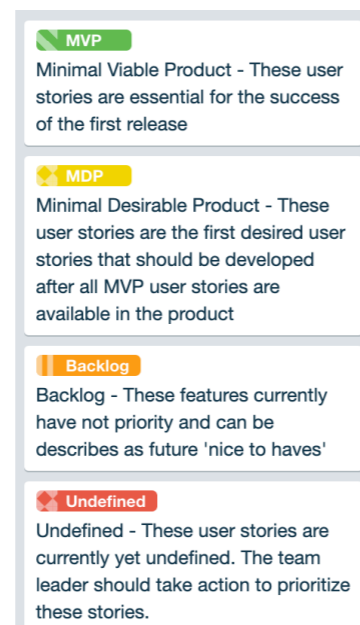


Figure 54 — Snapshot of the building plan categories of prioritization

Wireframe

All user stories that with the label 'MVP' form the basis of the wireframe. A wireframe is created to show the structure of the software and to determine the flow of the product. The wireframe consists of a set of screens indicating the process flow in a quick and simple manner and it shows how content is envisioned to be mapped on a screen. In short: a wireframe is the basic framework for software.

The IGNITE! wireframe consists of a set of clickable screens that indicate the flow of the most important parts of the process:

- 1) Create overview in research
- 2) Create a platform where teams can work together on different aspects of research
- 3) Create a place where research tools and methods can be viewed and downloaded.

Together with the WAB venture manager, we decided that a wireframe of IGNITE! is a desired end deliverable for WAB. This because a clickable wireframe can link the user stories with the content of the MVP and therefore it makes the Explorative Research method easy understandable. Therefore, the wireframe is mainly a communication deliverable and a deliverable of functionalities, instead of a deliverable showing the desired design of IGNITE!. Because of time boundaries, the design of the software is not included in this project.

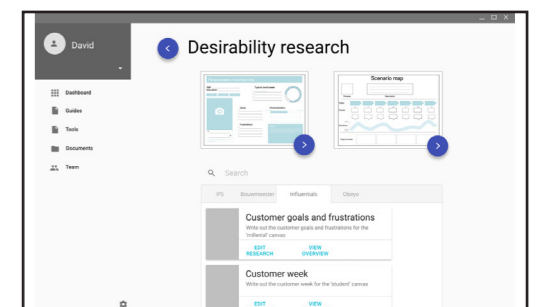
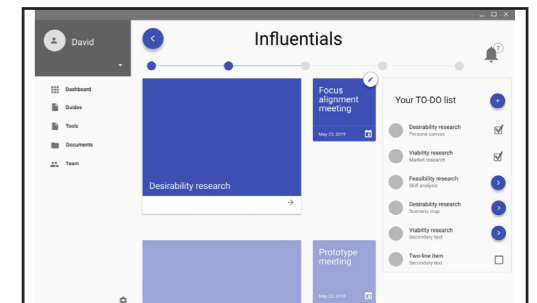
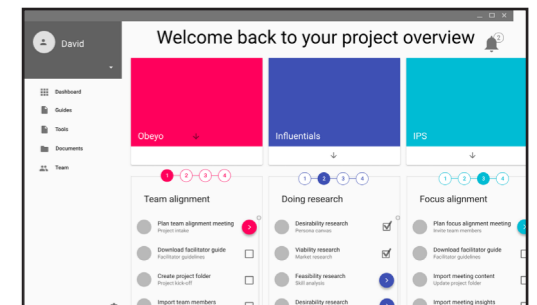
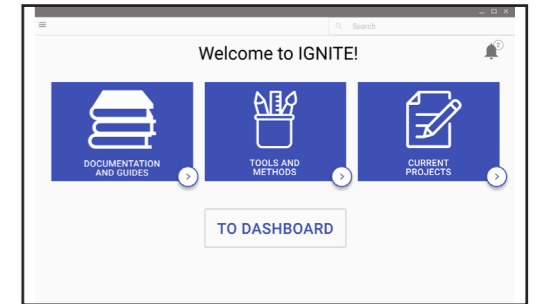
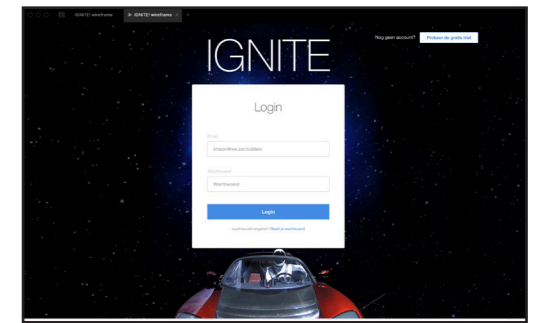


Figure 55 — IGNITE! Wireframe snapshots

Scan the QR code to click through the full prototype!



9.5 IGNITE! Building plan

Building plan

The collection of epics, prioritized user stories together with the wireframe form the building plan of IGNITE!

The building plan is made in Trello. Trello is used by WAB during software development to prioritize what needs to be developed. The process steps are indicated by lanes (columns) supported by the epic in the top card of that lane. Below the epic, the prioritized user stories are listed from most desirable to not yet prioritized.

Structuring a process in this way allows a development team to 'read' that a designers' goal is with a specific screen in the wireframe. It also allows teams to evaluate what needs to be higher or lower prioritized.

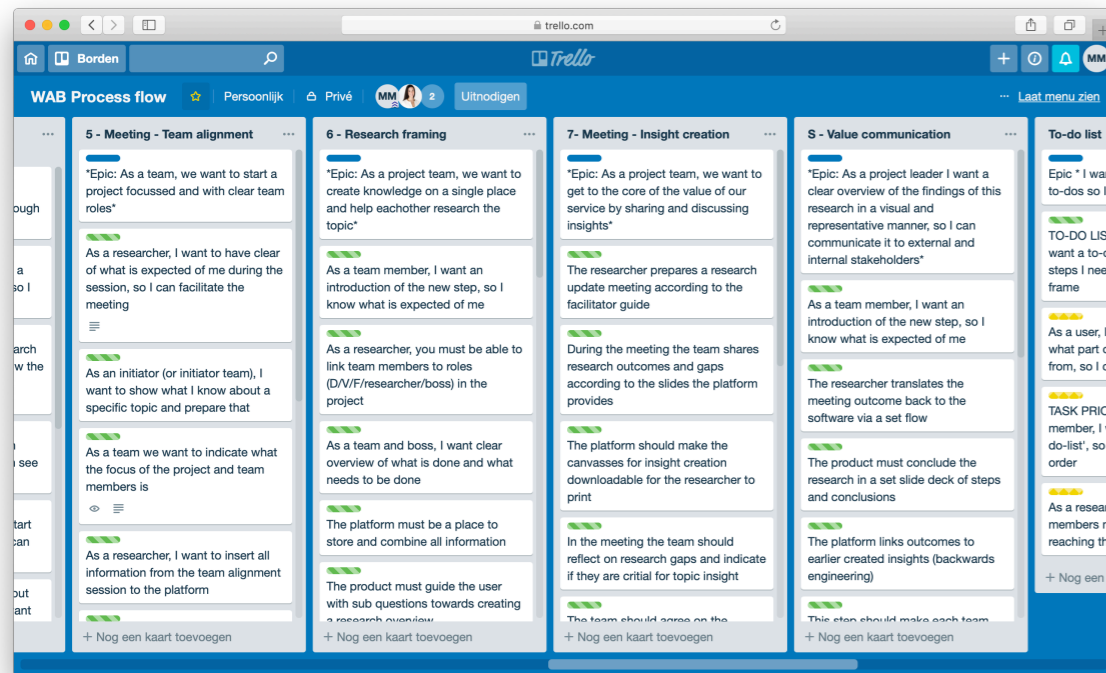


Figure 56 — Snapshot of the IGNITE! Buildingplan

9.5 IGNITE! evaluation

After designing the MVP, prototype and building plan of IGNITE!, it is time to evaluate if this solution contributes to the WAB ideation strategy. Because of external influence on the WAB team, the timing of testing the final design was close to the deadline of this research. This forced me to creatively test the final design with the research team by presenting the results during the monthly team meeting. At the monthly team meeting, every team member shared his work of the last month with the team, to give insight in what keeps you busy. This usually is in the form of a small presentation (max 3 slides), but the WAB CEO allowed me to use the team meeting to present the IGNITE! booklet in print and wireframe via a presentation.

The reactions to the presentation were short and concise because of time issues. This asked of me to critically reflect myself on the design in relation to the stated design goals. The reflection of the final design is structured based on desirability: does WAB want to use it?, feasibility: can it be build? and viability: should it be build?

9.5.1. Desirability - Does WAB want to use it?

The canvases in combination with the description of the 'how' and 'what' per canvas in the IGNITE! MVP booklet make the individual canvases easy to use and approachable to use as a basis for research inspiration. To let the booklet be a framework for research, more time must be invested in creating clear plans on how to approach research step by step by for example indicating time frames or including research method advises (f.e. explain how to plan an interview or a creative session).

9.5.2. Feasibility - Can it be build?

The building plan is made in collaboration with the venture manager. She has a background in software development and project management so could judge if the building plan was made in a way that it is a readable document for software developers. She helped me to frame the framework via a process overview, to epics to users stories to a wire frame. This makes that

the prototype wireframe as well as the building plan are developed based on the first steps of the approach of software creation at We Are Builders.

This makes the combination of the prototype and wireframe a good first step in translating the research frame towards a digital platform. A disadvantage is that the design and MVP stages of software development are not at all addressed. This makes that, without a person that fully understands what is behind the building plan (the explorative research framework), the chances of misinterpretation in the development of the software in later stages is high. To reduce this risk, the IGNITE! booklet and detailed steps discussed can function as a check if the product is heading in the intended direction.

9.5.3. Viability - Should it be build? and should it be used?

The design loops and concept test during this project all focused on discovering and validating the explorative research framework and the use of research canvases. When reflection on the presentation of the final design the most enthusiastic reactions were on the printed IGNITE! booklets. The WAB team directly recognized 'their' canvases and the addition of an explanation and plan of approach for the canvases. One of the team members addressed that he could now do the ideation himself! For me, this showed that the booklet is a viable method for WAB to use.

One side mark is that the IGNITE! MVP is not covering all aspects of the ideation phase. It is not addressing with what spark to start, or when a spark must be indicated as not interesting enough. The IGNITE! MVP booklet leaves that open for interpretation of the user. Therefore I think that the IGNITE! booklet can be a great tool to explore research possibilities and can function as a holistic check: 'did I, as a researcher at WAB, equally address desirability, viability and feasibility in my research? Or do I miss something?' Canvases form a great method to create overview in a pile of information.



Scan the QR code to see the full building plan!



Evaluation

This chapter will conclude and discuss this project and possible future research opportunities. For me, this project was challenging in many ways and most I've learned a lot as strategic designer. This chapter describes a set of takeaways that can be used by other graduate students working in innovative surroundings on a project that involves creating strategy or creative processes. It also includes a personal reflection on the project.

10.1 Conclusion and discussion

Today, 90% of startups fail (CBInsights 2018; Gross 2015). To reduce these risks, startup studios were launched. A startup studio is a supportive structure of entrepreneurs to create scalable and successful startups in a collaborative manner. Entrepreneurial knowledge and development skills are a great bases for a startup studio to develop a concept and launch a company, but these skills are harder to apply during the more 'messy' phases like ideation because entrepreneurs are in general driven by concrete and hands on results. Startup studios approach the early, more wicked phases of innovation mainly evidence based and practically oriented (Szigeti, 2016), where ideation asks for divergence activities regarding research and empathizing (Sanders Stappers 2012). Design is already applied in intrapreneurial projects and other innovation companies, for example in the case of Design Led Innovation (Bucolo, Wrigley, Matthews, 2012). While design is gaining more traction outside of traditional design practices (Sheppard, Sarrazin, Kouyoumjian, Dore, 2018), it is time to look at how design can spark and enrich innovation strategies in a new context, the context of a startup studio. Therefore the research question of this graduation project is: how can the application of design in early phases of innovation enhance startup studio ideation?

This project has explored how design can be of added value in early phases of innovation in the context of the startup studio We Are Builders. The research and design activities of this project showed that when using design as a basis, it offers a holistic understanding of the context and a frame for creating a clear and user-centered problem statement.

The solution of this graduation assignment applies design in early stages of innovation, by offering a structured approach to research. This to give startup studios the confidence to execute early, fuzzy stages of innovation in a design led way by using the framework for explorative research. By using the framework, innovation teams are able to create overview in research activities and gives them handholds to create a holistic understanding of a innovative idea.

This focus on problem framing and exploring opportunities resulted in the design of a framework for explorative research. This explorative research framework combines the explorative and user-centered nature of design with the practical and direct way of entrepreneurial research. This research method can support a group of entrepreneurs to approach research in early phases of innovation in a structured, holistic way.

For the scientific world, this research gives insider insights in how a startup studio approaches innovation, focussed on the fuzzy first phases of innovation. The research showed that design can be of added value to innovation in translating knowledge to insights in a holistic, end-user centered and co-creative manner. Design stimulates entrepreneurs combine divergent and convergent activities, to share findings and perform research in a explorative and collaborative manner.

10.2.1. further research

To investigate if the explorative research framework is applicable to more innovation structures, test should be executed to verify if this is the case or not. Also, opportunities are seen in indicating how to translate the explorative research framework to a method that allows team to be self sufficient during research. More tests should therefore be done with multiple teams within multiple companies.

Because We Are Builders is a relatively new startup studio, test cases are relatively little available. This makes that the framework is currently tested with a little amount of people and mainly via a single case, the startup Obeyo. Executing this research in a larger innovation structure will give more diverse insights in what the value of design can be in early phases of innovation.

10.2 What you need to know

I've learned a lot during this project. In six take aways I will describe my learnings that can be useful for you, as a graduate student or designer, in entrepreneurial settings.

1) Make your own Minimal Viable Products

Entrepreneurs are speedy people. Thoughts are quickly put out in reality in the form of low fidelity concepts like slide decks, webpages, emails or a pitch. I, as a Strategic Design graduate, started of at We Are Builders exploring my context by reading literature, performing formal and informal interviews, to frame my context of the project. Try to put your explorative actions into their way of low fidelity concepts. This might feel like rushing to conclusions or judging too quick, but entrepreneurs are great public that fully understand that a low fidelity product is meant for communication and can change over time. This can for example be to translate (parts of) your research into blogs, draw findings of interviews or tests on a big whiteboard for everybody to see, or a small slide deck with findings. Allow people to react on your work in an accessible way.

2) Spark interest

Entrepreneurs are curious people and love to learn. Try to emerge them in your context of design. Is there a specific designer that inspires you? Did you watch a (design related) TedTalk? Share your passion for design or strategy and try to nudge the team towards your way of working. Show your passion! This can also be done on a bigger level, for example with creative workshops, show projects you've done in the past, or with involving them in your design process. Be enthusiastic and make design concrete and approachable. This will make them understand your way of working and this will help you to collaborate better on many levels.

3) Everybody is creative

Design activities like drawing, visualising, using analogies or storytelling can be sometimes seen by non-designers as a gift from god that only designers have. This is not true. I truly believe everybody is creative, can visualize and create powerful analogies as soon as they start trying. Sharing your designerly qualities with the team will bridge the gap between you and the team. Let them experience the value of creativity and encourage the use of markers, post-its, drawing or analogies so your team hops on the bus of creativity.

4) It is much bigger than great ideas

Only a great idea doesn't make a person the new Elon Musk. A passionate entrepreneur is a person that is creative, innovative, a (very) hard worker and puts everything into practice to make his startup a success. Growing businesses is risky business. This involves a lot of networking, sales, marketing, finance, administrative tasks, support and many many more. This project made me aware that a successful entrepreneur is a person with a lot of passion for his job and is not afraid to perform tasks that he might not like or not exactly know how to do so. This makes an entrepreneur a perfect person to learn from. Ask a lot of direct questions about what he does, what boundary activities come with being an entrepreneur and what he sees as his biggest challenge. This will y broaden your knowledge on how businesses are build. It will make you understand business better and therefore make you a better designer as well.

5) Small company, big impact

This graduation project was performed at a small company, about 10 employees. This makes that the impact of your project on the company can be high, especially if you compare it to graduation projects at large multinationals. Graduating at a small company also asks for you to be empathic and open to create new friends. This also because a design project asks for a lot of commitment of people involved in the project. Testing, interviewing and co-creating takes time and sometimes lacks direct result. If you put effort in getting to know the team, have lunch together, stay for friday drinks asking them for a little time will become easier.

6) Laugh!

This is maybe my most important advice: laugh a little! People will get to know you as you, not only as the researcher interfering in their team. Getting to know each other on a social level will make your research also a lot easier and will spark the people around you to help. Laughing will allow you to take your mind of graduation from time to time and get energized for an other way of reading papers, designing concepts or typing this advise.

10.3 Personal reflection

Starting this project, I thought I knew I was fascinated by innovation, renewal and entrepreneurs and I knew how to design a process in a creative and strategic way. Therefore, this project seems the perfect fit. As I mentioned in my project brief: 'with this graduation project I want to reflect my interest in design and its value for business and innovation. With this in mind, I searched for companies that are currently more commercial and business oriented. My goal was to see if I could find a match in future vision and value of design, but also to explore if my skills as a strategic design student would be added value for the company.' I was confident that my high energy and holistic background s a strategic designer. As David Guest stated in 1991, and heavily supported by design giant IDEO: designers are T-shaped professionals (figure 53). So in theory I would be a perfect fit to design a creative ideation strategy for We Are Builders because of my grounding as a design student and interest for innovation.

right thing to do was to explore more and keep searching. If I would be able to do it again, I would push myself to sharing my thoughts with the people around me more. As stated in the first takeaway for other design students: create your own MVP's. Don't be afraid to make mistakes, to ask for help and involve people in your search for a good solution. This would be my message to myself looking back at the project.

This insight hit me at half time: I'm a designer, not solely researcher, I love to draw, have heated discussions and laugh with the people around me. I should use my strengths as a person to lift this graduation assignment to a higher level. This resulted in a diverse, hands-on design and conceptualization phase where I included designers, entrepreneurs and colleagues in my search for an explorative research method for We Are Builders. This makes the design and conceptualization phase blurry, with a lot of small pivots, but for me so much more fun than the first half of this graduation assignment. I felt like I was contributing to the company and experienced how design is of value for a innovative company by co-creating research tools and methods. I know I should pay attention more towards documenting my thoughts in a smart and structured way, this to make my work easier for the people around me to understand and for myself to create grounded deep insights in the situation.

Dedicating my last period as a Delft University of Technology student to a 5 month research project was a great experience. I've learned what motivates me, what clearly doesn't and what my strengths as a designer are. I am able to facilitate creative sessions in an uplifting and informative way, I can write blogs about my research and activities and I can create empathy towards my end user: pationated entrepreneurs. This graduation assignment showed me that design is not only about following my intuitions and to keep exploring or only executing. It is about bridging data and insights together in a customer-centered manner, to fully experience the value of creativity and design on a scientific level.

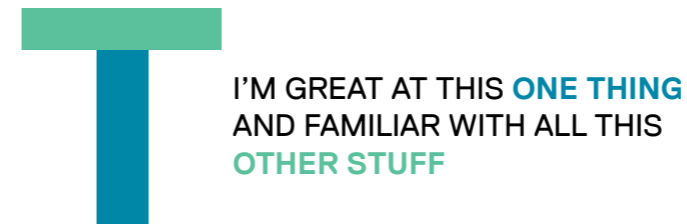


Figure 57 — T-shaped designer

Already at the beginning, I overwhelmed myself with literature, blogs, slide decks and interviews and I discovered that without focus, exploring is useless.

The employees of We Are Builders are confident, hard workers with a passion for great software. This drive inspired me to contribute to the company, but it also resulted in a pressure I put on myself to be as confident about myself being a strategic design expert, as they are about being entrepreneurs. This pressure resulted in a very, very broad exploration phase and the feeling of insecurity about if I was doing the right thing. Instead of asking help, from my committee, fellow designers or share my thoughts with the company, I thought the

References

Adams, R. S., Daly, S. R., Mann, L. M., & Dall'Alba, G. (2011). Being a professional: Three lenses into design thinking, acting, and being. *Design Studies*, 32(6), 588-607.

Aldrich, H. (1999). *Organizations evolving*. Sage.

Alvarez, S. A., Barney, J. B., & Anderson, P. (2013). Forming and exploiting opportunities: The implications of discovery and creation processes for entrepreneurial and organizational research. *Organization Science*, 24(1), 301-317.

Atlassian, n.d. *Epics, Stories, Themes, and Initiatives*. Retrieved from <https://www.atlassian.com/agile/project-management/epics-stories-themes>

Beckman, S., & Barry, M. (2009). Design and innovation through storytelling. *International Journal of Innovation Science*, 1(4), 151-160

Bessant, J., Lamming, R., Noke, H., & Phillips, W. (2005). Managing innovation beyond the steady state. *Technovation*, 25(12), 1366-1376.

Board of Innovation (no date). *Scoping Canvas*. Retrieved from: <https://www.boardofinnovation.com/tools/scoping-canvas/>

Bradbury, H. (Ed.). (2015). *The Sage handbook of action research*. Sage.

Brown, T. (2009). Change by design: How design thinking creates new alternatives for business and society. *Collins Business*.

Brown, T., & Wyatt, J. (2010). Design thinking for social innovation. *Development Outreach*, 12(1), 29-43.

Bucolo, S., & Matthews, J. H. (2011). Design led innovation: Exploring the synthesis of needs, technologies and business models. In *Proceedings of Participatory Interaction Conference 2011*.

Bucolo, S., Wrigley, C., & Matthews, J. (2012). Gaps in organizational leadership: linking strategic and operational activities through design-led propositions. *Design Management Journal*, 7(1), 18-28.

Buijs, J. (2012). The Delft Innovation Method A Design Thinker's Guide to Innovation. In *DS 71: Proceedings of NordDesign 2012, the 9th NordDesign conference*, Aalborg University, Denmark. 22-24.08. 2012.

Calabretta, G., Gemser, G., & Karpen, I. (2016). *Strategic Design. Eight Essential*.

Calabretta, G., & Kleinsmann, M. (2017). Technology-driven evolution of design practices: envisioning the role of design in the digital era. *Journal of Marketing Management*, 33(3-4), 292-304.

CBInsights (2018). 'Top 20 reasons why startups fail.' *CBInsights*, retrieved from: <https://www.cbinsights.com/research/startup-failure-reasons-top/>

Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers?. *Journal of business venturing*, 13(4), 295-316.

Chesbrough, H. W. (2006). *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business Press

Clearbridge Mobile (2017). "A Beginner's Guide: POC vs. MVP vs. Prototype". Retrieved from: <https://clearbridgemobile.com/beginners-guide-poc-vs-mvp-vs-prototype/>

Dell'Era, C., Marchesi, A., & Verganti, R. (2010). Mastering technologies in design-driven innovation. *Research-Technology Management*, 53(2), 12-23.

DeMuro, J., (2018). What is SaaS? Retrieved from: <https://www.techradar.com/news/what-is-saas>

Dervin, B. (1998). Sense-making theory and practice: an overview of user interests in knowledge seeking and use. *Journal of knowledge management*, 2(2), 36-46.

Design Council. (2005). The 'double diamond' design process model. *Design Council*. Retrieved from: <https://www.designcouncil.org.uk/news-opinion/design-process-what-double-diamond>

Dess, G. G., Lumpkin, G. T., & Covin, J. G. (1997). Entrepreneurial strategy making and firm performance: Tests of contingency and configurational models. *Strategic management journal*, 18(9), 677-695.

Dorst, K. (2015). *Frame innovation: Create new thinking by design*. MIT Press.

Drucker, P. (2014). *Innovation and entrepreneurship*. Routledge.

Duchesneau, D. A., & Gartner, W. B. (1990). A profile of new

venture success and failure in an emerging industry. *Journal of business venturing*, 5(5), 297-312.

Gartner, W. B. (1985). A conceptual framework for describing the phenomenon of new venture creation. *Academy of management review*, 10(4), 696-706.

Gavetti, G., & Rivkin, J. W. (2007). On the origin of strategy: Action and cognition over time. *Organization Science*, 18(3), 420-439.

Gross, B. (2015). The single biggest reason why start-ups succeed. Retrieved from https://www.ted.com/talks/bill_gross_the_single_biggest_reason_why_startups_succeed

Guest, D. (1991). The hunt is on the Reaissance Man of computing. *The independent*, September 17, 1991.

Gutmann, T. (2018). Harmonizing corporate venturing modes: an integrative review and research agenda. *Management Review Quarterly*, 1-37.

Hekkert, P., & Van Dijk, M. (2011). *ViP-Vision in design: A guidebook for innovators*. BIS publishers.

Hultink, E. J., Griffin, A., Hart, S., & Robben, H. S. (1997). Industrial new product launch strategies and product development performance. *Journal of Product Innovation Management: AN INTERNATIONAL PUBLICATION OF THE PRODUCT DEVELOPMENT & MANAGEMENT ASSOCIATION*, 14(4), 243-257.

Huo, M., Verner, J., Zhu, L., & Babar, M. A. (2004, September). Software quality and agile methods. In *Proceedings of the 28th Annual International Computer Software and Applications Conference, 2004. COMPSAC 2004*. (pp. 520-525). IEEE.

Kenna, H (2018). Design Thinking for Designers. Retrieved from: <http://www.100archive.com/article/design-thinking-for-designers>

Kim, J., & Wilemon, D. (2002). Focusing the fuzzy front-end in new product development. *R&D Management*, 32(4), 269-279.

Kleinsmann, M., Buijs, J., & Valkenburg, R. (2010). Understanding the complexity of knowledge integration in collaborative new product development teams: A case study. *Journal of Engineering and Technology Management*, 27(1-2), 20-32.

Kleinsmann, M., Valkenburg, R., & Sluijs, J. (2017). *Capturing the Value of Design Thinking in Different Innovation*

Practices. *International Journal of Design*, 11(2).

Koen, P., Ajamian, G., Burkart, R., Clamen, A., Davidson, J., D'Amore, R., ... & Karol, R. (2001). Providing clarity and a common language to the "fuzzy front end". *Research-Technology Management*, 44(2), 46-55

Kuratko, D. F., & Audretsch, D. B. (2009). Strategic entrepreneurship: exploring different perspectives of an emerging concept. *Entrepreneurship Theory and Practice*, 33(1), 1-17.

Liedtka, J. (2014). Innovative ways companies are using design thinking. *Strategy & Leadership*, 42(2), 40-45.

Lindberg, T., Meinel, C., & Wagner, R. (2011). Design thinking: A fruitful concept for IT development? In H. Plattner, C. Meinel, & L. Leifer (Eds.), *Design thinking – understand – improve – apply* (pp. 3–18). Berlin/Heidelberg: Springer.

Madjar, N., Oldham, G. R., & Pratt, M. G. (2002). There's no place like home? The contributions of work and nonwork creativity support to employees' creative performance. *Academy of Management journal*, 45(4), 757-767

Maniak, R., & Midler, C. (2014). Multiproject lineage management: Bridging project management and design-based innovation strategy. *International Journal of Project Management*, 32(7), 1146-1156.

Maurya, A. (n.d.) *Lean Canvas*. Retrieved from <https://leanstack.com/leancanvas>

McDonald, M. (2014). A different playbook for digital. *Accenture Strategy*. Retrieved from: <https://www.accenture.com/us-en/blogs/blogs-different-playbook-for-digital>

Mintzberg, H. (1973). Strategy-making in three modes. *California management review*, 16(2), 44-53.

Moggridge, B., & Atkinson, B. (2007). *Designing interactions*(Vol. 17). Cambridge, MA: MIT press.

Muñoz, A. A., Helander, K. N., de Gooijer, T., & Ralph, M. (2016). Integrating Scrum and UCD: Insights from Two Case Studies. In *Integrating User-Centred Design in Agile Development* (pp. 97-115). Springer, Cham

Nussbaum, M. C. (2013). *The therapy of desire: Theory and practice in Hellenistic ethics*. Princeton University Press

Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value proposition design: How to create products and services customers want. *John Wiley & Sons*.

- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*. John Wiley & Sons.
- Pauwels, C., Clarysse, B., Wright, M., & Van Hove, J. (2016). Understanding a new generation incubation model: The accelerator. *Technovation*, 50, 13-24
- Pinder, M. 'Shifting gear between design thinking lean startup and agile'. Retrieved from <https://www.boardofinnovation.com/blog/shifting-gear-between-design-thinking-lean-startup-agile/>
- Price, R., Wrigley, C., Dreiling, A., & Bucolo, S. (2013, December). Design led innovation: shifting from smart follower to digital strategy leader in the Australian airport sector. In *Design Management Symposium (TIDMS), 2013 IEEE Tsinghua International* (pp. 251-258). IEEE.
- Price, R., Wrigley, C., & Matthews, J. H. (2017). Design-led innovation and sensemaking: Opportunities to connect.
- Price, R., Wrigley, C., & Matthews, J. (2018). Action researcher to design innovation catalyst: Building design capability from within. *Action Research*, 1476750318781221
- Rathgeber, P., Gutmann, T., Levasier, M., (2017). Organizational best practices of company builders –a qualitative study.
- Ries, E. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. Crown Books.
- Sanders, E. B. N., & Stappers, P. J. (2012). *Convivial toolbox: Generative research for the front end of design*. Amsterdam: BIS.
- Schwaber, K., & Beedle, M. (2002). *Agile software development with Scrum* (Vol. 1). Upper Saddle River: Prentice Hall.
- Sheppard, B., Sarrazin, H., Kouyoumjian, G., Dore, F. (2018) The business value of design. *Mckinsey Quarterly*.
- Simon, M., Houghton, S.M., & Aquino, K. (2000). Cognitive biases, risk perception, and venture formation: How individuals decide to start companies. *Journal of Business Venturing*, 15(2), 113-134.
- Sinek, S. (2009). *The Golden Circle*. Gumroad. com, <http://tinyurl.com/golden-circle-sinek>.
- Stanford school of Design (2014). "An Introduction to Design Thinking In One Hour: An Ideal Wallet". Retrieved from: <https://dschool.stanford.edu>
- Szigeti, A. (2016) *The startup Studio Playbook*.
- Tan, L. (2010). *Demonstrating the value of design (thinking)*. Northumbria University, Newcastle Upon Tyne and Design Council, London
- Tassoul, M. (2009). *Creative facilitation*. Delft: VSSD.
- Uzialko, A.C. (2019). What Is B2B? Retrieved from: <https://www.businessnewsdaily.com/5000-what-is-b2b.html>
- Van Boeijen, A., Daalhuizen, J., van der Schoor, R., & Zijlstra, J. (2014). *Delft design guide: Design strategies and methods*
- Van Der Bijl Brouwer, M., & Dorst, K. (2014). How deep is deep? A four-layer model of insights into human needs for design innovation. In *Design and Emotion*. Ediciones Uniandes.
- van der Bijl-Brouwer, M., & Dorst, K. (2017). Advancing the strategic impact of human-centred design. *Design Studies*, 53, 1-23.
- van der Vorst, R. (2017). *Brand and Product Commercialization Lecture Slides*. Delft, Netherlands.
- Van Gelderen, M., Thurik, R., & Bosma, N. (2005). Success and risk factors in the pre-startup phase. *Small business economics*, 24(4), 365-380.
- Verganti, R. (2008). Design, meanings, and radical innovation: A metamodel and a research agenda. *Journal of product innovation management*, 25(5), 436-456.
- Vianna, M., Vianna, Y., Adler, I., Lucena, B., & Russo, B. (2012). *Design Thinking: business innovation*.
- Viki, T., Toma, D., Gons, E. (2017). *The Corporate Startup*. Vakmedianet
- We Are Builders (2018). *An introduction to startup studio's - Ask me anything!* [PowerPoint slides]. Retrieved from internal sources.
- Wölbling, A., Krämer, K., Buss, C. N., Dribbisch, K., LoBue, P., & Taherivand, A. (2012). Design thinking: An innovative concept for developing user-centered software. In *Software for people* (pp. 121-136). Springer, Berlin, Heidelberg.