Overcoming Lack of Shared Company Objectives in an Early-stage Startup

A master thesis by
Yin-Jen Lee

A Design Toolkit for Entrepreneurs to Develop Company Mission and Product Vision

TU Delft
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因為需要感謝的人太多了，就感謝天罷。無論什麼事，不是需要先人的遺愛與遺產，即是需要眾人的支持與合作，還要等候機會的到來。越是真正做過一點事，越是感覺自己的貢獻之渺小。（陳之藩《在春風》）

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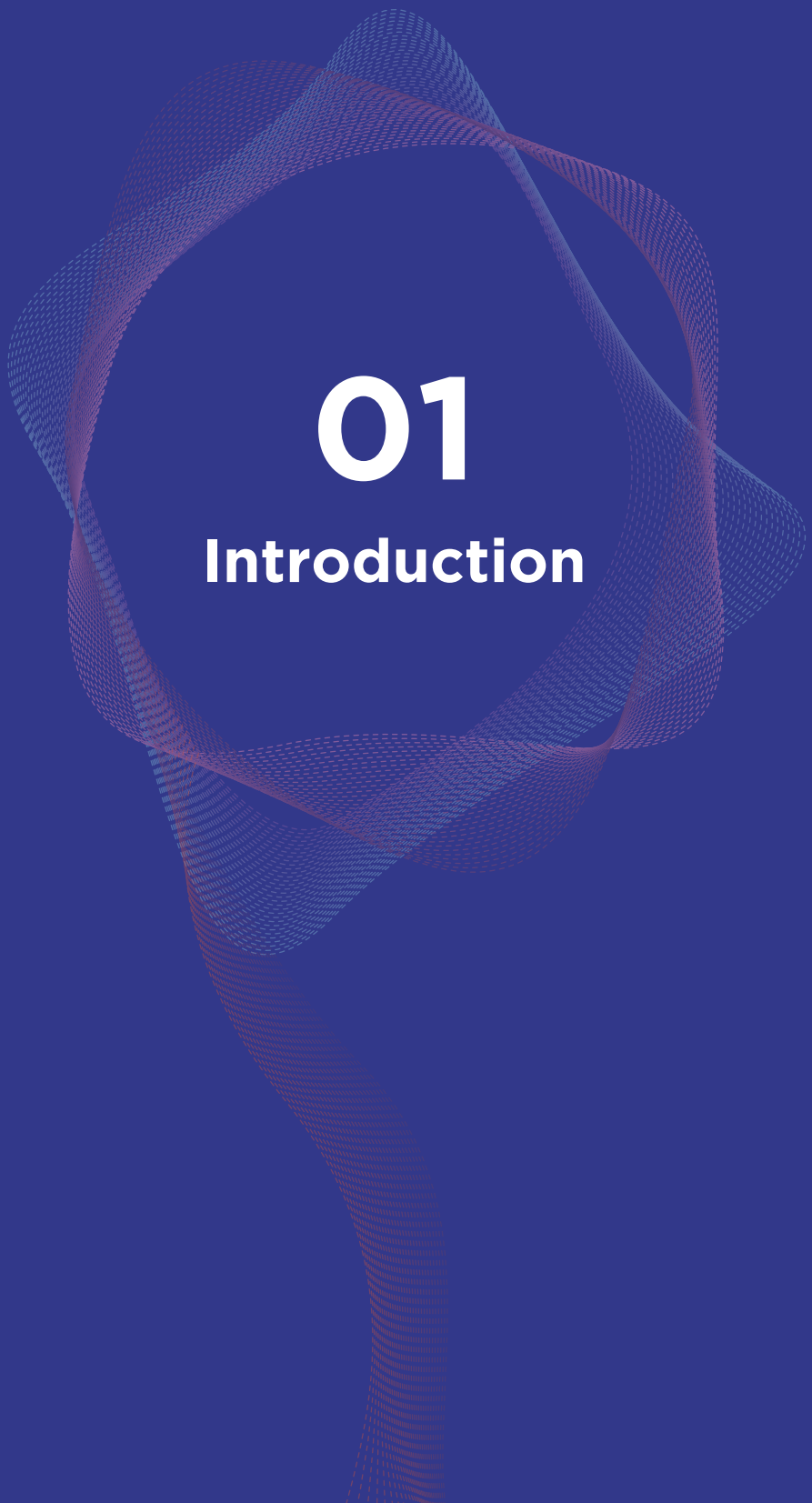
Executive summary

The thesis addresses the organizational challenges of lacking the big pictures in an early-stage startup. First, the author joined a newborn software venture as a founding product manager and observed the dynamics in his daily practice. Then, through numerous interviews with team leaders and employees, the author analyzed the data and discovered several issues happening in this newborn company. Among the findings, the most significant one is that the leaders didn't reach a consensus on the company's long-term goal; and the employees didn't have an aligned sense of the company's mission and product vision. This phenomenon led to employees' low productivity in new product development, constantly making incorrect trade-offs, and misaligning collaboration across different teams.

The project presented a design toolkit consisting of a canvas and an instruction brochure to overcome the challenge. This design toolkit helped the leaders collaboratively develop a big shared picture by outlining the company's mission and product vision. The author held a design workshop to implement the solution with three company co-founders and successfully generate the organization's long-term goal. As a result, the author evaluated the outcome by comparing employees' behavioral changes.

Internally, an enormous leap in the team's productivity has been identified. Employees were able to accelerate the progress of the product development by eliminating irrelevant tasks. Additionally, the collective big pictures improved the collaborations between the product team and the business development team. Finally, they could make the right trade-offs according to the company's big pictures. Externally, the CEO utilized the well-developed company mission and product vision to stand out from other candidates while applying startup accelerators. As a result, the company impressed the recruiter and successfully entered into a startup accelerator. Moreover, two corporations also invited the company to collaborate on building the product.

In terms of customer acquisition, enhanced employee productivity helped the company get its first paid customer eight months after it was founded. These company achievements complement the outcome of the thesis by proving the importance of the company's mission and product vision in an early-stage startup.



01

Introduction

Chapter 1 | Introduction

Ries (2011) indicated that "A startup is a human institution designed to create a new product or service under conditions of extreme uncertainty." People's ability to notice, act, and deal with uncertainty is relevant to a start-up's success (Butler et al., 2010). The uncertainty could be clarified as "the inability to recognize and articulate all relevant variables affecting performance" (Sommer et al., 2008). In this thesis project, I use design methodologies to discover the primary problem hidden in an early-stage startup and work out the solution to help it overcome the issue.

The process of the thesis is divided into two main spaces: problem space and solution space. In the problem space, I collect data from two aspects to ensure the saturation of the insights. First, I dive into my daily practice as a founding product manager and observe the operation process of the organization. Secondly, to understand the stakeholders' concerns and thoughts on encountered challenges, I conducted qualitative interviews with leaders and employees among three different teams in the company.

By analyzing the collected data, I aggregate the relevant insights to form four main themes. After having discussions with the CEO, a consensus has been reached. The primary problem is that the company lacks its mission and product vision, which are the root of uncertainties. The most significant impact of this issue is that everyone was working without a shared long-term goal, and this phenomenon created an insecure team atmosphere. As a result, it negatively affected the company's operating performance in terms of employee productivity, cross-team collaborations, and the quality of decision-making.

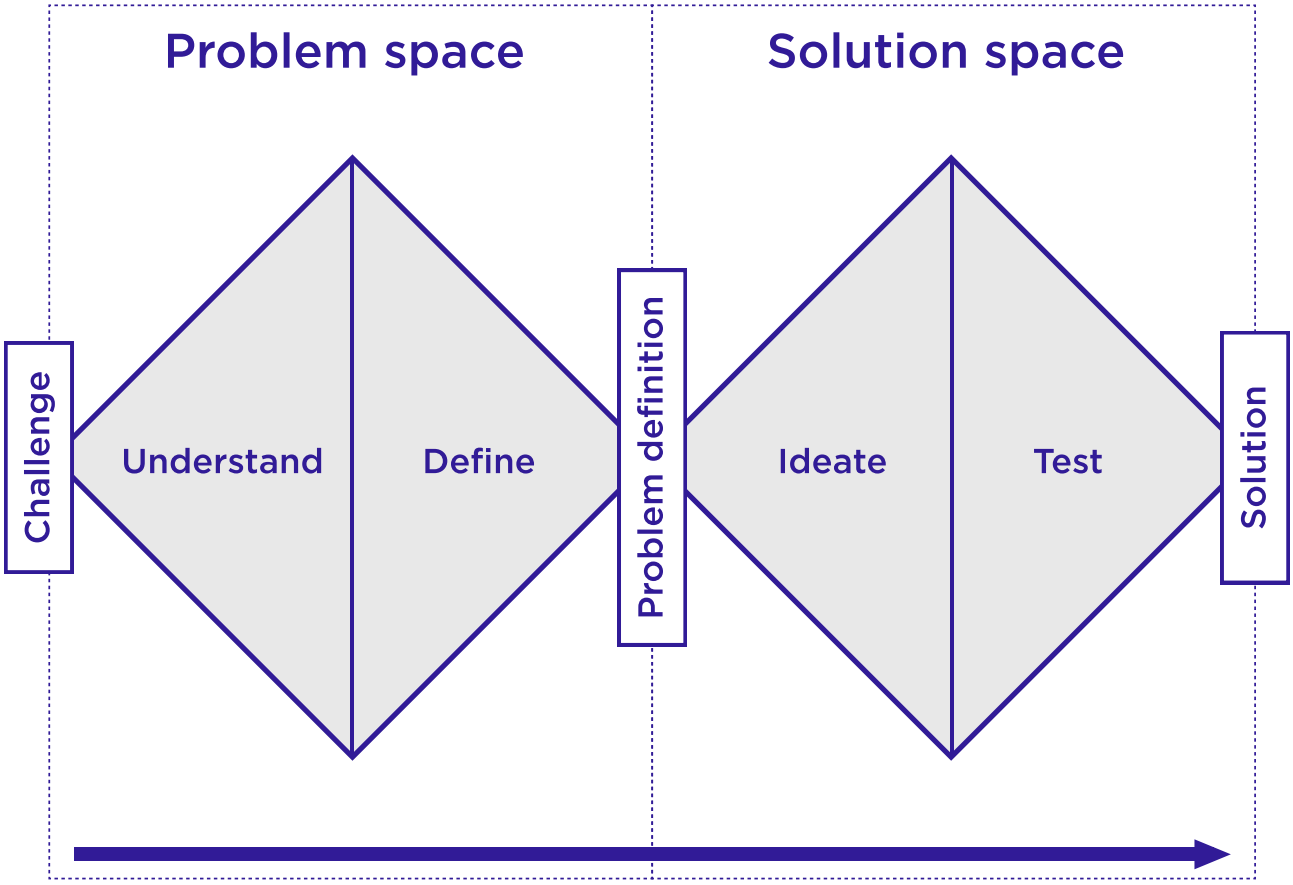


Figure 1-1: Overview of the thesis process

I bring the defined problem to the solution space. I discuss each element extracted from the problem statement and develop a design brief. The brief clarifies the design goal, helping entrepreneurs in early-stage startups develop the company mission and product vision collaboratively. It can effectively mitigate the uncertainty among different teams and increase the employees' productivity at work.

I conceptualize the solution by discussing findings from the literature that relates to the encountered problems. The deliverable is a design toolkit consisting of a canvas and a paired instruction brochure. The canvas helps the key stakeholders to visualize their thoughts on the company vision and product vision. By discussing and iterating each idea, people will reach a consensus on the company's big picture. Next, I implemented the solution through a design workshop with three co-founders. After successfully developing the company mission and product vision, I conducted follow-up interviews to collect their feedback on the solution. Their opinions and suggestions are analyzed as insights for the next iteration of the design toolkit.

To evaluate the outcome of the solution, I discuss the effectiveness based on two aspects: the internal and external impacts. For the internal influences, I observe how employees address tasks in their daily practice after knowing the company mission and product vision. When it comes to the external impacts, I record how the company utilizes its mission and vision to attract investors and achieve the milestone in customer acquisition.

At the end of the thesis, I conclude the project by summarizing the process and results from a holistic point of view. Finally, the limits are discussed to give recommendations for other companies seeking solutions to overcome similar issues.

02

Background information

Chapter 2 | Background information

In this chapter, I introduce the context including the startup's founding story, the identified opportunities in the market, and how this company operates its product development to work out the deliverables.

2.1 The birth of a startup - Dakodata

One day in December 2020, a group of people in Taiwan determined to build a startup with an burning ambition to change the world. The concept of this venture was born from a data scientist's mind. Her name is Ching. she had years of working experience in making data-driven decisions for tech companies as well as international consultancies. Typically, the process of data analysis consists of numerous stages that require multiple dedicated experts to handle. As a data expert, Ching found dealing with data was quite a time-consuming and laborious task. Therefore, she wanted to create a product or service to help people get business insights from data in a more efficient way. As a founder of the company, Ching gave this newborn venture a name - Dakodata.

2.2 Company operations

CB Insights(2021) published a research report that said, "the first reason startups fail is running out of cash and failing to raise new capital." To let the company survive as long as possible without financial issues, all of the members in Dakodata are taking this entrepreneurial job as an unpaid side project after work. The time slot each team member spent on Dakodata varied from the leisure time. CTO introduced Scrum as an agile software development process learned from his full-time job in a tech company to address this issue. Scrum is ideal for Dakodata to maximize effectiveness due to limited time constraints, especially when everyone can work remotely in different places.

In Dakodata's Scrum process, team leaders will break down the company's seasonal objective into smaller goals that can be achieved in the short term. This working framework can separate the enormously unforeseeable risks to affordable degrees. Figure 2-1 shows the overview of the Scrum process. The most fundamental unit in the process is the sprint. A sprint represents a two-week session when the team works to complete a set amount of work. Before starting a new sprint, the team leaders set up the sprint goal, create a list of prioritized tasks, and put them into the sprint backlog.

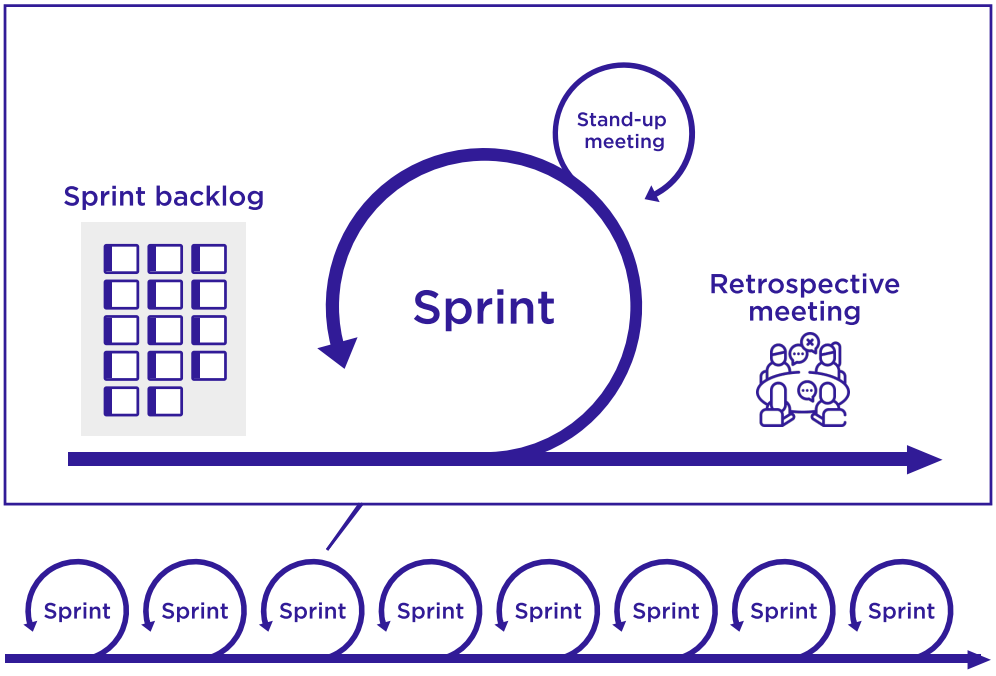


Figure 2-1: Dakodata's Scrum process

Dakodata uses Jira as the online software to operate the Scrum process; each task's information is recorded into a digital ticket, including description, deliverables, and estimated spending time. There are four statuses of a ticket, which are "to do," "in progress," "under review," and "done." When starting a new sprint, all tickets are placed in the "to do" area until the responsible worker begins to address it.

During the working process, the practitioners put the ongoing tickets in the "in progress" area, and they can log the spending time in tickets to make progress transparent. After the task has been finished, workers will move the ticket to "under review" and assign it to a manager responsible for checking the result. If the consequence is good, the manager will transfer the ticket to the "done," which means the task is fully completed. (Figure 2-2)

During a sprint, all members have to report the status of each responsible ticket on a daily basis. This routine is also known as the stand-up meeting. The employees need to answer three questions during the meeting, "What did you do yesterday? What will you do today? Are there any roadblocks in your way, and how will your address them?" The regular updates importantly keep the team's pace visible and make everybody constantly involved. Accountability is also derived from showing the working progress in front of colleagues and being judged by them.

On the last day of a sprint, a retrospective meeting is necessary to share the success and discuss unintended issues that employees could improve in the next iteration. Dakodata regards this retrospective meeting as an important event, so everyone must be present in the online meeting room.

Aside from applying Scrum as an organizational working process, the product team also embedded a design framework for building the minimum viable product, discussed further in chapter three.

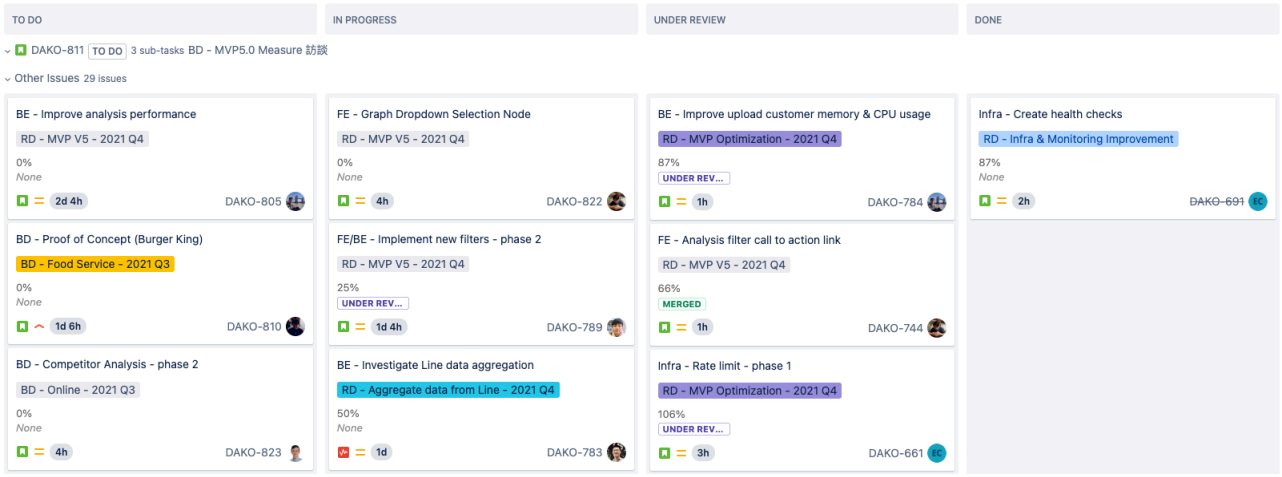


Figure 2-2: Tickets and its staus on Jira

2.3 Industry context: Emerging trends of data analytics

Nowadays, the volume of information is snowballing, and opportunities to expand insights by combining data are accelerating (Barton et al., 2013). Furthermore, the competitive advantage associated with effective data utilization drives the desire for existing mainstream businesses to become data-driven (Brownlow et al., 2015).

For example, companies can utilize customer's data to customize the marketing events, catch customers' attention, and nudge them to purchase. Companies' revenue can therefore be increased dramatically. On the other hand, data can be leveraged internally to manage the limited resources and reduce unnecessary costs. In this case, data-driven strategies can help corporations become lean and efficient.

Data analytics is an unavoidable process. 67% of small businesses today spend more than $10K annually on analytics tools and technologies (Guta, 2020). The demands for getting insights from the data have been enormous, but the analytics tools are still not fully accessible. According to Small Business Trends, 62% say they can better use the tools with more training (Guta, 2020).

Decades ago, data analytics was an expertise that only the data experts could address in dadicated departments. Nowadays, more and more SMEs, even self-employers, strive to leverage data analytics to enhance business performance and gain insights from their consumers. Therefore, it's an increasing demand to have a more accessible tool for non-experts to conduct data analytics. Dakodata positioned itself in this emerging trend and strived to play a vital role in the data analytics market.

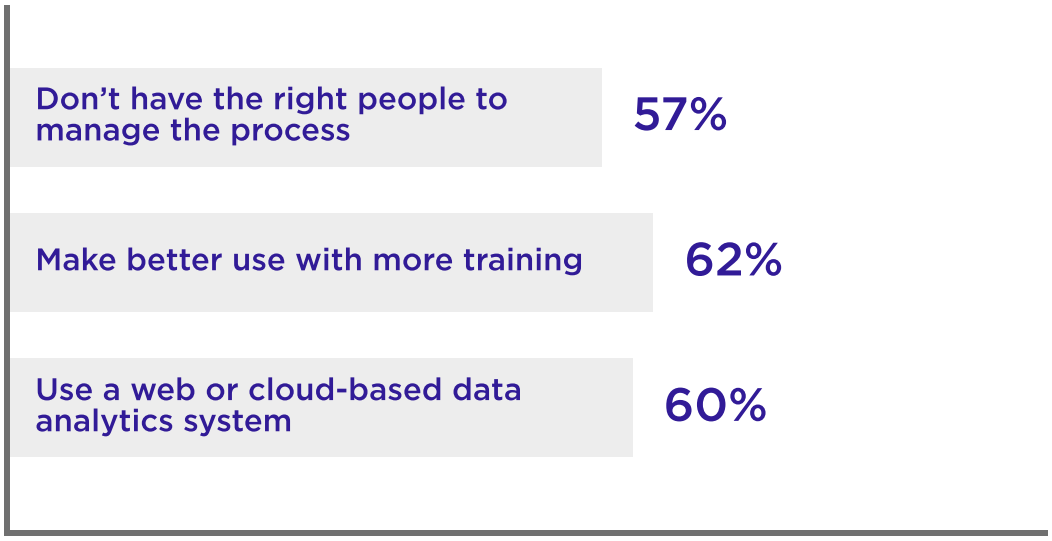


Figure 2-3: Key takeaways from Small Business TRENDS' report

03

Daily practice & observations

Chapter 3 | Daily practice & observations

This chapter describes Dakodata's progress in its new product development over eight months from November 2020 to July 2021. Additionally, I analyze the findings recorded from my observations to discuss the uncertainties during this period.

3.1 The goal of Dakodata

After I joined Dakodata in 2020 December with other partners invited by Ching, there were seven group members at the moment: a CEO with data science expertise (Ching), a COO acting as a business developer, a product manager (me), a product designer, a CTO who led the engineering team consisting of two other engineers. Figure 3-1 shows the organizational structure of Dakodata.

The primary goal of this newborn venture is to build the minimum viable product (MVP) that can validate the concept and reach the product/market fit as soon as possible, which means being in a good market with a product that can satisfy that market (Andreessen, 2007). Ching articulated the initial market segment based on her intuition and experience. As a problem owner, she found that addressing data issues in a small-size company was more difficult than in a larger company. On the other hand, large companies have sufficient human resources to divide the data processing procedures into different stages to focus on specific tasks.

However, when Ching worked in a small organization, she was the only data scientist responsible for data collecting, data cleaning, and data analyzing to generate a data-driven report. It's so laborious and time-consuming that Ching hoped she had an intelligent tool that helped with repetitive daily jobs. Therefore, she defined the initial market segment as small-size companies and early-stage startups with few employees in the organization. With the initiated business plan, Dakodata started to organize a product development framework that helped employees work out the product.

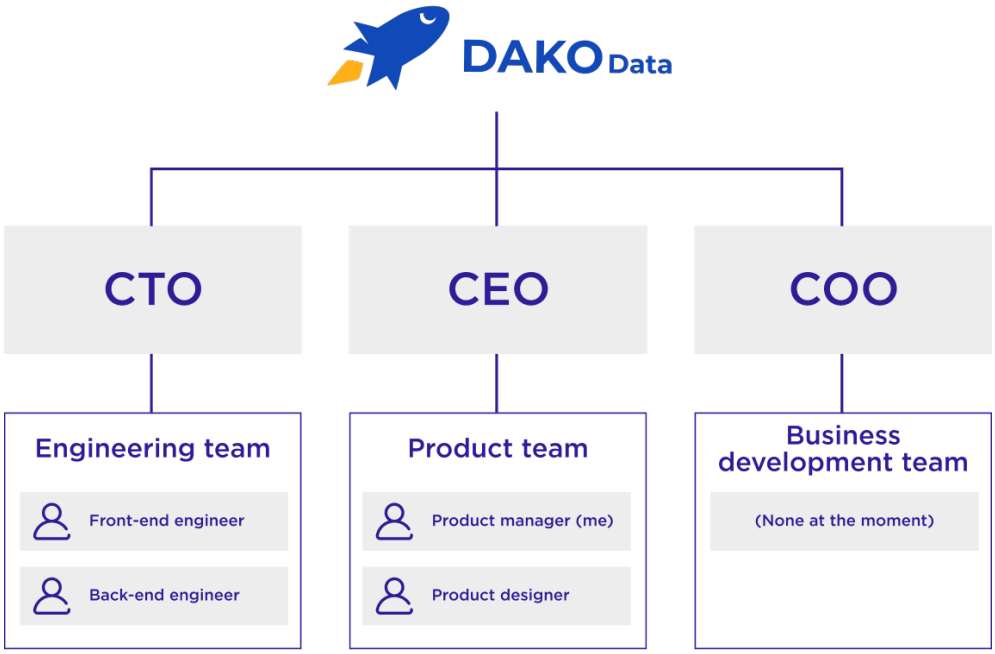


Figure 3-1: Dakodata's organization structure in December, 2020

3.2 Minimum viable product development

In 2011, Eric Ries defined a minimum viable product (MVP) as "a version of a new product, which allows a team to collect the maximum amount of validated learning about customers with the least effort." As an extreme early-stage startup, Dakodata strives to build MVP as soon as possible to test the concept with potential customers.

3.2.1 The first version of MVP

Ching, the CEO of Dakodata, concretized the idea of MVP as a website that could directly give user suggestions based on the uploaded data. The purpose is to accelerate the process of data analytics by eliminating steps. (Figure 3-2)

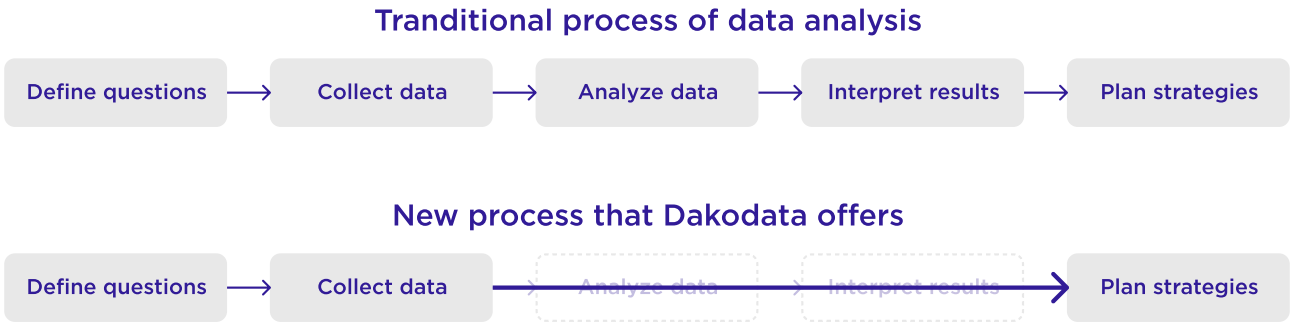


Figure 3-2: The idea about reconstructing the process of data analysis

Dakodata defined the positioning statement, which is, "For decision-makers in early-stage startups, Dakodata offers a digital platform that analyzes user data, generates tailored strategies, develops and gives them the confidence to become visionary entrepreneurs." Based on this statement, the product team designed the first version of the minimum viable product (MVP), a user simulator consisting of several digital interfaces demonstrating how people get the insights from their data.

3.2.2 Validate the MVP through interviews

The first version of MVP is simply an interactive prototype without any engineering mechanisms. The designers intended to rapidly test the idea with potential customers before investing precious engineering resources, which might become an unnecessary waste.

After finishing the prototype, five interviewees were invited to try the MVP and share their working experience in data analysis. Their occupation varied from founder to product manager, but they were all decision-makers working in early-stage startups or small-size companies.

The qualitative interview consists of three different parts. The first part is about exploration that focuses on interviewees' work conditions and facing challenges in data analysis. Next, the interviewees shared the analytic tools they were using and how they leveraged data to address business issues. As a result, interviewers could know more about the potential customers and use empathy to build desirable features for the next MVP iteration.

The second part is the usability test. Interviewees have to accomplish given tasks by using Dakodata's MVP and tell their thoughts during the process. After finishing each task, interviewees have to answer a few follow-up questions. For example, one task is to find the dashboard page and tell the suggested strategy related to marketing activities. After the interviewee finished the task, the interviewer asked him questions, "How will you describe your feelings while doing this task?" "To what extent are you satisfied with the time spent on this task?" "How hard is it to fully understand the strategy description?" "What kinds of information you expected to see are still missing?" These questions let the interviewer understand the obstacles users have faced and how they perceive Dakodata's MVP.

The last part of the interview is about desirability. Dakodata wanted to investigate how desired the potential customers were to adopt its solution. Therefore, the interviewees are asked if they are willing to keep using Dakodata's product and how affordable it is for them to buy it. Additionally, the interviewer also asks to what extent will the user recommend Dakodata to colleagues and friends. It bets on reputation, and therefore the interviewer can measure the desirability from a different perspective. Figure 3-3 shows the interview process.

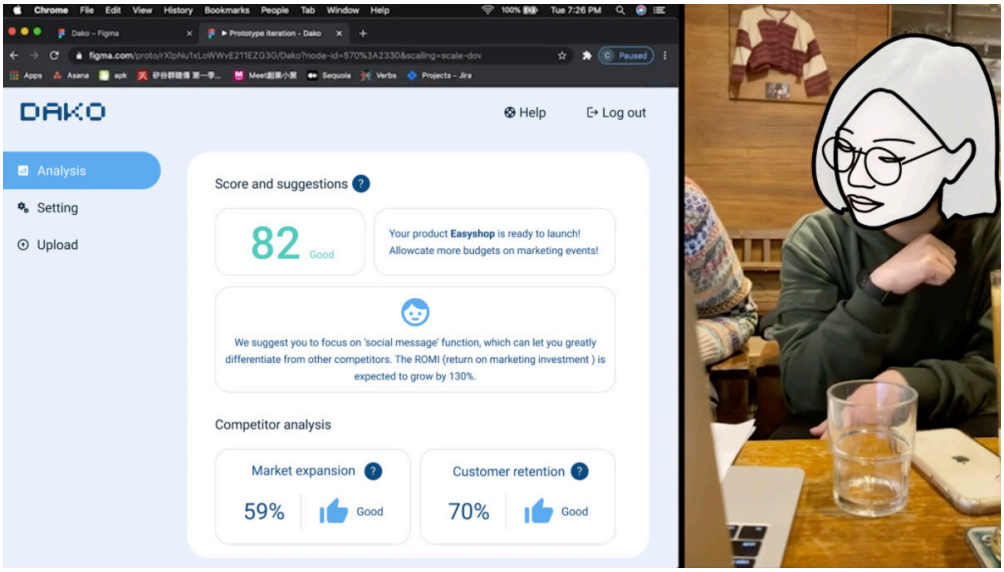


Figure 3-3: A potential customer was trying Dakodata's MVP during the interview

3.2.3 Learn from customer interviews

To validate Dakodata's MVP within limited resources, the total number of interviews is no more than five. Because after the fifth user, researchers will waste time observing the same findings repeatedly but not learning much new (Nielsen, 2000). The results generated from the five interviews were aggregated and analyzed to define the direction of the next version of Dakodata's MVP. The insights are classified into three different aspects, which are desirability, usability, and viability. (Table 3-1)

Aspects	Observations	Explanations
Desirability	The user is suspecting the suggested strategies.	The user doesn't trust the results unless they could see the process of data analysis.
Usability	The user doesn't know how to upload the data.	There is so much jargon used in the product that the user can't understand the meanings.
Viability	The user won't pay for Dakodata's solution.	In such a small-size company, finance is the most critical issue. Rather than paying for a product or service, the decision-makers would like to spend much more time learning free tools.

Table 3-1: Findings anlyzed from MVP1.0 interviews

The first one is the product's desirability. The decision-makers working in early-stage startups have invested lots of time learning numerous data analytics tools and using multiple features to develop business strategies. So they get used to finding out the wanted functions from the complicated data dashboard.

Therefore when they saw Dakodata's simplified interface, they didn't trust the suggested strategy because they couldn't see the data and the underlying algorithms. Credibility comes from transparency. They only believe the results when they can see the rationale.

The second aspect is usability. Dakodata's MVP consists of essential functions like account registration, data uploading, and a suggested strategies dashboard. During the interview, the interviewees were found to have trouble with data uploading. The explanation on that page wasn't comprehensive, so they had no idea what data they should prepare for analysis. They suggested having some graphic examples along with the texts could improve comprehensiveness.

The third learning is viability. Dakodata defined "decision-makers in early-stage startups" as early adopters. However, the interviewers found several signals indicating that the invited interviewees might not be the ideal users of Dakodata. In early-stage startups, people strive to validate their concept as soon as possible because they haven't found a repeatable business model yet. Therefore they regard the financial issue as the most crucial topic and strictly manage their expenses. They said they wouldn't pay for Dakodata's solution even it fulfilled their needs because they had no money to spend on it. Instead, they would like to look for other analytics tools which are inconvenient to use but freely accessible. This learning revealed that decision-makers in early-stage startups preferred to spend more time learning instead of allocating budgets for a more efficient and effective solution.

3.2.4 MVP iterations

Dakodata's product team iterated the MVP based on the interview insights to ensure the company constantly learns from the market. According to the interviewee's feedback, the interface should present the suggested strategy along with visualized legends to increase credibility in the users' minds. The data uploading page also needed to be optimized by adding more explanations to understand the procedures.

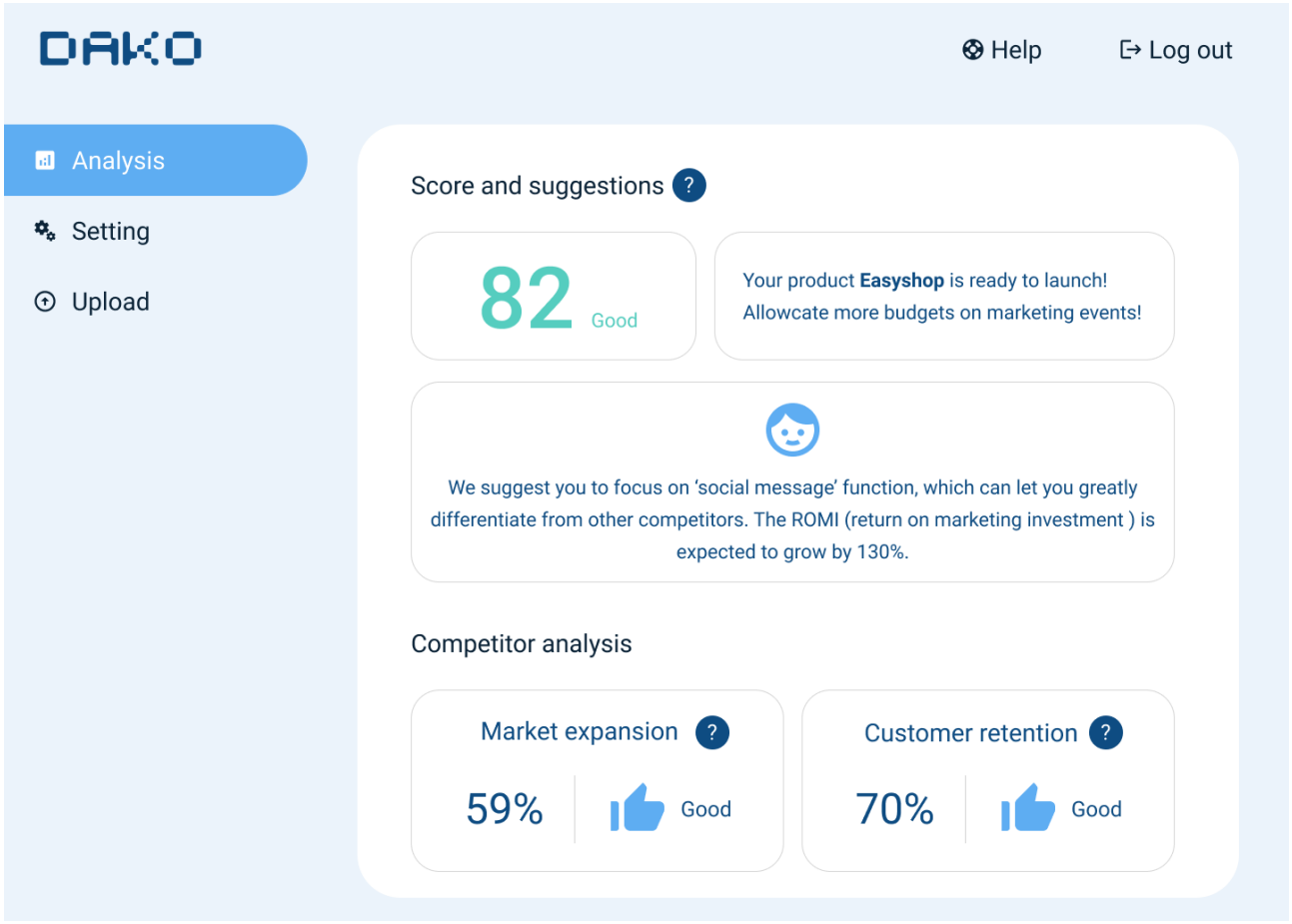
In terms of defining the market segment, the early adopter was changed from decision-makers in early-stage startups to data-related workers who can pay for the product. More specifically, due to the functions that Dakodata's MVP was offering, the customer should be regarding growth rate and retention rate as essential metrics in their work routines.

After the direction of the product and the early adopter were adjusted and redefined, the product team began a new loop of MVP development. Simultaneously, the business development team and engineering team also had their missions to accomplish. On the one hand, the business development team members would conduct more in-depth market research and look for suitable interviewees who might be Dakodata's new potential customers. On the other hand, engineers worked on building data infrastructure and proof of concept (PoC) according to the new requirements from the product team.

For instance, the product team decided to have a visualized pie chart on the dashboard to interpret the data for the purpose of eliminating the users' concerns about suggested strategies. Engineers then researched the open-source prospects via the internet and quickly made a PoC that ensures this concept's feasibility.

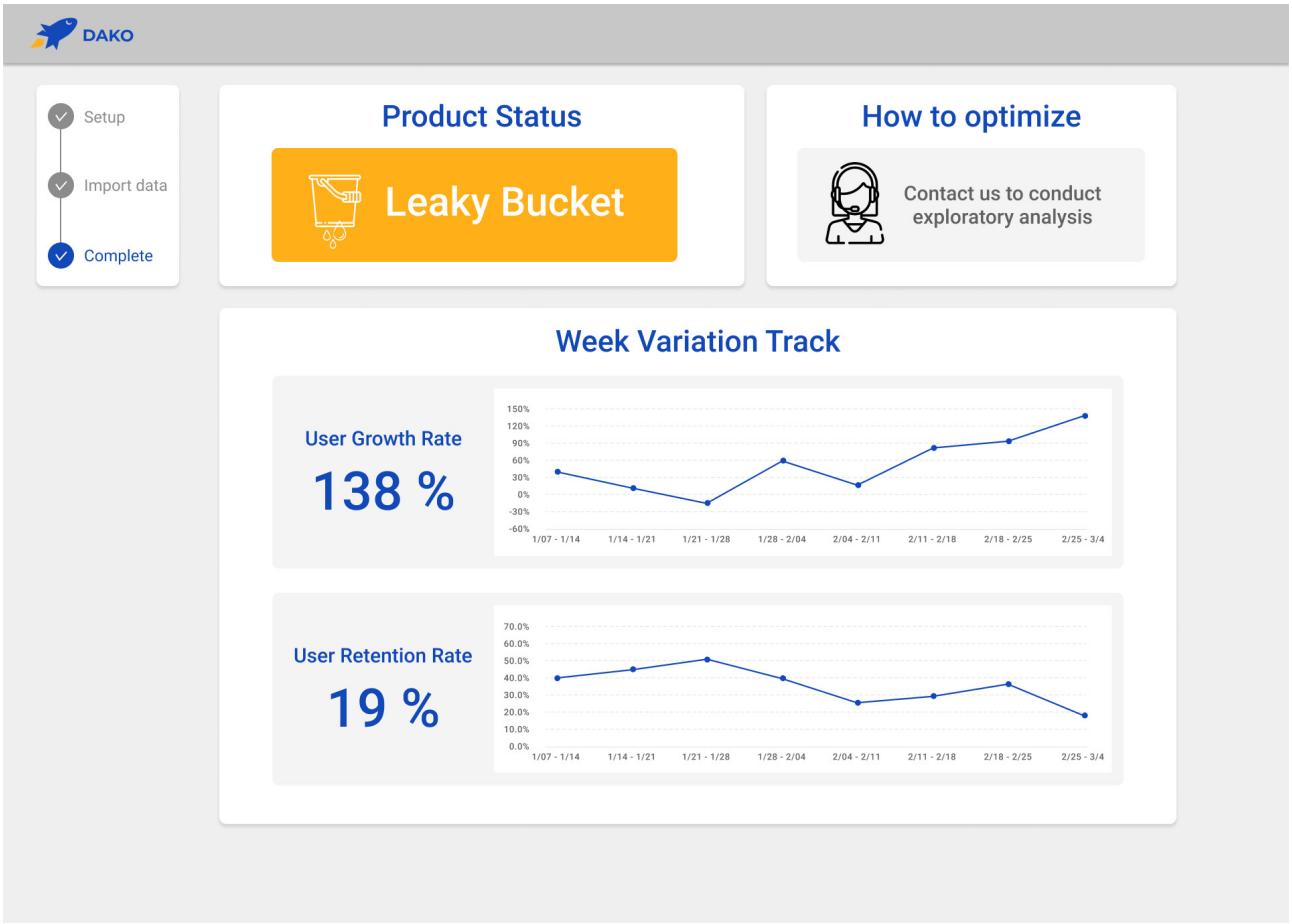
Dakodata started the first loop of MVP development in January 2021 and finished in March 2021. Until July 2021, Dakodata had iterated three times and went through over twenty interviews with different potential customers. The overviews are presented on the following pages.

3.2.5 MVP 1.0 overview



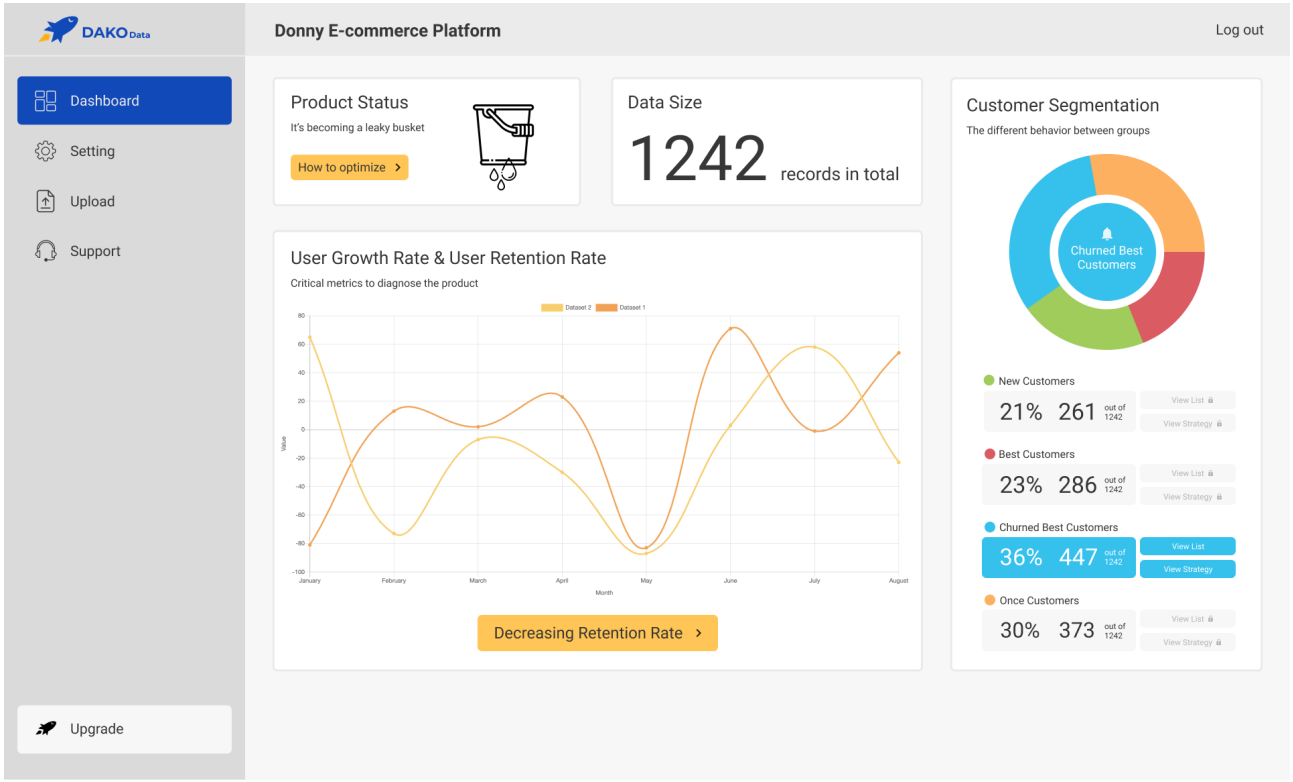
Target market	Decision-makers in small-size companies and early-stage startups.
Hypothesis	If the users are satisfied with a data analytics tool that directly shows the score and suggested strategies.
Product primary functions	Help the user diagnose the product and give it a score along with suggested strategies for optimization.
Main changes from the last version	(None.)
New findings from the interviews	The users didn't trust the results because they couldn't see the process of data analysis.

3.2.6 MVP 2.0 overview



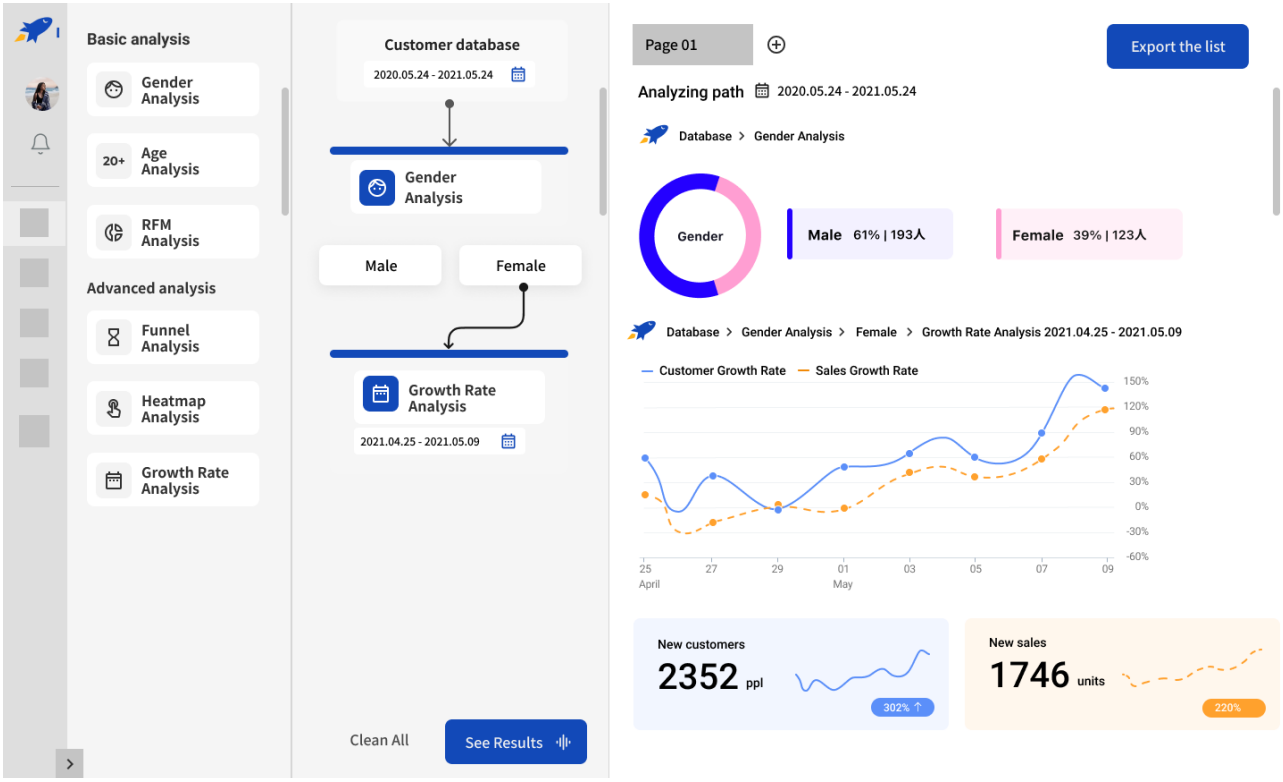
Target market	Data-related workers valuing customer growth rate and retention rate in their companies.
Hypothesis	If the users are satisfied with a data analytics tool that shows the suggested strategies and visualized data.
Product primary functions	Visualize the uploaded data through a line graph and give the suggested strategies according to the results.
Main changes from the last version	Eliminated the scorecard and added some legends for showing the data to the users.
New findings from the interviews	The users only got insights from their customer's growth rate and retention rate. They desired to see more analytics.

3.2.7 MVP 3.0 overview



Target market	Decision-makers without data analysis knowledge.
Hypothesis	If users are satisfied with a holistic data dashboard that gives actionable insights.
Product primary functions	Visualize the data through pie charts and line graphs to give users a sense of their customers' situations and segmentations.
Main changes from the last version	Add new graphs to provide more information in the dashboard. Moreover, the users can export the list of segmented customers to conduct marketing activities.
New findings from the interviews	The users were not satisfied with a fixed dashboard in MVP3.0. Instead, they wanted to conduct data analysis by themselves and see the tailored results.

3.2.8 MVP 4.0 overview



Target market	Companies which have collected customers' data through membership system.
Hypothesis	If Dakodata provides an interactive and flexible way for users to drill down data, they will keep using it to solve their business problems.
Product primary functions	Provide a bunch of flexible modularized components for users to filter out the customer data as they wish.
Main changes from the last version	The concept of showing a fixed dashboard was changed to providing modularized components for the user to interact and explore the uploaded data.
New findings from the interviews	The users found this way to analyze data was helpful and intuitive. They are eager to see more filters that can help them drill down further.

3.3 Personal observations

In MVP development, as a product manager, I intensively collaborated with colleagues among three different teams. However, each team couldn't progress efficiently due to uncertain issues. To find out the obstacles that potentially become the primary problem of Dakodata, I observed their working conditions and analyzed the findings below.

3.3.1 Uncertainty in the product team

Firstly, I found that we initiated the first version of MVP inappropriately. The CEO of Dakodata listed out the required features based on her work experience and brief research on the internet without sufficient qualitative interviews with the actual users. Designers received the task from the CEO and built a prototype to demonstrate the fundamental interactions that helped users go through the process of data analytics. However, one month later, when the product team put the prototype in front of the interviewees, their feedback was dramatically far from the CEO's expectation after trying it. The users couldn't feel the value from it and even mentioned several better alternatives dominating the market. I found these negative signals brought enormous insecurity to the company, and the designers had no confidence to believe Dakodata would succeed. The uncertainty, therefore, appeared among the product team.

3.3.2 Uncertainty in the engineering team

When it comes to the engineering team, the engineers received the feature requirements from the product team and estimated how long it would take to accomplish the tasks. However, the potential risk existed while the product team didn't inform the engineers how the user would use these features to solve business challenges. As a result, the engineers couldn't achieve their potential to deliver a better solution by fully understanding the user's needs. Furthermore, without the strategic context, engineers couldn't expect a scheduled timeline to make significant progress in terms of MVP development. This phenomenon caused uncertainty among the engineers and affected their performance.

3.3.3 Uncertainty in the business development team

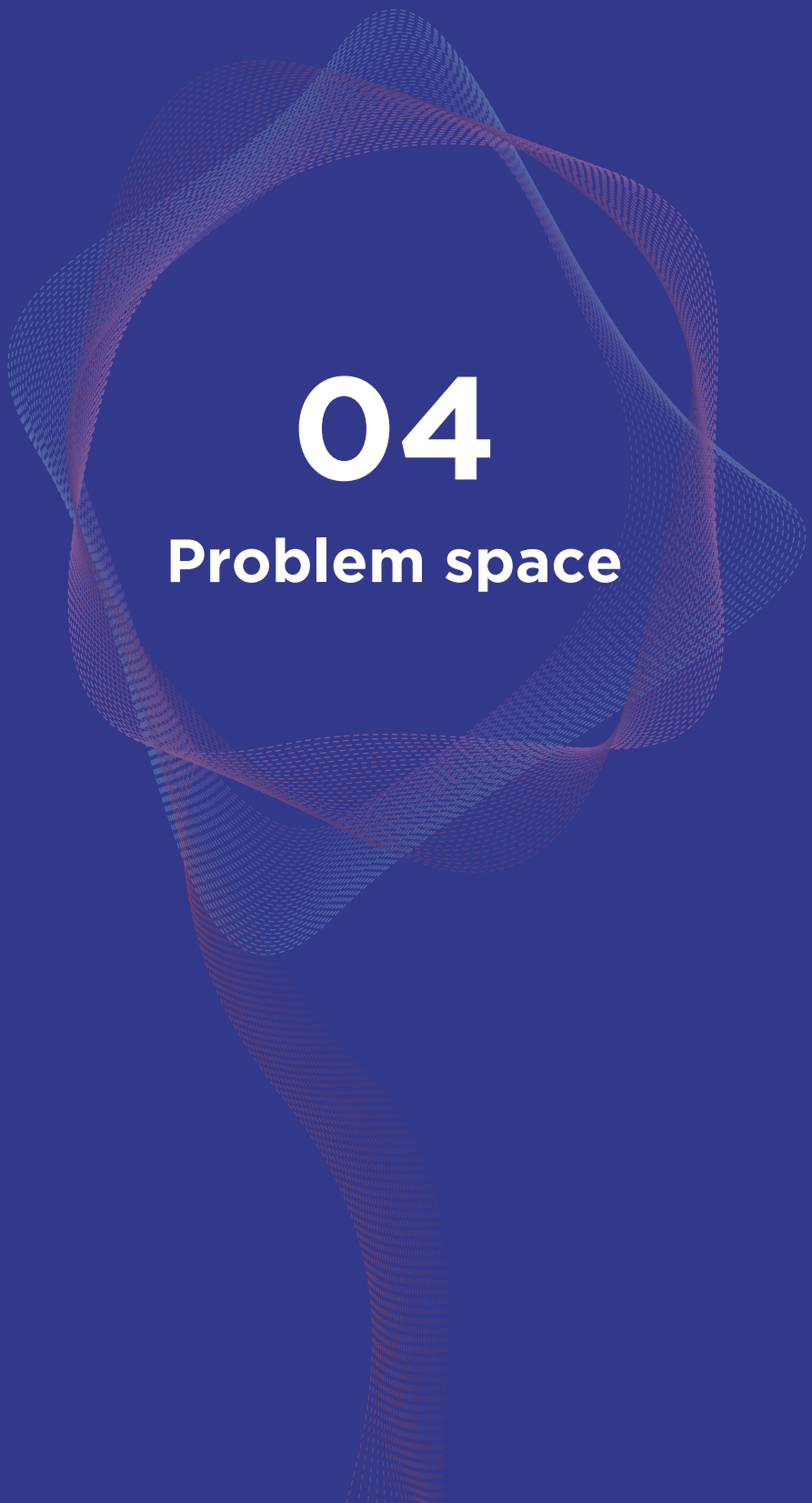
Unlike the product team that fully understood the MVP's strengths, limits, and details, the business developers were relatively unfamiliar with the product itself. This situation made the business development team face uncertainties when reaching out to potential customers in the market. Without data science expertise, two main issues in the team are derived from this circumstance. Firstly, the business developers couldn't identify the early adopter effectively due to a limited understanding of the product and its core value. If they contacted the wrong customers and brought their completely different expectations to the product team, the designers would be confused and regard the MVP as an enormous failure. Secondly, suppose the business developers reached the right potential customer that probably became the early adopter; In that case, team members still couldn't successfully communicate with the customer because of the business developers' lack of product knowledge. As a result, the customer acquisition rate was consistently at a lower level.

3.3.4 Conclude the uncertainties

On the way to iterate MVP until achieving product/market fit, I acknowledged some hidden obstacles that appeared as time went by. Table 3-2 concludes my findings by elaborating on the uncertainties of the three teams. Aside from my observations, saturating the insights from different points of view is needed as well. Therefore, I conducted numerous qualitative interviews with both employees and leaders in Dakodata. The results are discussed and analyzed further in the next chapter.

	U1: Uncertainty in the product team	**U2: Uncertainty in the engineering team**	**U3: Uncertainty in the business development team**
Description	Designers didn't know how to build the product that met the customer's needs.	Engineers weren't sure about the end user's needs so they couldn't deliver the best solution efficiently and effectively.	Business developers couldn't identify who is the potential customer and who is not.
Relevant quotes	"The future of product discovery is unpredictable, we still don't have a clear image about our user and market." "Different customers have different needs. How can we build the desired product to meet all their needs"	"Cause we are still at the very early stage that just have contacted little potential clients, the needs of them aren't clear yet." "I want to know more about how the user will interact with our product so that I can build the feature efficiently."	"I think we lack a method to find the suitable early adopter of our product." "I have sent lots of inviting emails to the potential customers, but only less than 10% of them reply to us. So that is what it is."

Table 3-2: Uncertainties observed from the three different teams in Dakodata



04

Problem space

Chapter 4 | Problem space

In this chapter, I first discuss the findings from the stakeholder and employee interviews, then synthesize the insights with my observations to develop a primary problem that I will address in the thesis.

4.1 Qualitative interviews

The interviews are conducted conversationally with the interviewee, consisting of closed- and open-ended why or how questions. Instead of structured interviews that focus on restrictive questions, I utilize semi-structured interviews to make the dialogue meander around the topics on the agenda, which is worth the effort in terms of the insights and information gained (Adams, 2015).

In total, nine interviews were conducted individually with three employees and three co-founders. The co-founders also acted as leaders of the product team, engineering team, and business development team. Each co-founder participated in the interview two times with different points of view; one is a co-founder's perspective caring about the organizational issues, and the other is the team leader's perspective caring about teamwork issues. In addition to the management level, I also invited three bottom-level employees from three different teams for interviews to ensure sufficient variety. (Figure 4-1)

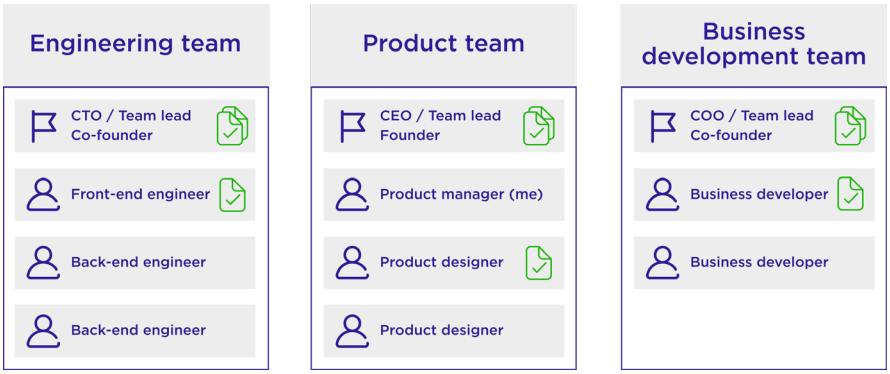


Figure 4-1: Interviewee selection of qualitative interviews

Aside from these predefined questions, I also asked some follow-up questions according to their answers. I recorded and transcribed the nine interviews on a digital canvas because the quotes are movable, so I can analyze the insights by linking the relevant ones. (Figure 4-2)

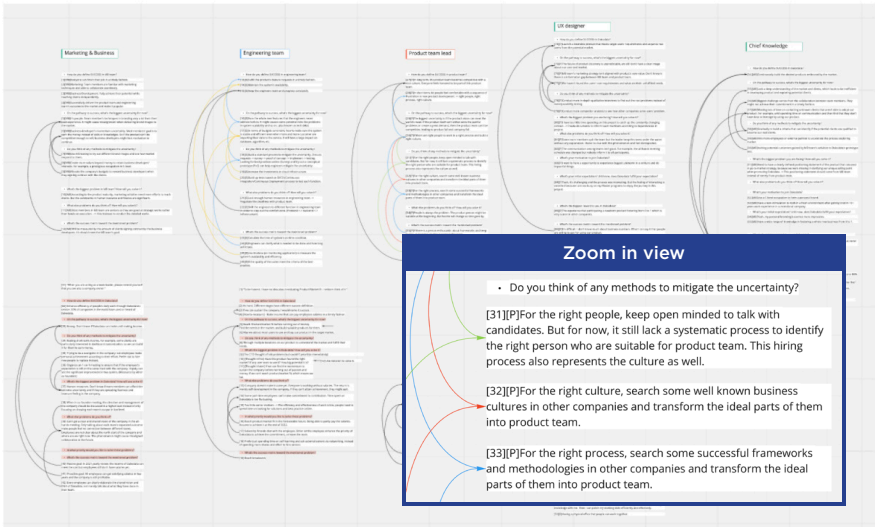


Figure 4-2: The results of the interviews

4.2 Insights synthesis

In the stakeholder interviews, I asked a sequence of questions to understand the situation, "How do you define success in Dakodata?" "On the pathway to success, what's the most significant uncertainty for now?" "Do you think of any methods to mitigate the uncertainty?" "Aside from uncertainty, what's the biggest problem you face, and how will you solve it?" "Finally, what's the success metric toward the mentioned problem?" The results of the interviews are analyzed from two different aspects. The first is the leader issue, which consists of insights from organizational viewpoints shared by three co-founders. They give their thoughts to the company's uncertainty. The second aspect is the team issue. Three employees from the product team, engineering team, and business development team told their struggles with their daily work in Dakodata.

4.2.1 Leader issues

When I asked three co-founders (CEO, COO, CTO) the biggest challenge for Dakodata to succeed, they first defined its success criteria and then answered the questions. The CEO said if she could let employees work in this company with satisfying salaries, she would tell this company is successful. To achieve this criterion, Dakodata needs to keep selling its product to generate sufficient income for paying employee salaries. Therefore, Ching said the most significant uncertainty was that she couldn't predict when Dakodata's product would become popular in the market. She didn't even know how confident the employees were willing to persist.

The CTO has a similar point of view that is also related to finance. He defined the success of Dakodata by measuring if the company could make enough income to sustain the business. However, uncertainty played a role in his mind that he didn't know if Dakodata could attract massive customers in the target market to adopt Dakodats's product. To dig deeper into this issue, all the co-founders didn't discuss and reached a consensus on the target market. Therefore, the unclarity of the target market became an inevitable obstacle when planning the direction of the product development and the go-to-market strategy.

The COO's claimed the criterion of Dakodata's success in a more market-oriented way, "30% of worldwide companies have used or heard of Dakodata." The interesting thing is that her most significant concern for reaching this goal is finance as well. Because Dakodata is still developing MVP, the COO doesn't know if the company could survive until breaking even. So she was thinking of some ways to generate short-term income, like offering customized engineering services. However, it would slow down Dakodata's product development speed, which the COO expected not to happen.

To overview the interview results, I classify the relevant quotes into five different categories in a table. (Table 4-1) Each row in the table represents a category of the leader issue. In the first category, three co-founders were worried about employee turnover because they were hired without salaries but merely a sense of achievement. If Dakodata didn't have a clear goal and made significant progress quickly, the employees might be disappointed and quit the company. The leaders were also anxious about how to build the right product that met users' actual needs. Therefore, they determined the direction of new product development based on customer interviews' feedback and the leader's gut feeling.

However, there is enormous uncertainty coming from the market positioning as well. Does this product fit the right market? How was Dakodata's product far from customer adoption? Product orientation or market orientation? The leaders had no idea to answer these unknowns. Yet, they were aware that these uncertainties could significantly impact finance issues and employees' performance.

Lacking a big picture also played a role in this situation; one co-founder found the company's vision was missing. In the all-hands meeting, employees merely talked about each team's output instead of the outcome to the Dakodata's business objectives. As a result, they were not clear about its long-term goal and where they were on the way toward it. Three co-founders also had the same problem since they seldom discuss and exchange their thoughts on the company's mission and product vision. This misalignment among leaders led to fluctuated decisions on product strategies and inefficient collaboration between employees.

	CEO (founder)	COO (co-founder)	CTO (co-founder)
L1: Leaders were worried about the uncertain envirionment that affects employee turnover. **Related issues:** **U1 / U2 / U3**	"If the employee can't get used to working under high uncertainty, we will ask him to leave."	"Don't know if team members can afford the extreme uncertainty and if they are spreading fears and insecure feelings in the company."	"The return is merely self-development in the company. If they can't attain achievement, they might quit."
L2: Leaders were anxious about what the desirable product would be like. **Related issue:** **U1**	"Strive to make sure that the direction of the product is right via customer interview feedback and guts feeling."	(None).	"If any user wants to use it? How big of potential is it?"
L3: Leaders had difficulties in understanding the market. **Related issue:** **U3**	"Can't make sure when our product becomes popular in the market."	"If 30% of companies in the world have used or heard of Dakodat, then I will claim that we are successful."	"May we attract most users to use and buy our product in the target market?"
L4: Leaders were looking for money to pay employee salaries. **Related issue:** **U1 / U2 / U3**	"Being able to pay the salaries partly. I assume we can achieve it at the end of 2022."	"Money. Don't know if Dakodata can persist until making income."	"Company hasn't made any income yet. So everyone is working without salaries."
L5: Leaders were aware that the company lacks a collective big picture. **Related issue:** **U1 / U2 / U3**	"Never deeply discuss the mission of the company with other co-founders. Don't know what they think of it."	"Can't get a clear and shared vision of the company in the all-hands meeting."	"It's hard to articulate the success of the company. Different states have different success definitions."

Table 4-1: Five categories of the leader issues

4.2.2 Team issues

To saturate to insights from a different point of view, I ask three employees working in the product team, engineering team, and business development team what success would look like in their minds and their biggest challenge. The results from the interviews are classified into five categories, as shown in Table 4-2.

During the interview, employees indicated that they wanted to know the customers' actual needs. In the product development process, the building features were usually defined by managers in the company. When designers built the prototype accordingly and tested it with potential customers, they were shocked to find these features didn't explicitly solve the user's problems. Therefore, the designers were worried about the product's desirability. Suppose the product can't solve the painful challenges or create great demand in the market; Dakodata can't be competitive. This situation would ultimately lead to product failure and company failure.

Some people also mentioned misaligned cross-team collaboration is one of the biggest challenges in their daily practice. The product was still at an early stage, and the business developers didn't have experience in selling immature products. Therefore, when trying to promote Dakodata's MVP by utilizing their working experience in the past, they hardly made significant progress in customer acquisition. They needed strong support from the product team to share them with product knowledge so that the business developers could be more confident to answer the client's questions.

Furthermore, some potential customers also expected different features. Again, the business developers struggled to commit because they couldn't promise when Dakodata would fulfill the customer's particular requirement. Significantly, the company's resources were restricted, so it shouldn't be in a case that Dakodata would realize every customer's wish. Then how to make wise tradeoffs was a big challenge for Dakodata as well.

This issue did not only happen in the business development team. One of the interviewees from the engineering team also had decision-making issues. He was wondering how leaders determined the features that compromised potential customers' needs. During the MVP developing process, the product team changed the decision constantly due to different potential customers' requirements. And these fluctuating circumstances made engineering costs high, and the engineers were confused as well. Unfortunately, the interviewee didn't have a satisfying solution at the moment. He merely regarded this issue as a common phenomenon happening in an early-stage startup.

The last category is about human resource issues. Working in such a highly uncertain environment is challenging, especially when the return is merely a sense of achievement except for salaries. Some employees were worried about if the company listened to their hope and tried to fulfill them. For example, an engineering team employee said that he wanted to collaborate with a senior colleague who was also good at front-end coding. In this way, the employee could improve his engineering skills and become more satisfied even though he didn't gain money from working.

After understanding the issues analyzed from my observations, the leaders' points of view, and the employees' points of view, I linked the relevant categories again to come up with themes to define the most significant problem., which will be discussed further in the next paragraph.

	The product team	The business development team	The engineering team
T1: Employees were eager to know the user's unfulfilled needs so that Dakodata can build the desirable product. **Related issues:** **U1 / L2**	"We haven't found the users' root requirements and what their unfulfilled needs are."	"We have to continuously build the desired products embraced by the market."	"Because we are still at the very early stage that just has contacted little potential clients, the needs of them aren't clear yet."
T2: Employees strived to be competitive by having a deeper understanding of the target market. **Related issue:** **U3 / L3**	"We have to conduct more competitor analysis to see how other companies solve users' problems. Those insights are helpful."	"Lack a deep understanding of the market and clients, which leads to being inefficient in developing products and exploring potential clients."	"Challenges appear when facing the exclusive new features that engineers have never addressed before. It might cause some potential risks in system scalability."
T3: Employees were frustrated in misalignment between different teams. **Related issue:** **U1 / U2 / U3 / L1 / L5**	"The business development team's marketing strategy isn't aligned with the product's core value. Don't know if there is a misalignment between different teams."	"Need to have a clear positioning statement of the product that can be used in go-to-market strategy, because we were struggling with conveying our unique selling point."	"Can't collaborate seamlessly due to the varied work time of team members, especially while dealing with high dependency tasks."
T4: Employees were eager to make wise trade-offs that prevent unnecessary wastes. **Related issue:** **U1 / U2 / U3 / L3 / L5**	"Try to allocate more time on in-depth qualitative research and define the right problem before diving into solution space."	"Wasting lots of time on contacting clients who aren't able to buy our product. Only until we spend time on communication and then find that customers don't have data to use our product."	"While keeping changing directions of the product development to fulfill different customers' needs, those changing decisions confused engineers and wasted engineering resources a lot."
T5: Employees were feeling ignored so the they hoped the company could listen to their needs. **Related issue:** **U1 / U2 / U3**	"Some team members quit the team, but the leader kept this news under the water without explanation. So I have no clue about this news and feel insecure."	"Most member's goal is to earn money instead of skills or knowledge. So if the product can't be competitive enough to sell, business developers might lack the motivation to continue their jobs."	"Expect to have an experienced mentor to guide me through an organized process and help me develop better skills in program coding."

Table 4-2: Five categories of the team issues

4.3 Problem statement

Four high-level themes have emerged after reviewing and synthesizing all the insights aggregated from the interviews. Table 4-3 shows the description, relevant issues, and impacts of each theme.

The first theme represents a phenomenon complemented by one leader issue and two team issues that employees in Dakodata didn't have a collective company objective. As a result, they hardly worked efficiently and effectively as well as they couldn't make wise trade-offs when facing challenges in their daily pracitce.

The second theme is about product development complemented by one observation, one leader issue, and one team issue. The learnings from the customers were not sufficiant so employees still didn't know how to deliver the desired product. Additionally, the needs of customers varied from their working scenarios which was also overwhelming for the employees. If the product team intended to fulfill all the requirements coming from different customers, then it became not feasible and would lose the focus. As a result, the direction of the product was missing and the employees didn't have an effective process in decision-making to build the right product.

In the third theme, the problems in product marketing were coming from one observation, one leader issue, and one team issue. The business developers couldn't achieve their potential in selling Dakodata's product due to an unclear market positioning. Additionally, the business developers didn't even know the product's unique selling points, which became an obstacle for finding early adopters.

	Theme 1	**Theme 2**	**Theme 3**	**Theme 4**
Description	Company objective	Product development	Product marketing	Human resources
Relevant issues	L5: Leaders were aware that the company lacks a collective big picture. T3: Employees were frustrated in misalignment between different teams while task. T4: Employees were eager to make wise trade-offs that prevent unnecessary wastes.	U1: Designers didn't know how to build the product that met the customer's needs. T1: Employees were eager to know the user's unfulfilled needs so that Dakodata can build the desirable product. L2: Leaders were anxious about what the desirable product would be like.	U3: Business developers couldn't identify who is the potential customer and who is not. T2: Employees strived to be competitive by having a deeper understanding of the target market. L3: Leaders had difficulties understanding the market.	L1: Leaders were worried about the uncertain environment that affects employee turnover. T5: Employees were feeling ignored so the employees hope the company can listen to their needs. L4: Leaders were looking for money to pay employee salaries.
Impacts	Employees hardly worked efficiently and effectively.	The employees couln't build the desirable product in a feasible way.	Business developers couldn't identify the early adopters and reach out to them.	The employee turnover rate was high.

Table 4-3: Four themes derived from my obervations, the leader issue, and the team issue

Finally, the fourth theme is about human resources complemented by two leader issues and one team issue. All employees in this venture are working without salaries. Their return on investment is merely a sense of achievement and basic share in the company. However, frustrating failures derived from the highly uncertain environment consistently challenged them. People might quit the company without hesitation when the sense of accomplishment had vanished, and shares couldn't become a valuable return.

I dug into the relationship between four different themes by having numerous discussions with stakeholders of Dakodata. A consensus has been reached that the first theme, company objective, was the most critical and impactful one. The CEO said that every failure in other themes was derived from the lack of company objectives. Therefore I define the first theme as the primary problem that I need to address in the thesis, which I stated below:

Dakodata doesn't have shared company objectives. This problem causes high uncertainties which leads to low productivity throughout the entire company.

05

Solution space

Chapter 5 | Solution space

I introduce the design brief and methodologies used to address the primary problem defined in the problem space. Additionally, the design solution is conceptualized and presented in this chapter as well.

5.1 Design brief

In the problem space, the defined challenge is, "Dakodata doesn't have shared company objectives. This problem causes high uncertainties which leads to low productivity throughout the entire company." Before framing the design goal, I discuss company objectives in the statement to clarify the problem.

5.1.1 The definition of company objectives

In an early-stage startup, the mission is the backbone of the business, the fundamental objective for building the company (Lazarova, 2020). It also attracts talented employees who believe in the company mission and values and work hard to achieve results (Rogers et al., 2018). Most companies have a mission statement to summarize the purpose of the business; however, the company mission should be paired with the product vision, which explains how those companies plan to deliver on this mission (Cagan et al., 2021). Therefore, to give the specificity of the problem statement, I define the company objectives as the company mission and product vision.

However, Dakodata was founded without a clear purpose but merely a reckless idea from the founder's work experience. The leaders didn't regard articulating the compelling mission and product vision as the must-to-do tasks. As a result, the employees in Dakodata were negatively affected due to the lack of the company's big picture.

5.1.2 Design goal

The design goal of the thesis is to enhance the leaders' awareness and help them develop and communicate the company mission and product vision. With a strong sense of objective, the employees are more engaged and more productive than those who are merely satisfied with their work (Taparia, 2020). Therefore, I create a design artifact to stimulate the leaders to foster a collective big picture. Additionally, the scope of the thesis also covers the implementation of the solution to evaluate the outcome. When conceptualizing the solution, every term used in the deliverables should be comprehensive without jargon because the target audiences are the company's co-founders coming from multidisciplinary fields. The success metric is successfully helping the leaders develop the mission statement and the product vision and letting employees understand the big picture and know what they are going to do.

5.2 Conceptualization

The conceptualization shows the process of the solution design, which decomposes the fundamental problem into several elements. I considered raising awareness, forming mission and vision, and communicating the results as three crucial elements in the solution space.

5.2.1 Raise the awareness

Raising the awareness of the company's mission and product vision is the first fundamental task needed to be addressed because the leaders of Dakodata are never conscious of the impacts of the company's big picture. Awareness involves comprehending the environment through the use of senses (Hari et al., 2005). To investigate why the leaders do not regard the company's mission and product vision as the actual jobs, I conducted several interviews with each co-founder by asking them what the company mission and product vision are in their minds. Table 5-1 compared the findings among three co-founders and came up with the collective problem indicating that they didn't reach a consensus on its big picture.

As the leaders in Dakodata, three co-founders both thought that the company's mission and product vision played a vital role in decision-making and employees' alignment and engagement. However, they had different views on the company's mission and product vision. Without sharing their thoughts to reach a consensus, the leaders didn't achieve the potential of having the company's objectives, neither benefit the employees suffering from lacking the strategic context.

	CEO	**CTO**	**COO**
What's the essential thing in Dakodata?	"Survive the company by having a profitable business model."	"Recruit the right people and make a business plan."	"A structured experiment to validate the idea."
To what extent is the importance of the company's mission and product vision.	"It's crucial to help employees align with the company's holistic objective."	"It's crucial to give decision-makers a direction when trading something off."	"It's critical to bring engagement and stick the employees together."
What's the company mission and product vision?	**Company mission:** "Democratize data science so that every person can capture values from it." **Product vision:** "A worldwide accessible platform that can democratize data science to benefit every person."	**Company mission:** "We don't have it." **Product vision:** "A product that can assist or replace data analysts in a company."	**Company mission:** "Automate the process of data analytics." **Product vision:** "A storytelling dashboard to directly show data insights for the users."
Collective problem	Three co-founders interpret the company's big picture differently and never reach a consensus with each other.		

Table 5-1: Three co-founders' points of view on the company's objectives

According to the findings in the awareness issue, I seek a solution to enrich the background of the company's mission and vision so that "what matters" stands out clear and engages among the group of people. Therefore, Hari et al. introduced five computer-based knowledge capture awareness tool levels, which are interactive and versatile to attract the audience's attention. Three of the five levels related to Dakodata's situation are elaborated on here.

The first level is an introduction to knowledge capture. It indicates the definition of knowledge, including the quiz and the recap for participants to reflect on the knowledge. An examination is a practical approach to catch participants' attention because they must concentrate on the assigned task. Moreover, the recap session is valuable for letting the participant know the gaps between known and unknown knowledge, indicating new areas that can be further explored. While applying this concept to Dakodata, the first step is to introduce the definition of its mission statement and product vision and how they impact the whole organization in terms of employees' productivity. Secondly, giving a quiz and recaps afterward can effectively make the audiences fully understand the necessity of developing a shared company's mission and vision.

The second level is the process of knowledge. Hari et al. advocated framing a well-organized structure that participants can easily follow and reach expected outcomes. When it comes to Dakodata, the process of developing the company's mission and product vision should be formalized. And this created framework can become a regular activity for the leaders to review and iterate on it if needed.

The third level is some of the critical issues associated with knowledge capture. Several interactive questions will be asked and discussed to reflect on different topics by sharing their thoughts. For example, the leaders in Dakodata are invited to discuss the variation in technical infrastructure after figuring out the company mission and product vision. The audience's awareness of impacts derived from the given topic would be raised by answering the question.

Three different levels gave an overview of how this awareness tool contributes to knowledge capture activities. After addressing the first crucial element, I then move to the second element in conceptualization, which is the approach that helps leaders define the company mission and product vision.

5.2.2 Form the mission and vision

A mission statement is a summary of an organization's goals and values (Indeed, 2021). It shows the company's long-term goal giving employees a clear image that the company stands for. A compelling mission also describes an ideal scenario in the future that the customers desire (Cagan et al., 2021). Triggered by the great objective, the company will strive to realize it in around five to ten years.

However, employees of Dakodata didn't have a sense of the company's big picture. They hardly believed in everything they were doing since they couldn't see the strong connections between leaders' decisions. On the other hand, three co-founders interpreted the company's purposes in their way. The CTO couldn't even tell what the company mission was. This situation led to high uncertainty among the employees and negatively affected their operational performance. To eliminate this issue, the founders should regard outlining the company's mission statement as the first vital thing they must accomplish before diving into their daily practice.

When writing down the company's mission statement, Cagan gave three key elements which entrepreneurs should take into account:
1. Trying to make clear what the purpose of the company is.
2. Don't say anything about how to accomplish that purpose.
3. Be concise and short.

The entrepreneurs should emphasize the clarity of the company's purposes because the audiences have to capture the company's core value at first glance quickly. Therefore using jargon in a mission statement is not appropriate. Additionally, while writing the mission statement, the company shouldn't include the approach used to achieve the purpose because that is what the product vision serves. The company only needs to concentrate on explicitly articulating its mission and ensuring that it's also a desirable future people want to realize.

After figuring out the company's mission statement by following the three main rules, the next step is to explain how it achieves its mission. The product vision describes how the company realizes the ideal future in two to five years through its product or service. Its primary purpose is to concretize the company's deliverables and inspire the teams (and stakeholders, investors, partners, and prospective customers) to help realize this vision (Cagan et

al., 2021). Productboard indicated that a great product vision should include three principles:
1. Be customer-focused.
2. Be a bit stretchy, but not too unrealistic.
3. Show differentiation.

Customer centricity is a fundamental mindset. Typically, in an early-stage startup, the company doesn't have any real users, so employees hardly hear outside voices if they don't have the right mindset. Equally, while writing a compelling product vision, it is crucial to consider the customer's problem and what solution can genuinely solve it. Moreover, showing differentiation is needed because there are many competitors that the customer can choose from in the real world. If the company can't explain how its product meaningfully differentiates from other competitors, the customer won't adopt it and go for a better alternative.

Until now, I have discussed how to form the company's big picture. The next step is to think of an effective way to communicate the mission and vision throughout the company. Therefore, in the next paragraph, I introduce some applicable methods used to ensure the quality of communication.

5.2.3 Communicate the results

Taking appropriate actions while and after developing the company's mission and product vision is vital to ensure integrity in the solution space. To ensure communication effectiveness, I recognize and consider the applicable awareness systems from academic research (Vyas, 2011) and discuss two of them related to Dakodata's situation.

The first one is TeamWorkStation (TWS), which is one system that enables collaborative physical tasks between distant co-workers (Vyas, 2011). People are invited to a virtual meeting space with a communicative platform which varies considerably in different contexts. For example, in Dakodata's product team, designers use TWS to discuss product ideas with a digital canvas, making every user's movement and modification visible to collaborate seamlessly. This utilization indicates the core value of TWS, which is being able to support awareness by letting participants do things simultaneously. TWS is an ideal medium for Dakodata's leaders to remotely co-create the company's mission and product vision.

The second applicable awareness system is called media spaces, suitable for conveying a company's big picture. Media spaces remotely connect workers located in different sites by using audio and video channels. Rather than scheduled online meetings, the purpose of media spaces is to offer an 'always-on' audio-video link between remote co-workers to have informal discussions and chats any time they want (Vyas, 2011).

In Dakodata, the employees are working remotely from Asia, Europe, and America. Because of the time zone, the daily stand-up meetings were held via an online assistant application that employees can leave their brief working reports in the chatbox. In the weekly retrospective meetings, all employees would attend a virtual room to verbally discuss the working progress and get feedback from colleagues instantly. Therefore, the aim of media spaces, which are always available for discussion and chats weren't fully achieved in Dakodata.

As an aware system, the media space applications strongly support informal awareness between a set of remotely-located participants (Vyas, 2011). Therefore, a media space could be one of the approaches to generate casual awareness among employees constantly. Furthermore, in the context of Dakodata, it can be utilized to raise awareness of the mission and vision throughout the company.

5.3 Design solution

After discussing the conceptualization elements, I came up with the solution: a design toolkit including a canvas and a brochure (Figure 5-1) that helps entrepreneurs collaboratively build the big picture of their company by articulating the mission statement and product vision.

In a company, there are usually multiple stakeholders making essential decisions. While forming the company's big pictures, the mission and vision canvas become a co-create tool to empower decision-makers to visualize and exchange their thoughts. Even Dakodata's meeting is conducted remotely, the participants can still paste the canvas on any online whiteboard and visual collaboration platform to ensure the quality of outputs.

Aside from the canvas, I design an instruction brochure to explain every step of developing the company mission and product vision. With a clear guideline, every participant can prepare the needed information before the meeting and increase the efficiency of the upcoming co-creation session.

Figure 5-1: The mission & vision canvas and intsruction brochure

5.3.1 The mission and vision canvas

Figure 5-2 shows the mission and vision canvas that critical stakeholders will fill out in the design workshop. The canvas consists of two parts. The upper one is the area for figuring out the company mission, and the lower one is about the product vision.

In the workshop, the participants will put their thoughts on the blank area and discuss the ideas with the others. Some tips are attached to assist participants with a clearer image of what a good mission statement should be. In case the participants are struggling with writing down their ideas, I add some examples of other companies' mission statements in the instruction brochure for inspiration.

After figuring the company mission, the process of developing the product vision is the same. By making the ideas visible on the canvas, the participants can quickly iterate on them to collectively decide on the company's objectives. The important thing is that the order of determining the company mission and product vision is fixed. Because the participants have first to outline the mission, which represents the reason that company exists and the ultimate goal, then figure out the product vision that keeps the organization truly focused on the product, leading to achieving the company's mission.

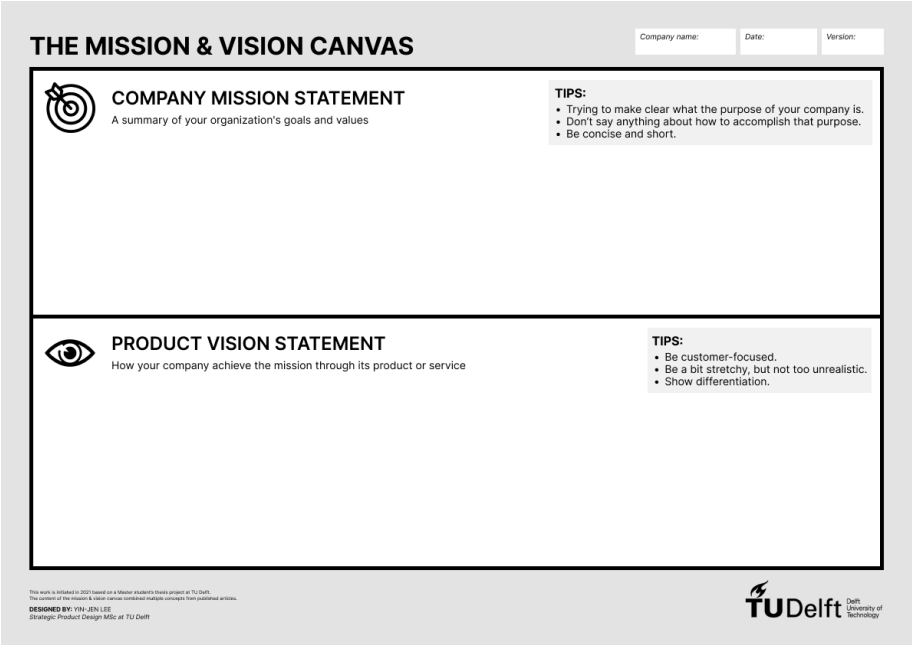


Figure 5-2: The mission & vision canvas

Using the canvas to co-create in the design workshop enables every key stakeholder to engage in making decisions. As a result, they would fully share the ownership and accountability of the company's objectives.

5.3.2 The instruction brochure

The instruction brochure is a twelve-page manual showing the details about every step in developing the company mission and product vision. The booklet has four main parts: the introduction, preparation, company mission, product vision, and next steps. (Figure 5-3)

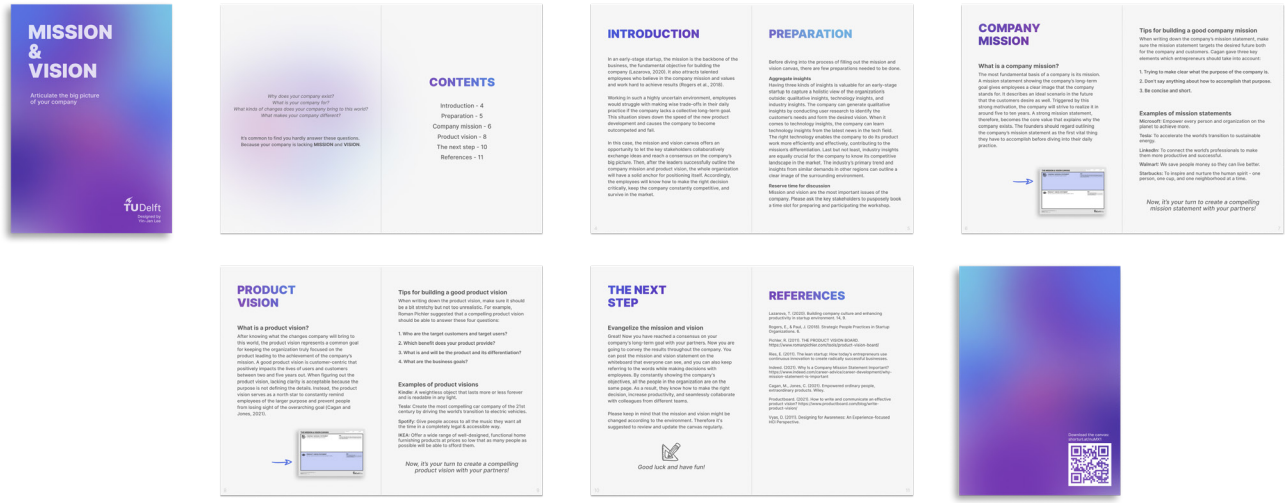


Figure 5-3: The overview of the intsruction brochure

On the preface page before the introduction, I start the booklet with four questions that stimulate readers to raise their awareness and rethink what the core values of their companies are:
1. Why does your company exist?
2. What is your company for?
3. What kinds of changes does your company bring to this world?
4. What makes your company different?

These questions applied the Golden Circle model (Sinek, 2009) to give readers a sense of the high-level objectives in a company. If readers find they're hardly answering these questions, then this situation signals that perhaps the company doesn't have a big clear picture yet. As a result, the purpose of the preface, raising awareness on forming the company's big images, is fulfilled.

On the introduction page, I first explain the importance of the company mission and product vision and how they impact the whole organization regarding employee productivity, making wise decisions, etc. Then, I introduce the mission and vision canvas as an effective tool to convey ideas while developing the company's objectives across multidisciplinary stakeholders.

After the introduction page, there is a preparation page to remind readers to prepare the necessary information for the workshop. I suggest the decision-maker aggregate three valuable insights to capture a holistic view of the organization's context. They are qualitative insights, technology insights, and industry insights.

The company can generate qualitative insights by conducting numerous user research. How do customers react to the product? What do they value in the product? What are the pain points they suffered? Those questions can help the company identify the customer's needs and form the desired vision. When it comes to technology insights, the company can learn technology insights from the latest news in the tech field. The right technology enables the company to do its product work more efficiently and effectively, contributing to the mission's differentiation. Last but not least, industry insights are equally crucial for the company to know its competitive landscape in the market. The industry's primary trend and insights from similar demands in other regions can outline a clear image of the surrounding environment.

The preparation is an individual task for every key stakeholder to think about the company itself seriously. Then, with sufficient insights, they can have a deep introspection and enhance the quality in the next step, discussing the company mission and product vision. While discussing the company mission and product vision in the design workshop, the participants will use the canvas to visualize their thoughts. There are four pages in the brochure to explain the details about the company mission and product vision. (Figure 5-4)

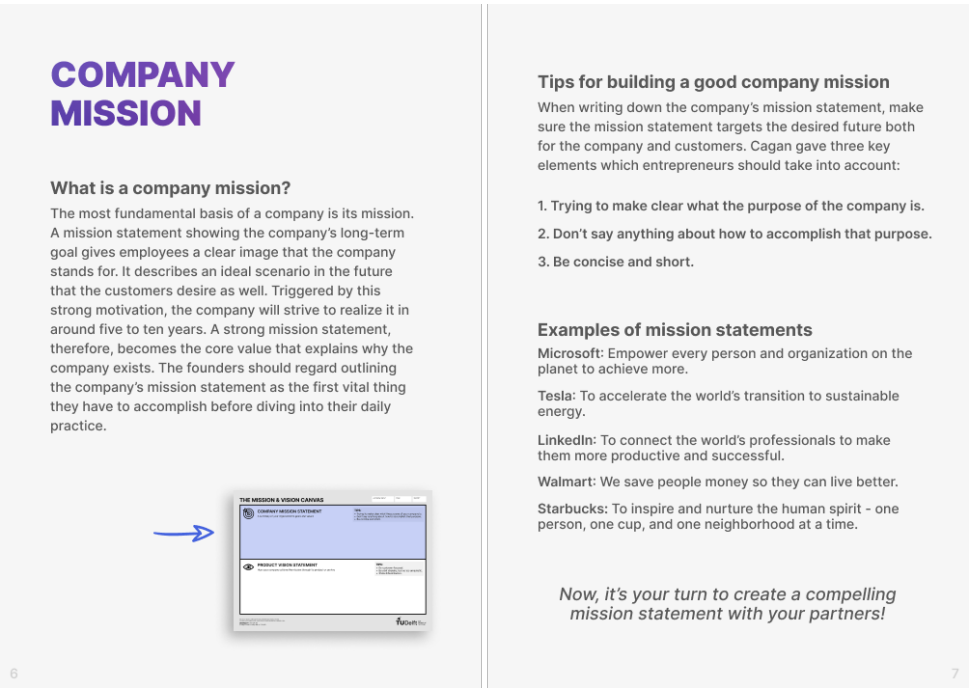


Figure 5-4: The company mission pages

In these pages, the disciplines of writing a compelling statement and some referenced examples are included to ensure the participants will get practical help if they are struggling with forming ideas during the design workshop.

Last but not least, I conclude the content of the brochure with some advice (Figure 5-5). After the participants reach the consensus on the company's objectives and write down the statement on the canvas, I suggest they start to convey the results to every employee in the company. In addition to the participants who have attended the workshop, all employees need to be aligned. At the end of the brochure, a reminder is noted. The mission and vision might be changed according to the internal and external environment. Therefore it's suggested to review and update the canvas regularly.

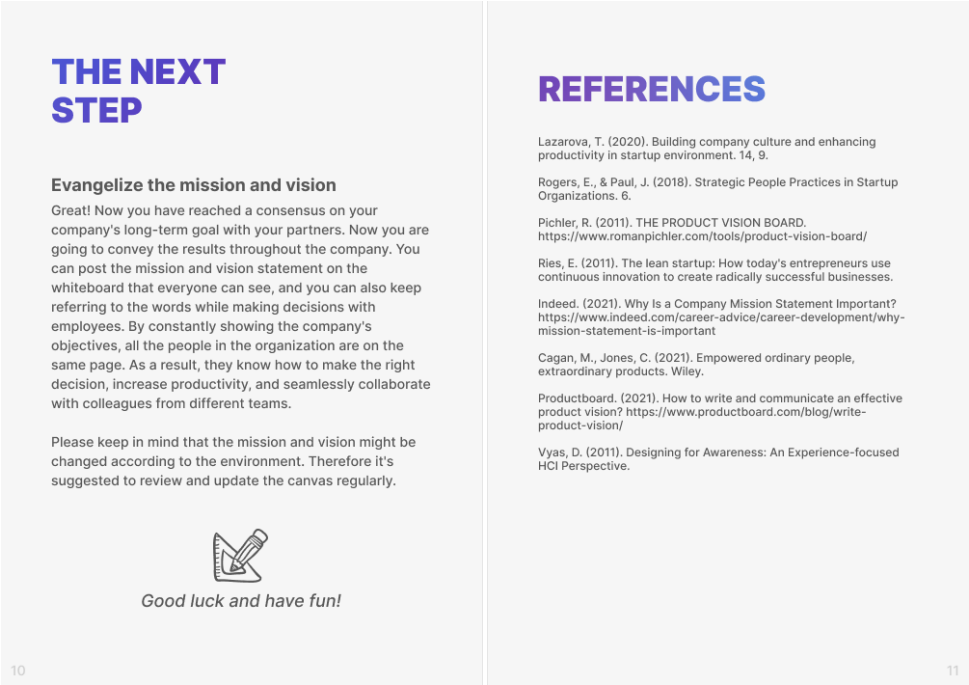


Figure 5-5: The final pages in the brochure

In the next chapter, I test the solution in a design workshop with three co-founders of Dakodata to develop the company mission and product vision. Finally, by having follow-up interviews to collect their feedback on the process and results, I discuss to what extent the primary problem of the thesis is solved and the space of the solution improvement.

06

Discussion

Chapter 6 | Discussion

In this chapter, I first describe the process of developing Dakodata's objectives with three co-founders and see how they react to the solution, then discuss the results to measure to what extent the defined problem is solved.

6.1 Design workshop

I facilitate the solution through a design workshop with Dakodata's co-founders to collaboratively work out the company mission and product vision. When I scheduled a meeting for the design workshop, they were interested in how it might help the company overcome the challenge. Three co-founders prepared the workshop by individually immersing themselves in thought, thinking about the core value of Dakodata and why they founded this venture. Due to the pandemic circumstance, the design workshop was held remotely via a digital meeting room. I acted as a facilitator to host the workshop and trigger the communication among three participants. (Figure 6-1)

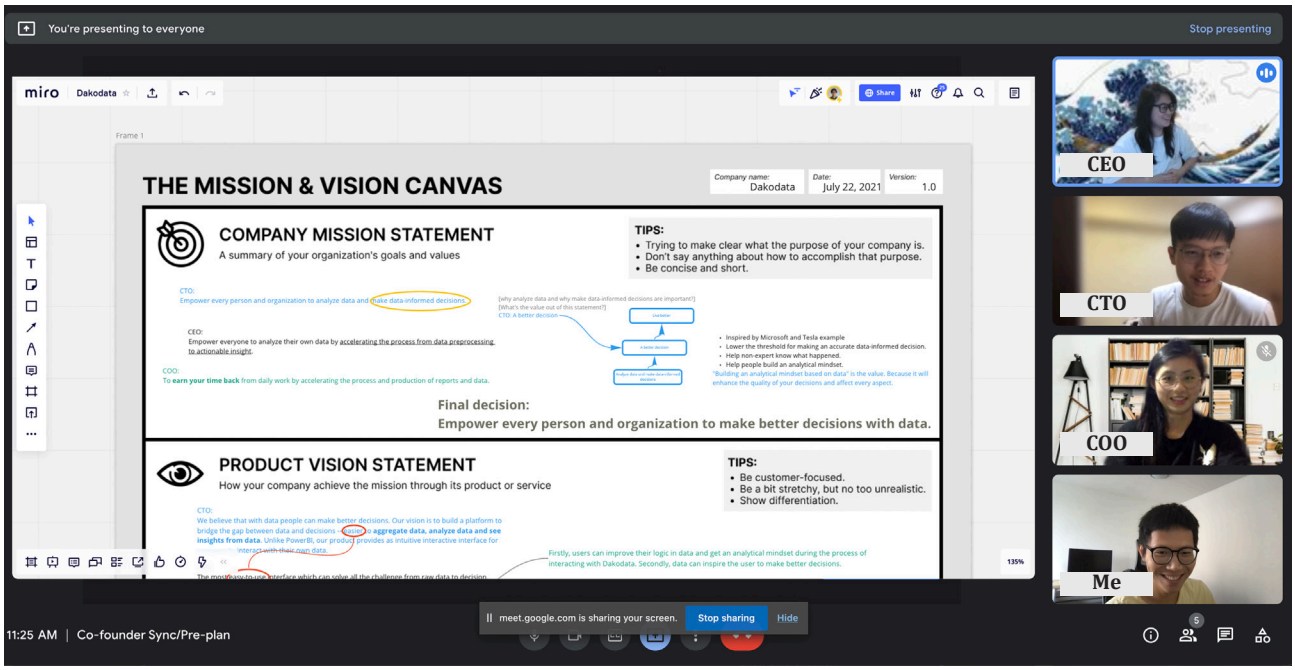


Figure 6-1: The design workshop with three co-founders of Dakodata

6.1.1 Outline the company mission

The first task is to figure out the company mission. The participants have ten minutes to write down the mission statement and leave it in the blank area on the canvas. When the time was up, each participant briefly explained their statement by terms to ensure precision. Table 6-1 shows three different ideas given by the CEO, COO, and CTO.

The CTO said the core value of this statement is making a better decision, and he believed that utilizing data in decision-making can enhance its quality. The CEO mainly agreed on the CTO's mission statement and had a similar idea. The difference is that the CEO's statement elaborated more on the process of data analysis. According to her work experience in previous years, She thought if the time spent preparing data for making decisions was dramatically decreased, she could save more time for other essential tasks. However, the COO's idea focused more on giving the audience a strong message that helps people earn their time back from work by getting rid of time-consuming jobs.

Participant	Ideas about the company mission
CTO	Empower every person and organization to analyze data and make data-informed decisions.
CEO	Empower everyone to analyze their data by accelerating the process from data preprocessing to actionable insight.
COO	To earn your time back from daily work by accelerating the process and production of reports and data.

Table 6-1: Three co-founders' ideas about the company mission

After exchanging the thoughts, three co-founders iterated the ideas by synthesizing the elements they liked in each statement. Figure 6-2 shows the visualized ideas put on the canvas, which triggered lots of in-depth discussions. For example, the CTO wanted to change "make data-informed decisions" to "make better decisions" because he thought "better" was more comprehensive and inspiring. The CEO reacted to the CTO's idea, saying that "pursuing an accurate decision" is ideal than "a better decision" because "better" is too subjective and ill-defined. The CTO argued that a better decision could benefit people from every aspect like being efficient, making more money, being successful, etc. The COO also liked "better" because she thought the audience should understand the statement more easily.

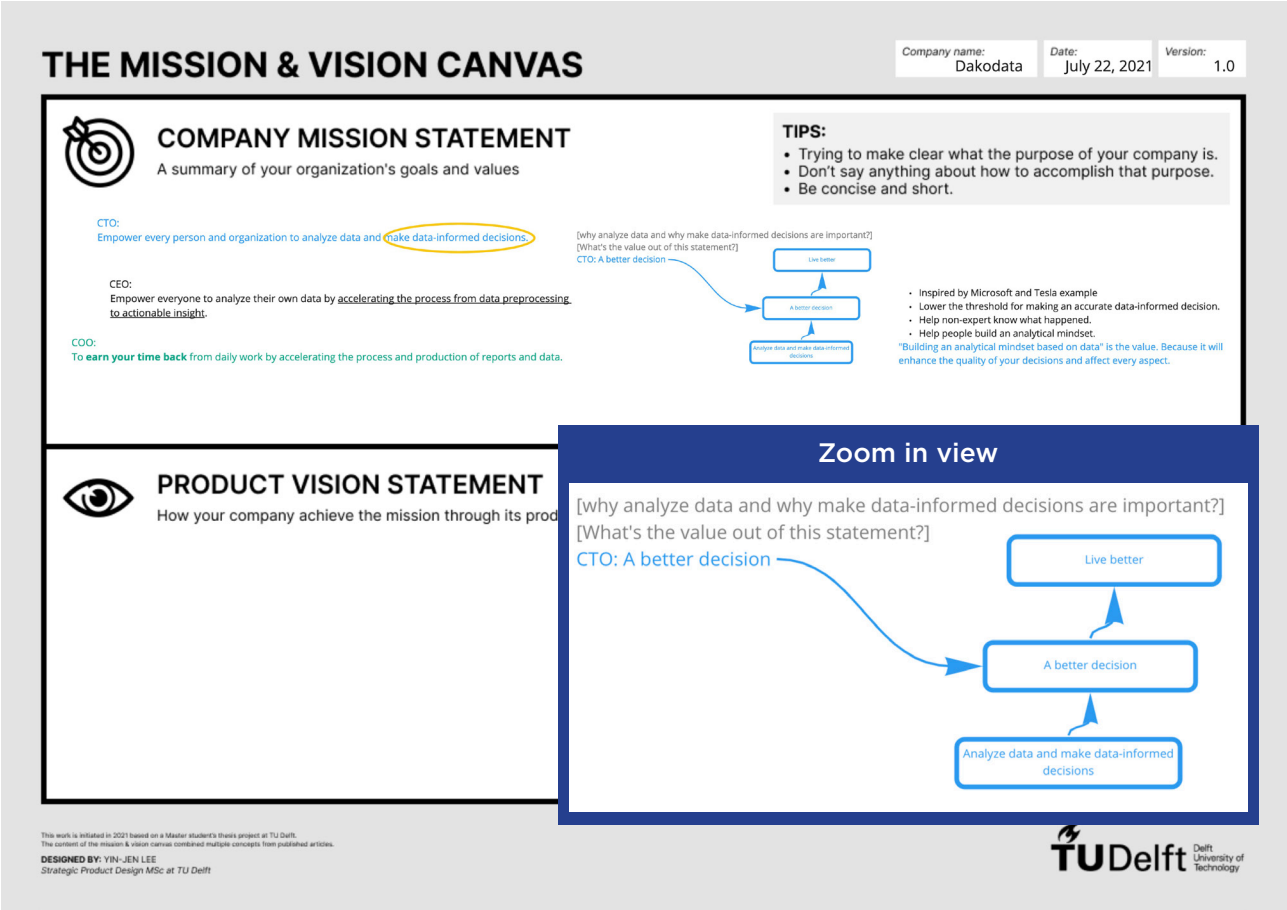


Figure 6-2: Iterating ideas through the mission and vision canvas

The discussion spent about an hour exchanging opinions and trying to polish the statement as much as possible. Three co-founders seldom had such a heated discussion to discover other stakeholders' profound minds. Finally, to conclude the session, they decided to choose the CTO's idea as the foundation and refined it as:

Dakodata's mission is to empower every person and organization to make better decisions with data.

6.1.2 Outline the product vision

When it came to the product vision, the participants moved their attention to the lower part of the canvas. As figuring out the company mission, they also spent ten minutes writing down their thoughts about Dakodata's product vision. Table 6-2 shows three different ideas given by the CEO, COO, and CTO.

Participant	Ideas about the product vision
CTO	We believe that with data, people can make better decisions. Our vision is to build a platform to bridge the gap between data and decisions -- easier to aggregate data, analyze data and see insights from data. Unlike PowerBI, our product provides an intuitive interactive interface for everyone to interact with their data.
CEO	The most easy-to-use interface which can solve all the challenges from raw data to decision.
COO	Be your own data analyst -- interact with, inspired by, and get actionable insights with Dakodata.

Table 6-2: Three co-founders' ideas about the company mission

The CEO and CTO all articulated the specificity of the ease-to-use function in Dakodata's product vision. They both thought that by synthesizing the team members' knowledge of user experience and technology, Dakodata could provide an outstanding user-friendly product to compete with other rivals in the market. Also, the CEO liked the CTO's idea because it showed a clear description of the data processing by breaking it down into three different steps: aggregating data, analyzing data, and seeing insights from data. The clarity of the product vision could help them focus on what they want to do and get rid of noises.

On the other hand, the COO had several years of experience working in public relation departments, so she wrote the product vision in a marketing-oriented voice. She emphasized that the customer can become a data analyst by using Dakodata's product. However, the CTO didn't like it because the COO's product vision seems more like a marketing slogan instead of a vision.

After three co-founders exchanging their opinions, they decided to use CTO's idea as the first version of Dakodata's product vision. During this workshop, they realized that they needed to conduct more research on market analysis to differentiate from other competitors. They left out the last sentence of the CTO's idea at the moment because they couldn't decide which is the direct competitor. To sum up, they determined Dakodata's product vision as:

Dakodata's product vision is to build a platform to bridge the gap between data and decisions -- easier to aggregate data, analyze data and see insights from data.

Finally, Figure 6-3 shows the results of the workshop. Three co-founders were exhausted but satisfied with this activity, which helped them collaboratively build the company's big picture and allowed them to have a deep discussion with each other. After the design workshop, I conducted a follow-up interview with the participants to ask about their their acting experience, further described in the next paragraph.

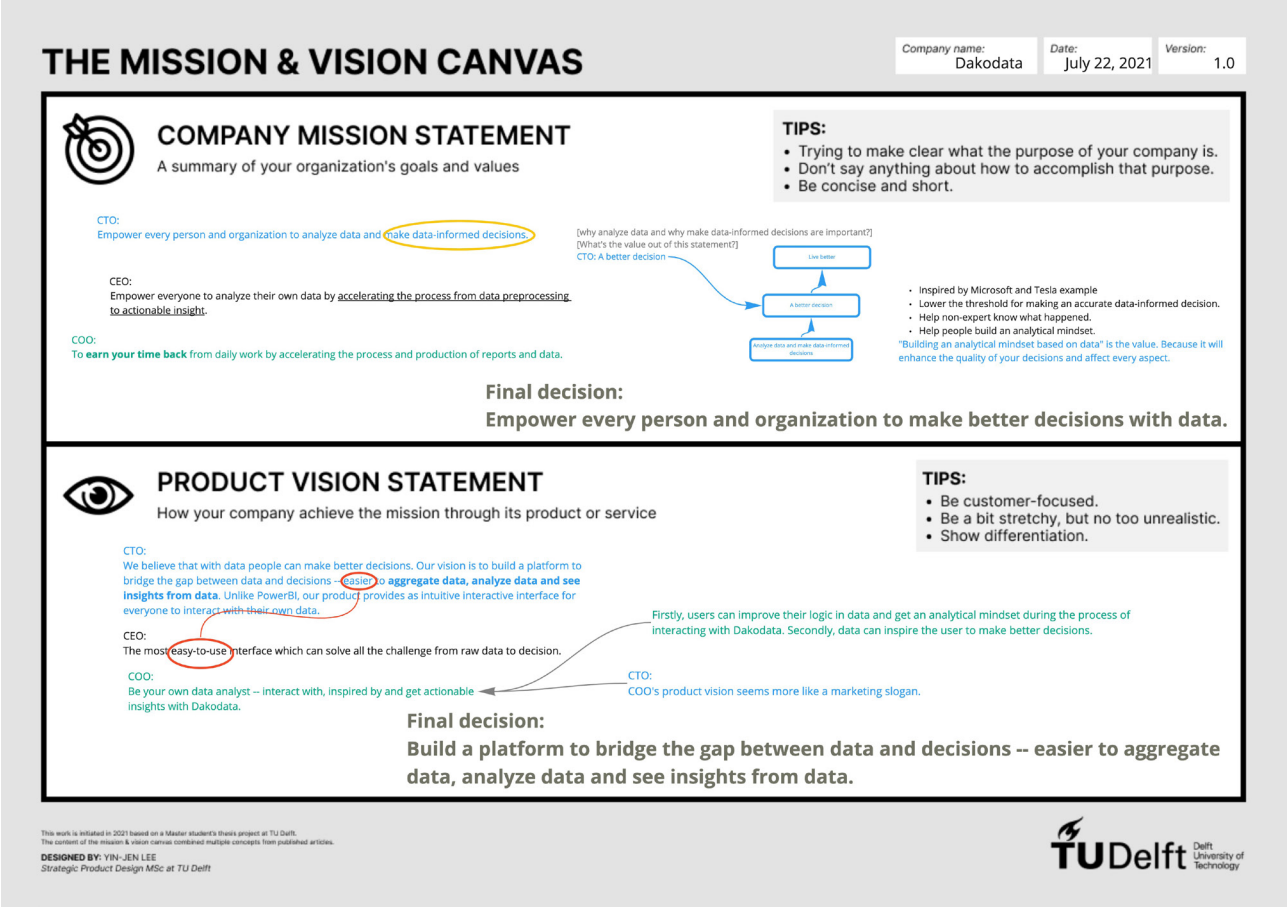


Figure 6-3: The results of the design workshop

6.2 Participants' feedback

To understand the effects of the canvas, I conducted follow-up interviews with three co-founders and asked them about their experience during the design workshop. Having feedback from the participants can help me iterate the design solution. I conclude their thoughts with a table and list out the requirements needed to be improved in the future version of the mission and vision canvas and the instruction brochure. (Table 6-3)

	CTO	CEO	COO
Gains	"Discussing the company's mission makes me excited. I feel that I'm a powerful and unique missionary."	"We make the company's mission statement concise. We also use it to clarify the company's positioning. I like it! "	"It's nice to have an opportunity to exchange our thoughts and make the company's long-term goal clear."
Pains	"I think we didn't do well in making the product vision. We don't know our competitors that much so I'm afraid our vision can't differentiate from others."	"Sometimes I don't know which word is better to use in the statement, especially when we need to choose between two similar terms."	"It's uncomfortable to make a trade-off while converging the ideas on the future direction of the company. Different stakeholders have their own opinions."
Opportunities	1. Remind the participants to conduct the competitor analysis as the preparation of the design workshop. 2. Provide some tips that help the participants determine the best term while shaping the statements.		

Table 6-3: Three co-founders' feedback on the design workshop

The CTO said he enjoyed discussing the company mission; it made him feel like an inspired missionary. The given examples also helped him because he seldom has a sense of how other companies claim their long-term goals. However, he felt that three co-founders didn't polish the product vision ideally yet during the workshop. In addition, he didn't conduct competitor analysis in advance to have a clear image of the target market. As a result, the design workshop made him realize that he must pay more attention to other competitors.

The CEO was satisfied with the design workshop results, which helped them make a concise mission statement. She found it interesting to have a deep understanding of other co-founders' thoughts by discussing the company's big pictures. But she also got some trouble when a word in her mission statement was similar to another co-founder's, and she has no idea which one is better. Additionally, she thinks three co-founders didn't fully complete the product vision in the workshop. She suggested that the results should be reviewed and updated regularly to ensure quality.

The COO said the canvas helped three co-founders a lot by enabling them to visually share their thoughts and reach a consensus on Dakodata's mission and vision. During the process, she felt uncomfortable making trade-offs when converging the company's future direction with other co-founders. She said that if the participants could elaborate the rationale behind every idea, they could determine the best alternative to continue. In this case, the canvas, therefore, effectively contributes to attempting negotiation by making communication transparent.

Overall, the biggest challenge that the participants encountered was to make the right decision while converging ideas. If the canvas or the instruction brochure can provide helpful criteria to help participants compare the alternatives, the participants will reach a consensus more efficiently. Another opportunity that the solution can improve is that the instruction brochure should remind participants to conduct competitor analysis. By understanding how other rivals position themselves, the participants could better develop a unique product vision that can stand out in the market.

In addition to knowing the space that the solution can improve, I also evaluate the outcome of having the company mission and product vision in Dakodata. In the next paragraph, I discuss the changes of employees affected by the solution and to what extent the primary problem has been solved.

6.3 Outcome evaluation

The primary problem in the problem space is defined as, "Dakodata doesn't have shared company objectives. This problem causes high uncertainties which leads to low productivity throughout the entire company." Three relevant issues of this problem have been discussed in Table 4-3. In this session, I first evaluate the outcome by observing if the solution solved three issues; then, I discuss the indirect problems that still exist and haven't been fixed yet.

6.3.1 The first issue - lacking a collective big picture

This issue was identified by the COO saying that the high-level direction of Dakodata was missing, and the employees hardly understood how their work contributed to the company. For example, the business developers regarded Dakodata as a data analytics tool. They tried to reach out to potential customers and promote the product based on this concept. Unfortunately, they bumped into big trouble because the data analytics market was too large, and they couldn't specify a particular area for Dakodata to enter. They spent lots of time contacting customers but got this kind of feedback, "Yes. We do need a tool to help us conduct data analytics, but the function provided by Dakodata isn't suitable for us." Without a precise positioning, business developers struggled with reaching the right customers; an enormous amount of time-wasting on contacting the wrong people also affects employee productivity.

After determining the company mission and product vision in the design workshop, the CEO hosted an all-hands meeting to show the Dakodata's big pictures. She used the mission and vision to explain the company's long-term goal and how Dakodata positioned itself. As a result, I observed a significant change in the business development team. With the clear company mission and product vision, the business developers knew who might be interested in Dakodata's product. They organized a sequence of criteria to categorize the potential customers to reduce the time spent contacting the wrong customers. Additionally, when business developers identified the new opportunities or emerging trends in the market, they quickly organized a meeting with the product team to discuss if the company mission and product vision were still competitive. If not, then the company should update the company's objectives to sustain its business.

6.3.2 The second issue - misalignment between teams

This issue was revealed from the team issue saying that employees were frustrated in misalignment between different teams. In Dakodata, the conflicts between the product team and the business development team were significant. The product team determined its value proposition based on the previous user interviews. The business developer found it couldn't attract potential customers, so the business development team had a different opinion on the product team's concept. Without the company-level goals, neither the product team nor the business development team can make the final decision. The chaos constantly caused misalignment between teams and had negative impacts on employee productivity.

After three co-founders reached the consensus on the company mission and product vision, the misalignment between the product team was eased because the employees could regard the company's objectives as the anchor to discuss and exchange their opinions. The designers in the product team could argue that the direction of the product development was aligned with the product vision. So if the business developers found new insights in the market analysis which might impact the positioning of the product, they could suggest that the product vision

needed to be modified. After the co-founders and key stakeholders adjusted the product vision, the product team also changed the product development direction. As a result, the misalignment between different teams vanished because the company's objectives played a vital role for team members to collaborate.

6.3.3 The third issue - making wrong trade-offs

The third issue was derived from the team issue indicating that employees were eager to make wise trade-offs to prevent unnecessary wastes. In Dakodata, the engineering team always got the feature requirement sent from the product team. However, sometimes the product team's decision changed rapidly due to the different users' feedback in interviews.

For instance, one user was saying that he wanted to have a data dashboard showing the overview. So the product team immediately told the engineers to build this feature. But when the next time Dakodata presented the data dashboard in front of another user, the user said an interactive analysis system was better than a dashboard because the dashboard wasn't flexible enough to drill down the data. As a result, the engineers found the quality of decisions worse, which led to many engineering wastes.

I found the quality of decision-making became well due to having company objectives. With a clear mission and vision, the engineers could also make trade-offs by measuring if the customer's feedback or the product development direction fit with the company's long-term goal. Even sometimes, the manager still changed the decision according to new finding insights; every employee still embraced the change because they had already discussed collaboratively and made the best trade-offs they thought at the moment. As a result, the unnecessary wastes decreased significantly.

6.3.4 Issues from other themes

In the problem space, I define theme 1, company objective, as the primary problem that derives three other themes: product development, product marketing, and human resource. Overall, the issues under theme 1 are mostly solved and improved. However, having the company mission and product vision couldn't address all the problems under other themes.

In theme 2, product development, designers in the product team said that the insights were not saturated enough to understand the users' needs. Without sufficient information, Dakodata hardly delivered the desired product to the market. Having company objectives somehow complemented the clarity of the definition of the ideal customer, but the company still couldn't have a deep understanding of the market needs. In addition to spending more time conducting interviews, the company could optimize the product development process to ensure desirability. Generally, merely figuring out the company mission and product vision couldn't address the issue.

In theme 3, product marketing, employees were struggling with early adopter identification. After three co-founders formed the company's objectives, business developers eased the problem by using the product vision as the criteria to filter out potential customers. Nevertheless, employees still needed more approaches to understanding the market better to sell Dakodata's product. The company mission and product vision provided a good start for the product marketing but didn't answer where the end was. The company hasn't reached product/market fit yet, and employees are still learning from the markets and customers, sometimes adjusting company objectives accordingly.

Theme 4 is about human resources issues, which consists of employee's insecurity due to uncertain environment, feeling ignored, and lacking salaries but merely stock. Those issues are very complicated which can't be solved with only one solution. For example, I observed that having company objectives could make employees feel more secure than before because the company mission and product vision contributed to clarity of what employees were working for. In terms of feeling ingored, this problem is more about the company's culture, which wasn't covered in the company mission and product vision. To address this issue, I suggest to conduct more in-depth interviews with employees to acknowledge the gaps between Dakodata's company culture and employees' expectation, which becomes a new area that can be explored.

6.4 Unexpected benefits

In the thesis, I aim to utilize design methodologies to identify the primary problem in employees' daily practice and generate the solution to solve it. Aside from observing how the internal issues are addressed, I also find that the solution provides unexpected benefits that externally contribute to the company's growth.

After figuring out the company mission and product, the CEO put them in the external presentation to pitch to investors while applying the startup accelerator. As a result, Dakodata successfully accessed the startup accelerator and got invited by three corporations to collaborate. The examiner said the mission of Dakodata clearly outlined the purpose of the company, and the product vision explained how Dakodata approached its purpose. The CEO of Dakodata indicated that using mission and vision in the presentation could make the story well-organized to attract investors.

On the other hand, due to the enhanced productivity and synchronized direction between three teams of Dakodata, the company got the first paid customer after developing MVP for eight months since the CEO found it. This milestone inspired the employees and made three co-founders more confident about this venture. Although many problems are still emerging every day, the collective company mission and product vision provide a foundation for navigating Dakodata to thrive on competition.

07

Conclusion

Chapter 7 | Conclusion

This thesis aims to identify the most significant problem in an early-stage startup and develop a solution to address it. Based on the research consisting of self-observations and qualitative interviews, it can be concluded that lacking the company objectives is the primary issue that negatively impacts employee productivity. Bringing the defined problem to the solution space, I designed the toolkit that included a canvas and an instruction brochure to help co-founders form the company mission and product vision. The results indicate that having the company's objectives can contribute to employee productivity in making wise trade-offs, cross-team alignment, and eliminating time spent on irrelevant tasks.

The thesis clearly illustrates how important the company's objectives are to improve working conditions in Dakodata, but it also raises the question of what the objectives actually are. In the solution space, I define the company mission and product vision as the core elements of the company's objectives. However, from a theoretical point of view, this definition lacks serious evidence complemented by academic literature but merely books and articles recently published in less than three years. Another limitation occurs in terms of the generalizability of the results. In this thesis, I identify and address the issues in Dakodata, a software startup based in Taiwan, which can only be one of the cases among many early-stage startups. Therefore, the outcome of the solution might vary from the different natures of other ventures.

Based on these conclusions, I recommend that further research consider the external factors that cause problems inside early-stage startups. Aggregating sufficient insights from different points of view could holistically lead to a better problem definition. In terms of discussing companys' objectives, except for early-stage startups, practitioners could consider the studies in other kinds of organizations to enrich the results.

The thesis's contribution, the designed canvas, and instruction brochure raise awareness of the company's objectives among crucial stakeholders in Dakodata and help them collaboratively work out the company mission and product vision, which effectively increases employee productivity in daily practice. Externally, Dakodata also leverages its compelling mission and vision to impress the investors and startup accelerators, creating more opportunities for Dakodata to accelerate its product development process. As a result, the early-stage startup's prospect of surviving in such a competitive and uncertain environment can be expected to improve.

08

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Chapter 8 | Reference

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09

Appendix

Chapter 9 | Appendix

A. Original Project Brief

DESIGN FOR our future

TU Delft

IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy". Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name	Lee 4853
initials	Y.J. given name Yin-Jen
student number	5031109
street & no.	
zipcode & city	
country	
phone	
email	

Your master programme (only select the options that apply to you):

IDE master(s): ( ) IPD ( ) DfI ( ) SPD

2nd non-IDE master:

individual programme: - - (give date of approval)

honours programme: ( ) Honours Programme Master

specialisation / annotation: ( ) Medisign ( ) Tech. in Sustainable Design ( ) Entrepeneurship

SUPERVISORY TEAM **

Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair	Senthil Chandrasegaran	dept. / section:	DOS
** mentor	Jeroen Coelen	dept. / section:	DOS
2nd mentor			
organisation:			
city:		country:	

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

Second mentor only applies in case the assignment is hosted by an external organisation.

comments (optional)

My thesis is an entrepreneurial project. Since the product of my company is a data visualization system and Senthil is an expert of it. Jeroen is full of knowledge to help an early startup use design to reach product/market fit.

Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

Procedural Checks - IDE Master Graduation

TU Delft

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair Senthil Chandrasegaran date 22 - 03 - 2021 signature

Digitally signed by Senthil Chandrasegaran
Date: 2021.03.22 10:32:31 +01'00'

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair.
The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: 18 EC

Of which, taking the conditional requirements into account, can be part of the exam programme 18 EC

List of electives obtained before the third semester without approval of the BoE

☐ YES all 1st year master courses passed

☐ NO missing 1st year master courses are:

name C. van der Bunt date 23 - 03 - 2021 signature

C. van der Bunt
Digitally signed by C. van der Bunt
Date: 2021.03.23 11:59:57 +01'00'

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **.
Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: ☐ APPROVED ○ NOT APPROVED

Procedure: ☐ APPROVED ○ NOT APPROVED

- also approved for Entrepreneurship, but the Board of Examiners advises to include the founder of the start-up as company mentor

comments

name Monique von Morgen date 29 - 03 - 2021 signature

Initials & Name Y.J. Lee 4853 Student number 5031109

Title of Project Design intervention in the new product development in an early startup

Personal Project Brief - IDE Master Graduation

TU Delft

Design intervention in the new product development in an early startup — project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 22 - 03 - 2021 — 16 - 08 - 2021 end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

In 2020 November, my friend, Ching, reached out to me, saying that she quit her job and ready for a new venture in her life. She wants to build a startup in Taiwan. Ching is a data scientist, having years of experience in data team being responsible for making data-informed decision. She found that dealing with data is quite a time-consuming and laborious task. Then the idea of building a new startup comes in, she wants to help people address and interpret data more easier. In one sentence, Dakodata (the name of her company) offers a digital platform for companies to aggregate data from multiple sources, visualize data in a comprehensive way and build a data-driven strategy based on the result.

In this early startup, many uncertainties appear everywhere. Who is the target customer? Do they feel the aha moment when using our product? How might this company position itself in the crowded market? What kind of business model is the best for the company? Lack of a clear step-by-step guideline in new product development is the biggest challenge. Team members feel insecure to keep progressing collaborating in uncertainty. However, from my point of view, it does have lots of opportunities to discover some new insights during the process. And that can become a valuable contribution complementing to existing knowledge used by massive startups all around the world.

After I joined Dakodata with some other partners, there are 7 persons in total: a data scientist (Ching), a business developer, a product manager (me), a product designer, and three engineers. Compared to other early startups, our group is balanced well by gathering multidisciplinary experts. I am responsible for conveying the voice from the end user and prioritizing the most valuable task according to user's need, limited engineering resources, and revenue expectation. In one sentence, I contribute my design skills to the new product development in order to fulfill desirability, feasibility and viability.

In a early startup, potential risks are carried out by limited resources like time and money, which increases the complexity of the uncertainty. The status quo of Dakodata is that we haven't reached product/market fit yet, meaning that although we have built the prototype and tested it with five interviewees who are our ideal target user, they feel no value of it. The prototype is a website that companies can upload their customer's data spread sheet (user ID, event time), and see the growth rate and retention rate as the current condition of their product. In addition, based on the variation of the growth rate and retention rate, Dakodata classifies the client's product into four different categories: Leaky Bucket (high growth rate & low retention rate), Death Spiral (low growth rate & low retention rate), Sustainable Product (high growth rate & high retention rate), and Mature product (Low growth rate & high retention rate). Dakodata provides a short description for each category with a 'call to action' button, attracting the user to reach out to us for a tailored strategy that can improve their product. By now, we are iterating on the prototype and looking for other potential users in different market to see if we are able to meet their needs. The journey of product discovery requires lots of design effort, and I am the key person to take this mission.

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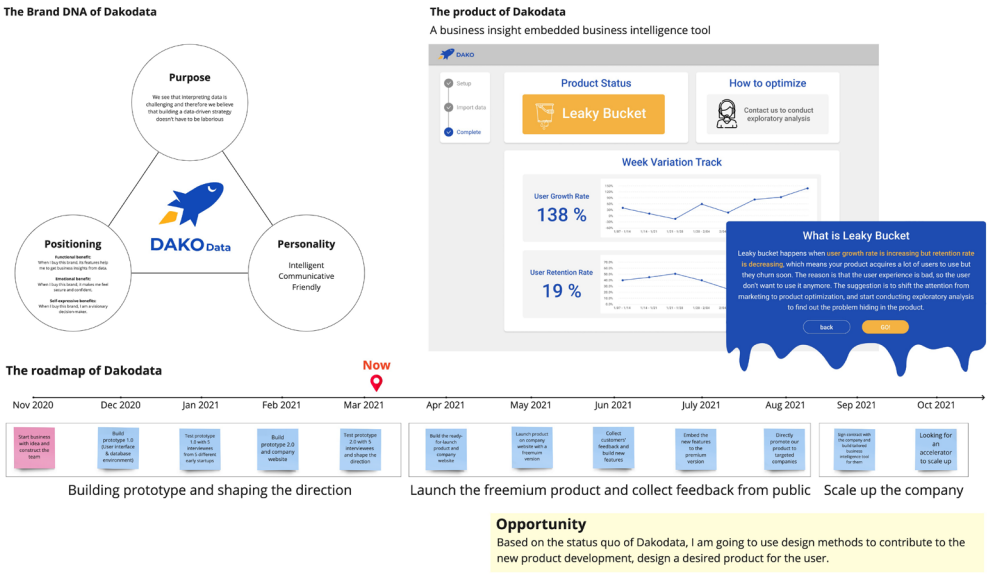


image / figure 1: The design opportunity in the new product development

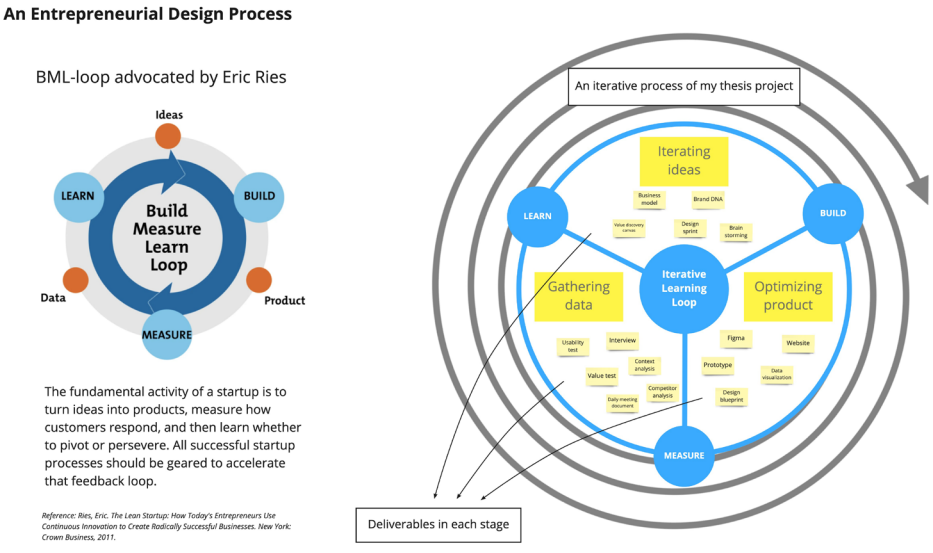


image / figure 2: The design process and deliverables

Initials & Name Y.J. Lee 4853 Student number 5031109

Title of Project Design intervention in the new product development in an early startup

Personal Project Brief - IDE Master Graduation

TU Delft

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

The biggest challenge that Dakodata are facing right now is extreme uncertainty of the market. The product idea is coming from CEO's past work experience instead of validation from the market. Therefore it's hard to clarify the core value and constantly polish the idea. This problem also confuses all the members in progress and to build the right product for the right user. Therefore, the scope of my thesis project is being an design practitioner to discover the insights from the potential user, bring them back to the company and observe the how can these insights have an impact on the journey of new product development in Dakodata.

According to the time constrains (20 full time weeks or 100 working days), I will mainly focus on the new product development, trying to use design to build a desirable, feasible, and viable product. The solution space of my project will be a generalized knowledge built from Dakodata, which also can help other early startups to efficiently shape their internal ideas toward external success in the market, also known as product/market fit.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

Deep dive into new product development as a product manager in Dakodata and use design to keep iterating the product based on the user interview. During the process, anything will be observed and analyzed to form the knowledge, which will be generalized to be applicable for other early startups.

To address the assignment firstly I will introduce the culture of listening to the real users into to company. So I will facilitate usability test and value test with five users when we build a prototype. The interview questions are designed to discover the user's role, challenges, problems to solve, jobs to be done, success metrics, etc. We also ask the user to say what's is the most valuable part they find in our prototype. The process and user's answer will be observed, documented and analyzed. These works will drive our prototype to the next iteration. Also, some struggles and challenges might happen. My team and I will use design methodologies to overcome the unintended obstacles. As a result, I will sum up all the learned experience and form a new generalized knowledge for early startups to build a successful product.

The outcomes of this thesis project:
1. The observed problems and obstacles occurring in new product development.
2. The generalized knowledge in new product development that can be used in other early startups.

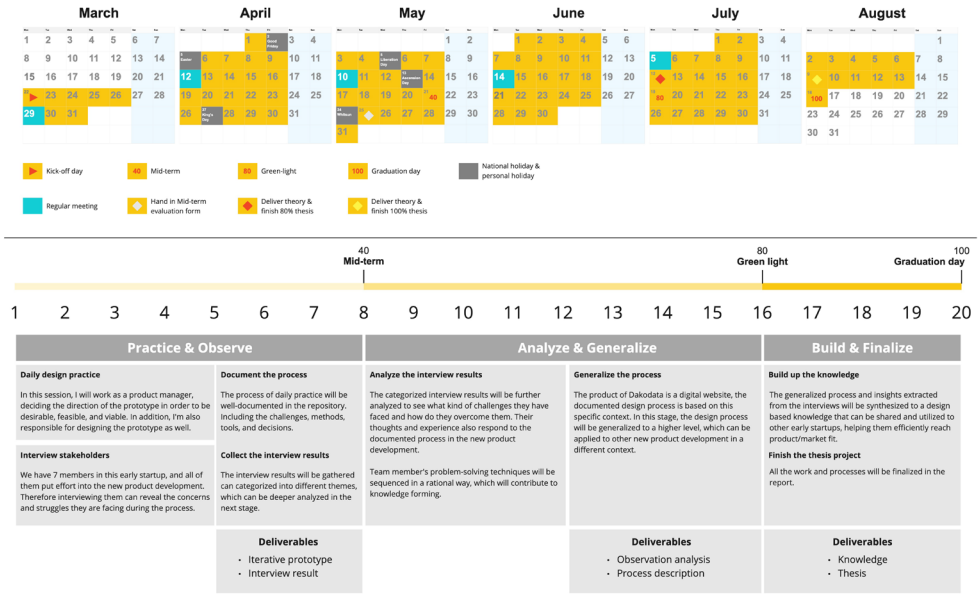
Initials & Name Y.J. Lee 4853 Student number 5031109

Title of Project Design intervention in the new product development in an early startup

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 22 - 3 - 2021 16 - 8 - 2021 end date



The upper part of the image is the100 working days planning. My thesis project will kick off on March 22nd. After 100 working days and a few holidays, the thesis will end on August 16th. The project calendar is planned according to the Graduation Manual deadlines, including regular meeting with supervisory team and expected deliverables needed to be uploaded.

The whole process can be broken down into three parts: Practice & Observe, Analyze & Generalize, and Build & Finalize. The first part consists of design process documenting and stakeholders interviewing. The data of daily practice and team members will be fully collected to prepare for the next stage - Analyze & Generalize. In the second part, I am going to find out what kind of challenges will appear during the process in the new product development and how do they overcome the obstacles. The extracted insights will gradually form a knowledge that can be generalized. In the last part, Build & Finalize, I will build up the knowledge based on the interview insights and techniques used in daily practice. As a result, all the learned experience will be summed up in the thesis and formed a new generalized knowledge for other early startups to build a successful product.

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... Stick to no more than five ambitions.

Using entrepreneurship as a topic of my thesis project is a bold decision. So much uncertainties are interweaving inside. As a SPD student, I have learned lots of skills and techniques that can solve wicked problems like building a whole new product and setting up a strategy to sustain the business based on it. But the core reason of triggering me to start my entrepreneurial journey is encouragement, which given by lecturers at TU Delft. Many professors leave one sentence in the last page of slides - 'Be Bold.' They told pupils to start the adventure without concerns for the failures. Everything can teach you and make you stronger and stronger. I was so motivated by the talk and getting ready to follow my excited spirit. I want to synthesize what I have learned with a design mindset and challenge this world with curiosity and practice. I embrace the unknown. I embrace an ideal future.

I have many expectations and learning ambitions I want to achieve in this project, the first one is the validation of design methodologies. I learn many practical methods like comtextmapping, roadmapping, grounded theory, etc. Then I am curious about if it can be perfectly applied to the real case even under constraints coming from everywhere. I will bring these methods to my daily practice in my thesis project and identify the difficulties of implementation. This ambition can help me polish my understanding of theories and complement my learned knowledge in an effective way. My second ambition is having experience in multidisciplinary collaboration. When studying at TU Delft, I usually collaborate with other design students, so I feel no gaps in communication especially we like to use lots of design jargons. I think it's time to step out of my comfort zone and try to deliver my design outcomes to a completely non-design team. I will learn how to speak comprehensively when explaining my design work and try to create a comfortable vibes for audiences to give their feedback. The third ambition of my thesis project is enhancing the importance of design in a tech company. Basically, my company is a tech based company building a data visualization tool for the users. So the developers, who are also my team members, like to compete the features against the competitors instead of being empathetic to take care of the end user's needs. In my thesis project, I will advocate the importance of design and apply it to the product development, decision making meeting, interviews, etc. To achieve this ambition, I will learn how to extract the most valuable outcome of design that can make it so compelling among the team members. By introducing a design culture, I believe it can be a new dynamic to transform a tech based company to a user-centric company.

When it comes to my fourth personal ambition, I want to achieve feasibility, desirability, and viability when building a product strategy. Normally in case of projects at TU Delft, my team mainly inclined to achieve desirability by using qualitative research methods and interviews to conduct value discovery. Therefore, because this thesis project is an entrepreneurial based topic, so I can really feel the importance of feasibility and viability when setting strategy and building product in an early startup. This ambition can let my strategy become more thorough, which leads to a higher degree of possibility to be adopted by stakeholders for the following implementation. For the fifth personal ambition, since it is my last project at TU Delft, I want to make a really impactful thing and generate the knowledge which can contribute to existing repository of IDE faculty. An entrepreneurial project is a good way for me to utilizing everything I learned from the lectures to build the product from 0 to 1. Identifying the right potential market, setting up the pricing strategy, and forming the brand DNA, so many tasks that I can invest my effort and evaluate the outcome. By getting through this journey, the experience will gradually become a sharable knowledge. And my ambition is to make this generalized knowledge well-documented in my report and save in TU Delft's repository. In the future, when other companies look up my project in order to get some inspiration, they will know how great TU Delft is.

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

B. Dakodata's customer persona

Amber

Account manager

Age	28
Gender	Female
Occupation	Account manager
Location	Taipei, Taiwan
Company	E-commerce clothing
Company size	100 - 500 employees
Team colleagues	6 person
Analytics tools	Google Analytics, Power BI

Amber's story

I'm working in an fashion and lifestyle clothing e-commerce company. My responsibility is digital marketing, planning the most effective investment on advertising. Additionally, I also do remarketing and look for collaboration with other brands or celebrities. Basically I use Google Analytics and Power BI for data analysis. But the information is too fragmental and spreaded among different channels, so I still manually aggregate them into Excel for a better comparison. I'm not good at data engineering. I don't know how to extract the data from company's data warehouse. I have to make a data-request ticket on project management tool and assign it to data team, waiting for their help then I can import the data to the business intelligence tools. My biggest challenge is reasoning. I have no idea how to find out the root problems when advertising results showing unintend bad performance. I can only guess the reason or just allocate the budget to other effective channels.

Managing advertising activities is the majority in Amber's daily tasks. She leverage data to track the effectiveness of ROAS(Return on Ad Spending).

Who influences Amber?

Support from other teams

ROAS (Return on AD Spending)

Insightful tools

Amber's situation

End Goal
- Make ROAS(Return on AD Spending) as high as possiable.
- When unintended issues happen, the root problems can be identified and solved.
- Different teams can collaborate seamlessly.

Experience Goal
- Feel that data-driven strategies are persuasive and reliable.
- Feel that it's efficient to conduct data analytics in an integrated platform.

Requirement
- Want to know why customers greatly churn before finish the purchasement.
- Want to know which advertising graphic design can attract the customers.

Obstacles Amber faces

- It's exhasting to keeping switching around so many different tools.
- It takes too much time on waiting for the wanted data sended by data team.。
- Lack objective evidence to convince designers change advertising graphics (Ex. button size, content style).

How will Amber use Dakodata?

Questions Amber will ask:
- How can I import data to the Dakodata?
- How to analyze the imported data?
- How can I share the results with my colleagues?
- How can I believe in Dakodata's data security?
- How can I use this tool to support my works?

Business decision-making

Experience-driven — Data-driven

Cross-team collaboration

Independent — Dependent

Analytics tools satisfaction

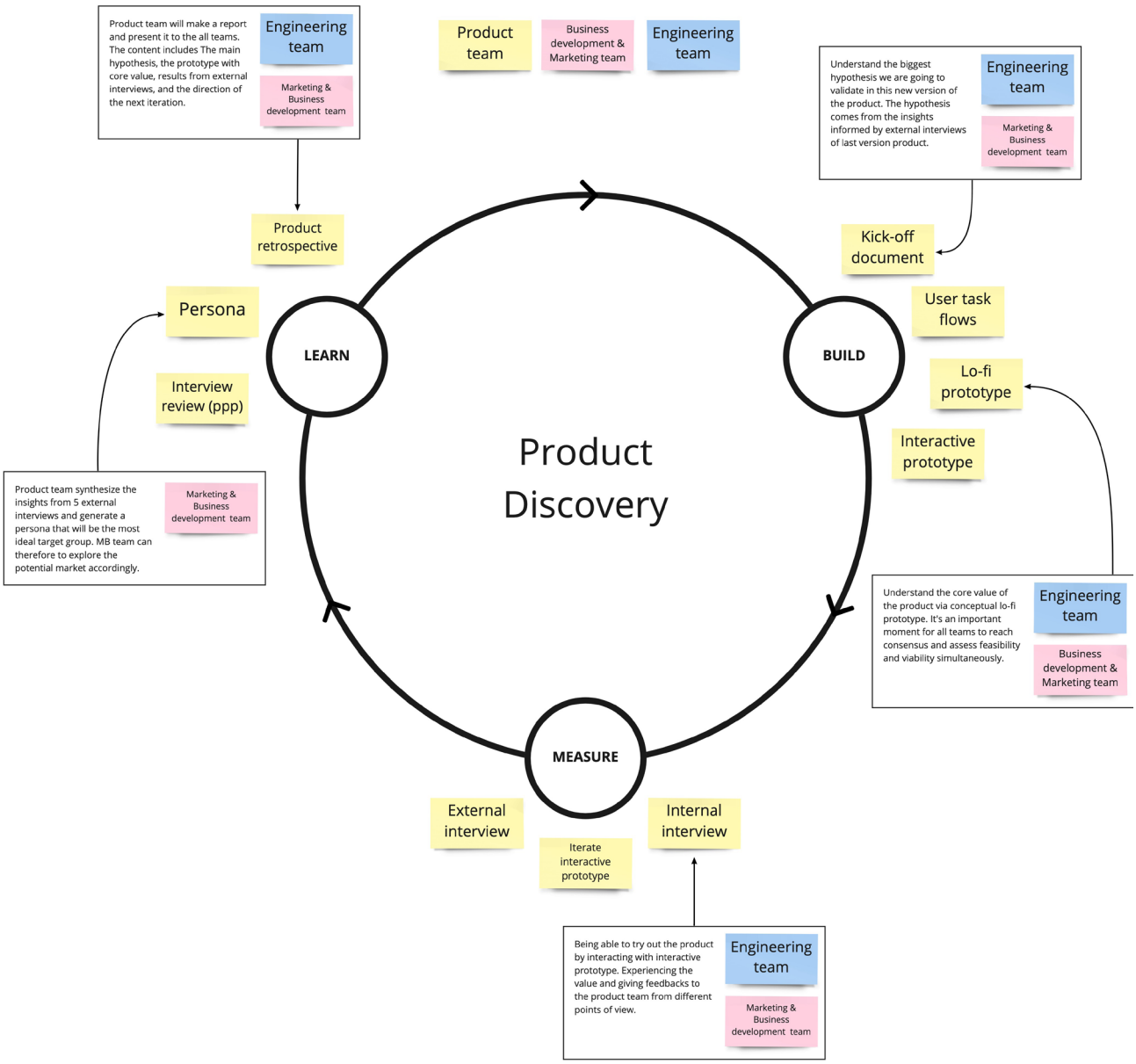
Disappointed — Satisfied

Key words

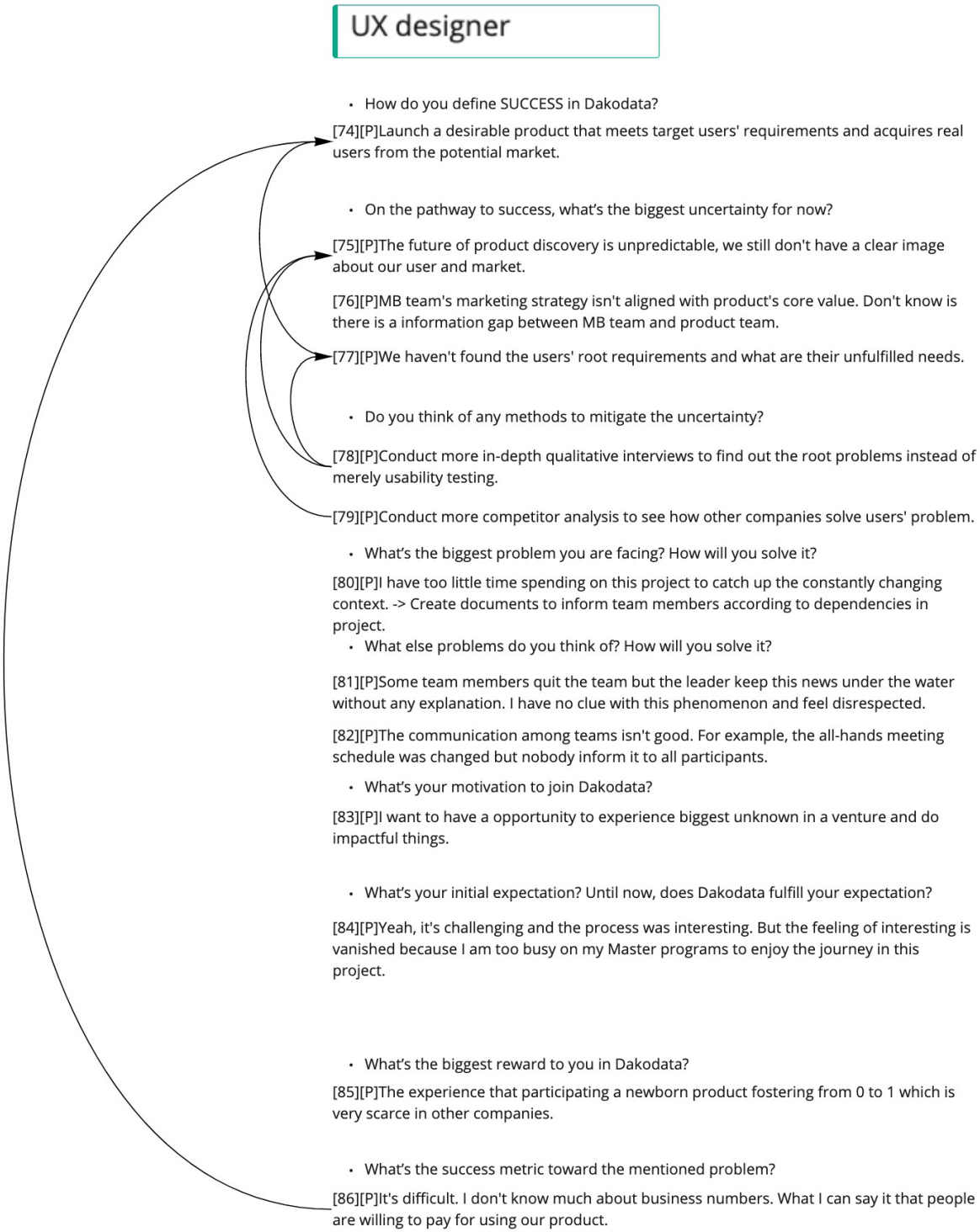
- Digital advertising
- CVR(conversion rate)
- Customer journey
- cross-team collaboration
- Returns & Refunds
- Integrated tool
- Persona

Phase of journey	9:00 - 9:30 Launch Advertisement	9:30 - 10:00 Advertising monitoring	10:00 - 12:00 Data import	12:00 - 13:00 Lunch break	13:00 - 16:00 Data import	16:00 - 18:00 Data import
Actions What does the customer do?	Check the success of advertising	Check if the traffics are boosted by advertising	Typing numbers on spreadsheet; Check every column has been filled out	Having lunch; Take a short break	Discuss with external partners	Optimize the advertising materials; Adjust the advertising budgets
Touchpoint What part of the service do they interact with?	Facebook Ad library; Google Analytics	Google Analytics; Online store website	Line / Webpush / EDM; Google Sheets; Power BI		Email; Google Meet	Facebook Ad library; Google Analytics
Customer Thought What is the customer thinking?	I want to check out the outliers and investigate the reasons	If the current visitors more than normal?	I should be careful not to type the wrong number on the sheet; It's not interesting. What a repeatable task!		Organizing a campaign is exciting!	
Story What is happened in details?	As an account manager in a clothing e-commerce corporation, managing the brand's marketing events and advertising performance are primary jobs. In the morning, the first thing is to check if the advertising materials launched successfully. On the digital advertising tools, several metrics will be check: ROAS (Return on AD Spending), CTR(Click-Through Rate), Impression, and CVR(Conversion Rate). The purpose is to make sure that the preplanned marketing setting has been activate and everything is on the right track.  Facebook Ad library	After launched the advertising events, the visitors' behaviors coming to the online store will be checked via Google Analytics. How many customers are visiting the website? How many customers purchase? Those questions can be answered by viewing the data dashboard. The traffic resource will be checked as well. Some of them are direct visitors representing natural traffic, some of them are attracted by advertising hyperlink. It needs to make sure that the advertising materials on Facebook and Google do attract new customers to the shopping website, which is one of the KPIs(Key Performance Indicators) of an account manager's job.  Google Analytics  Google Analytics	Filling out the spreadsheet on shared Google Sheets. The statistics will be automatically connected to Power BI, which offers the visualized dashboards synthesized all the fragmented data across channels. The connection will be updated three times a day, and one of it is at 12 o'clock. Therefore this laborious job has to be done before noon.  Google Sheets  Power BI  Power BI		In the afternoon, there are several tasks besides data analytics have to be done. The first thing is to prepare the EDM(Electronic Direct Mail) sending the next day. The advertising materials and graphics depend on design team's work, so the collaboration among different teams is required. Another task is planning marketing events with other companies. For example, a clothing brand can collaborate with a cosmetic company to sell a special product set. Because it's an external event, so the account manager has to spend lots of time on communication. At the end, a report should be made as well to evaluate the return on investment.  Advertising Materials	At the end of the day, all the advertising results need to be checked again. The difference between now and the morning is that the morning is about monitoring the advertising launch and letting them work; but in the afternoon is about evaluate the results, find out the worse channel with weak performance, and reallocate the budget to a more effective one. In one sentence, checking in the morning, and adjusting in the afternoon.  Facebook Ad library  Google Analytics
Customer Feeling What is the customer feeling?	🤓	🤔	🤯	🥳	🗣️	🧐
Pain points						

C. MVP development process



D. Interview results



UX designer

- How do you define SUCCESS in Dakodata?

[74][P]Launch a desirable product that meets target users' requirements and acquires real users from the potential market.

- On the pathway to success, what's the biggest uncertainty for now?

[75][P]The future of product discovery is unpredictable, we still don't have a clear image about our user and market.

[76][P]MB team's marketing strategy isn't aligned with product's core value. Don't know is there is a information gap between MB team and product team.

[77][P]We haven't found the users' root requirements and what are their unfulfilled needs.

- Do you think of any methods to mitigate the uncertainty?

[78][P]Conduct more in-depth qualitative interviews to find out the root problems instead of merely usability testing.

[79][P]Conduct more competitor analysis to see how other companies solve users' problem.

- What's the biggest problem you are facing? How will you solve it?

[80][P]I have too little time spending on this project to catch up the constantly changing context. -> Create documents to inform team members according to dependencies in project.

- What else problems do you think of? How will you solve it?

[81][P]Some team members quit the team but the leader keep this news under the water without any explanation. I have no clue with this phenomenon and feel disrespected.

[82][P]The communication among teams isn't good. For example, the all-hands meeting schedule was changed but nobody inform it to all participants.

- What's your motivation to join Dakodata?

[83][P]I want to have a opportunity to experience biggest unknown in a venture and do impactful things.

- What's your initial expectation? Until now, does Dakodata fulfill your expectation?

[84][P]Yeah, it's challenging and the process was interesting. But the feeling of interesting is vanished because I am too busy on my Master programs to enjoy the journey in this project.

- What's the biggest reward to you in Dakodata?

[85][P]The experience that participating a newborn product fostering from 0 to 1 which is very scarce in other companies.

- What's the success metric toward the mentioned problem?

[86][P]It's difficult. I don't know much about business numbers. What I can say it that people are willing to pay for using our product.

- If Dakodata can make a change to become more attractive to you, what will it be like?

[87][P]The onboarding process should be optimized. Let the new employees can have a clear guideline to gain knowledge about Dakodata's product. For example, data knowledge and key metrics used in Dakodata's product.

[88][P]Try to allocate more time on in-depth qualitative research and define the right problem before dive into solution space.

- What are your favorite parts in Dakodata that you want to keep?

[89][P]The company always listen to everyone's opinions. That's good!

Front-end engineer

- How do you define SUCCESS in Dakodata

[39][E]In terms of a business-to-business context, when most data-driven companies think of Dakodata when conduct data analysis, then I will tell it's success. Like thinking of Google while doing research.

- On the pathway to success, what's the biggest uncertainty for now?

[40][E]Cause we are still at the very early stage that just have contacted little potential clients, the needs of them aren't clear yet. -> The risk of it is keeping changing different direction in order to fulfil contacting clients. Those changing decisions cost engineering wastes.

- Do you think of any methods to mitigate the uncertainty?

[41][E]The uncertainty is so high. I have no idea yet. It's might just the nature of early startups.

- What's the biggest problem you are facing? How will you solve it?

[42][E]Continuously developing new features that require particular engineering techniques I don't have. -> Looking up how other companies solve the problem on website.

- What else problems do you think of? How will you solve it?

[43][E]Can't collaborate seamlessly due to the varied work time of team members, especially while dealing with high dependency tasks. -> Pick up the tasks that can be addressed independently while other members aren't there to help.

- What's your motivation to join Dakodata?

[44][E]I'm still a student so I intend to gaining working experience that can help me become a competitive candidate to find a new job.

- What's your initial expectation? Until now, does Dakodata fulfill your expectation?

[45][E]Expect to having a experienced mentor to guide me through an organized process and help me develop better coding skills.

- Until now, does Dakodata fulfill your expectation?

[46][E]My expectation isn't fulfilled because I'm the only front-end engineer in Dakodata. I don't know if my codes are in good quality or not. I hardly improve myself.

- What's the biggest reward to you in Dakodata?

[47][E]A fresh point of view arising from such an early startup. So many things are needed to be considered while developing a whole new product. These experiences are very fresh to me.
[48][E]Gaining new knowledge in engineering expertise while addressing product requirement that never seen before.

- What's the success metric toward the mentioned problem?

[49][E]Having revenues from numerous clients that can reach break-even point.
[50][E]Focus on maintaining the product availability more than building new features.

- If Dakodata can make a change to become more attractive to you, what will it be like?

[51][E]Having salaries that can support my living expense.

[52][E]Having a senior who is experienced in front-end engineering that can share coding knowledge with me. Then I can polish my working skills efficiently and effectively.

[53][E]Having a physical office that people can work together.

Business developer

- How do you define SUCCESS in Dakodata?

[54][MB]Continuously build the desired products embraced by the market.

- On the pathway to success, what's the biggest uncertainty for now?

[55][MB]Lack a deep understanding of the market and clients, which leads to be inefficient in developing product and exploring potential clients.

[56][MB]Biggest challenge comes from the collaboration between team members. They might not achieve their commitment in a timely fashion.

[57][MB]Wasting lots of time on contacting unknown clients that aren't able to adopt our product. For example, until spending time on communication and then find that they don't have data to leverage by using our product.

- Do you think of any methods to mitigate the uncertainty?

[58][MB]Gradually to build a criteria that can identify if the potential clients are qualified to become our real clients.

[59][MB]Hire more employees or external partner to accelerate the process exploring market.

[60][MB]Inviting potential customers gained by MB team's activities to Dakodata's prototype test.

- What's the biggest problem you are facing? How will you solve it?

[61][MB]Need to have a clearly defined positioning statement of the product that can used in go-to-market strategy, because we were missing in clarifying our unique selling point when promoting Dakodata. -> This positioning statement should come from MB team instead of merely from product team.

- What else problems do you think of? How will you solve it?

- What's your motivation to join Dakodata?

[62][MB]Use a C-level occupation to form a personal brand.

[63][MB]Have a new stimulation to work in a fresh environment after getting tired in 10+ years work experience in conventional company.

- What's your initial expectation? Until now, does Dakodata fulfill your expectation?

[64][MB]Yeah, my personal branding becomes more impressive.

[65][MB]Have a wide range of knowledge in fostering a whole new business from 0 to 1.

- What's the biggest reward to you in Dakodata?

[66][MB]It's fun to collaborate with empowered teammates. Learn lots of things that never experienced before.

- What's the success metric toward the mentioned problem?

[67][MB]How fast can dakodata to develop and launch a new product.

[68][MB]Every product is profitable that can boost the new product development.

[69][MB]Reach break-even point at the end of 2021.

[70][MB]Find out a pattern that can help us increase the customer acquiring rate up to 80%.

- If Dakodata can make a change to become more attractive to you, what will it be like?

[71][MB]Dakodata becomes profitable that can have a good return to the employees.

[72][MB]Have an international marketing ambition and hire people worldwidely.

Chief operating officer

[31] "When you are acting as a team leader, please remind yourself that you are also a company owner."

- How do you define SUCCESS in Dakodata?

[32] Enhance efficiency of people's daily work through Dakodata's service. 30% of companies in the world have used or heard of Dakodata.

- On the pathway to success, what's the biggest uncertainty for now?

[33] Money. Don't know if Dakodata can insist until making income.

- Do you think of any methods to mitigate the uncertainty?

[34] Making short-term income. For example, some clients are particularly interested in dashboard customization, so we can build it for them to earn money.

[35] Trying to be a evangelist in the company. Let employees make personal achievement according to their effort. Prefer not to hire new people to replace instead.

[36] Organize an 1-on-1 meeting to ensure that if the employee's expectation is still on the same track with the company. Hopely can see the significant improvement in two sprints. (Measured by other co-founders)

- What's the biggest problem in Dakodata? How will you solve it?

[37] Human resources. Don't know if team members can afford the extreme uncertainty and if they are spreading fearness and insecure feeling in the company.

[38] When in co-founder meeting, the direction and management of the company should be discussed in a higher level instead of only focusing on showing each team's output in low level.

- What else problems do you think of?

[39] Can't get a clear and shared vision of the company in the all-hands meeting. Only talking about each team's separated outcome make people feel no connection between different teams. Employees are not clear about the north start of the company and where are we right now. This phenomenon might cause misaligned collaboration in the future.

- In what priority would you like to solve these problems?
- What's the success metric toward the mentioned problem?

[40] Passive goal: In 2021 yearly review, the income of Dakodata can meet the cost but employees still don't have salaries yet.

[41] Proactive goal: All employees can get satisfying salaries in two years and the company is still profitable.

[42] Every employee can clearly elaborate the shared vision and DNA of Dakadata, not merely talk about what they have done in their team.

Marketing & Business development lead

- How do you define SUCCESS in MB team?

[1][MB]Everyone can finish their job in a timely fashion.

[2][MB]Marketing: Team members are familiar with marketing techniques and able to collaborate seamlessly.

[3][MB]Business Development: Fully achieve their potential while reaching clients independently.

[4][MB]Successfully deliver the product team and engineering team's outcome to the market and make it popular.

- On the pathway to success, what's the biggest uncertainty for now?

[5][MB]It's people. Team member's techniques in branding vary a lot from their past experience. It might cause misalignment when delivering brand images to the market.

[6][MB]Business developer's momentum uncertainty. Most members' goal is to earn the money instead of skills or knowledges. So if the product can't be competitive enough to sell, business developers might lack motivation to continue.

- Do you think of any methods to mitigate the uncertainty?

[7][MB]Use A/B testing to try out different brand images and see how market respond to them.

[8][MB]Create more values beyond money to retain business developers' interests. For example, a prestigious occupation in C-level.

[9][MB]Allocate the company's budgets to reward business developers when they sign big contract with the clients.

- What's the biggest problem in MB team? How will you solve it?

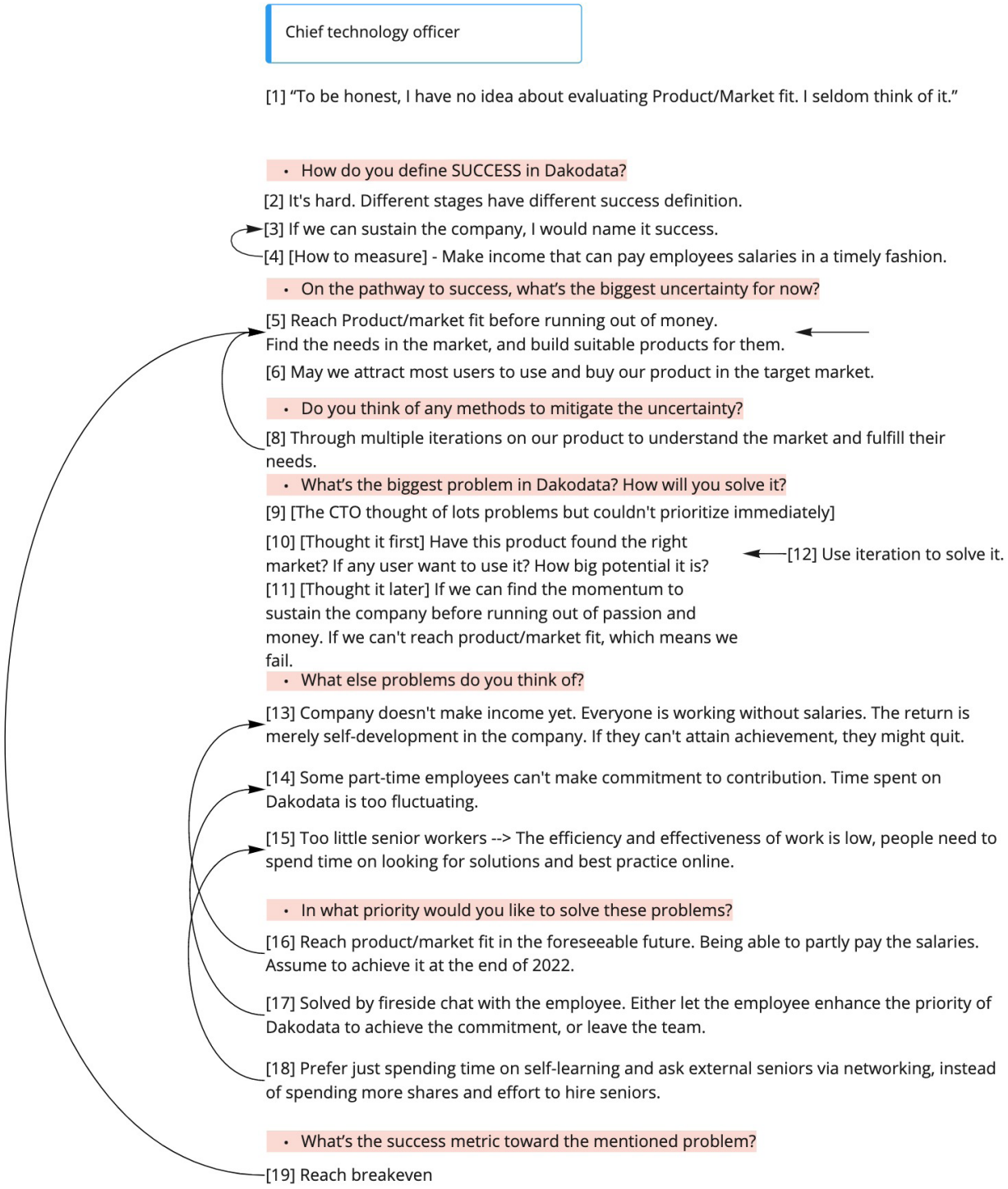
[10][MB]According to the product maturity, marketing activities need more efforts to reach clients. But the constraints in human resource and finance are significant.

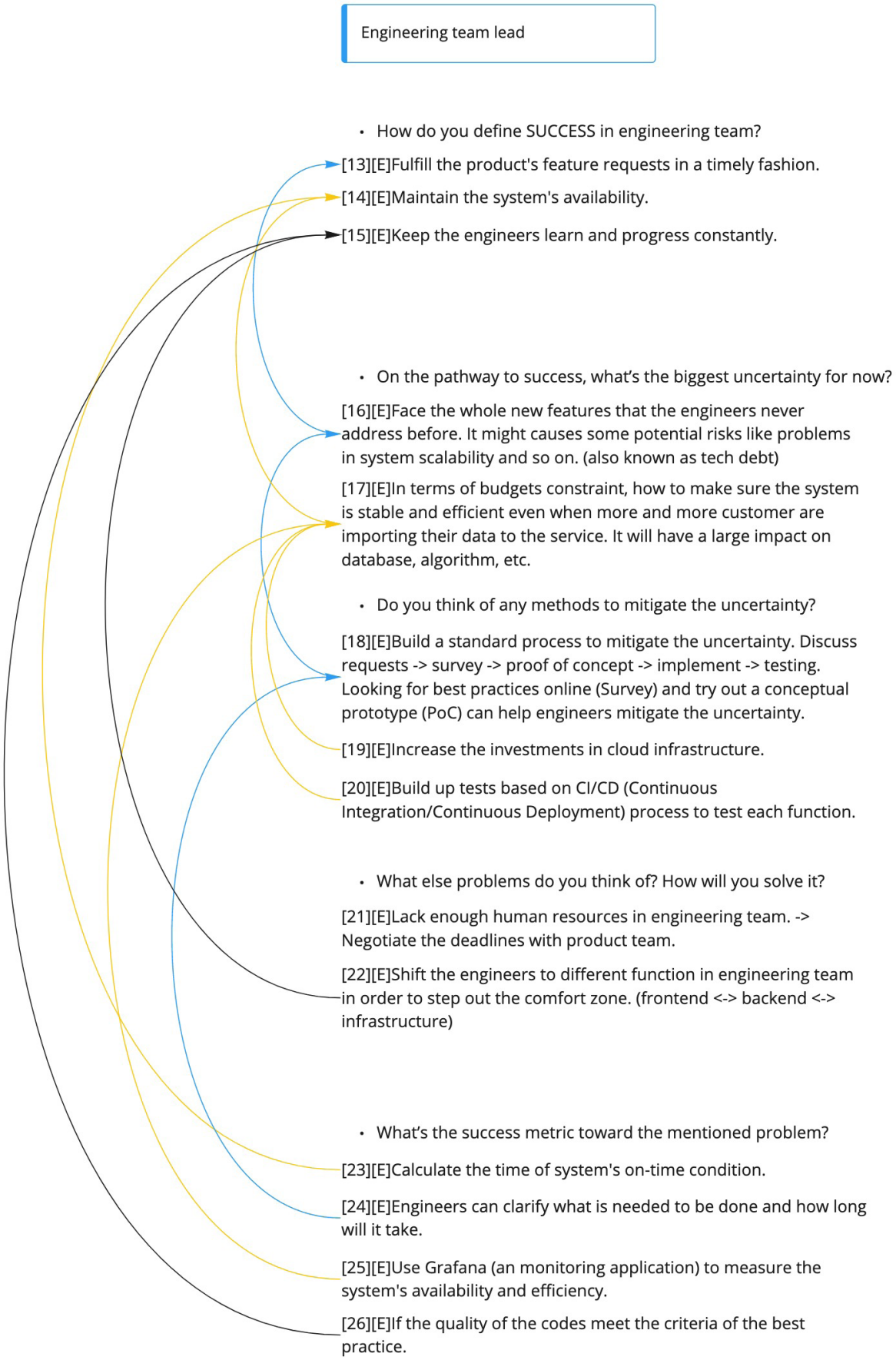
- What else problems do you think of? How will you solve it?

[11][MB]Most members in MB team are seniors so they are good at strategic works rather than hands-on execution. --> Hire trainees to conduct the detailed works.

- What's the success metric toward the mentioned problem?

[12][MB]Will be measured by the amount of clients signing contract by the business developers. It's should meet the MB team's goal.


Chief technology officer
[1] “To be honest, I have no idea about evaluating Product/Market fit. I seldom think of it.”
• How do you define SUCCESS in Dakodata?
[2] It's hard. Different stages have different success definition.
[3] If we can sustain the company, I would name it success.
[4] [How to measure] - Make income that can pay employees salaries in a timely fashion.
• On the pathway to success, what’s the biggest uncertainty for now?
[5] Reach Product/market fit before running out of money.
Find the needs in the market, and build suitable products for them.
[6] May we attract most users to use and buy our product in the target market.
• Do you think of any methods to mitigate the uncertainty?
[8] Through multiple iterations on our product to understand the market and fulfill their needs.
• What’s the biggest problem in Dakodata? How will you solve it?
[9] [The CTO thought of lots problems but couldn't prioritize immediately]
[10] [Thought it first] Have this product found the right market? If any user want to use it? How big potential it is?
[11] [Thought it later] If we can find the momentum to sustain the company before running out of passion and money. If we can't reach product/market fit, which means we fail.
[12] Use iteration to solve it.
• What else problems do you think of?
[13] Company doesn't make income yet. Everyone is working without salaries. The return is merely self-development in the company. If they can't attain achievement, they might quit.
[14] Some part-time employees can't make commitment to contribution. Time spent on Dakodata is too fluctuating.
[15] Too little senior workers --> The efficiency and effectiveness of work is low, people need to spend time on looking for solutions and best practice online.
• In what priority would you like to solve these problems?
[16] Reach product/market fit in the foreseeable future. Being able to partly pay the salaries. Assume to achieve it at the end of 2022.
[17] Solved by fireside chat with the employee. Either let the employee enhance the priority of Dakodata to achieve the commitment, or leave the team.
[18] Prefer just spending time on self-learning and ask external seniors via networking, instead of spending more shares and effort to hire seniors.
• What’s the success metric toward the mentioned problem?
[19] Reach breakeven


Engineering team lead
• How do you define SUCCESS in engineering team?
[13][E]Fulfill the product's feature requests in a timely fashion.
[14][E]Maintain the system's availability.
[15][E]Keep the engineers learn and progress constantly.
• On the pathway to success, what's the biggest uncertainty for now?
[16][E]Face the whole new features that the engineers never address before. It might causes some potential risks like problems in system scalability and so on. (also known as tech debt)
[17][E]In terms of budgets constraint, how to make sure the system is stable and efficient even when more and more customer are importing their data to the service. It will have a large impact on database, algorithm, etc.
• Do you think of any methods to mitigate the uncertainty?
[18][E]Build a standard process to mitigate the uncertainty. Discuss requests -> survey -> proof of concept -> implement -> testing. Looking for best practices online (Survey) and try out a conceptual prototype (PoC) can help engineers mitigate the uncertainty.
[19][E]Increase the investments in cloud infrastructure.
[20][E]Build up tests based on CI/CD (Continuous Integration/Continuous Deployment) process to test each function.
• What else problems do you think of? How will you solve it?
[21][E]Lack enough human resources in engineering team. -> Negotiate the deadlines with product team.
[22][E]Shift the engineers to different function in engineering team in order to step out the comfort zone. (frontend <-> backend <-> infrastructure)
• What's the success metric toward the mentioned problem?
[23][E]Calculate the time of system's on-time condition.
[24][E]Engineers can clarify what is needed to be done and how long will it take.
[25][E]Use Grafana (an monitoring application) to measure the system's availability and efficiency.
[26][E]If the quality of the codes meet the criteria of the best practice.


Product team lead
• How do you define SUCCESS in product team?
[27][P]In long term, the product team becomes competitive with a nice culture. Everyone feels honored to be part of this product team.
[28][P]In short term, let people feel comfortable with a sequence of frustration in new product development. -> right people, right process, right culture.
• On the pathway to success, what's the biggest uncertainty for now?
[29][P]The biggest uncertainty is if the product vision can meet the world's need. If the product itself can't either solve the painful problems or create a great demand, then the product team can't be competitive, leading to product fail and company fail.
[30][P]If there are right people to work in a right process and build a right culture.
• Do you think of any methods to mitigate the uncertainty?
[31][P]For the right people, keep open minded to talk with candidates. But for now, it still lack a systematic process to identify the right person who are suitable for product team. This hiring process also represents the culture as well.
[32][P]For the right culture, search some well known business cultures in other companies and transform the ideal parts of them into product team.
[33][P]For the right process, search some successful frameworks and methodologies in other companies and transform the ideal parts of them into product team.
• What else problems do you think of? How will you solve it?
[34][P]People is always the problem. The product person might be suitable at the beginning. But he/she will change as time goes by.
• What's the success metric toward the mentioned problem?
[35][P]If there is a person enthusiastic about frameworks and keep iterate on forming a better process in the team.
[36][P]Have lots of references gained from many well known companies' cultures, then synthesize them into an ideal one specific for the product team.
[37][P]People's problem is never solved until retirement.
[38][P]Everyone can clearly speak out the value of the product. And users will find their problems are solved by using it.

Chief executive officer

[20] "Co-founder is irreversible, I couldn't change co-founder. I should think how to let her become better, preventing from messing up the whole company."

- How do you define SUCCESS in Dakodata?

[21] Let employees happy to work in this company with satisfying salaries.

- On the pathway to success, what's the biggest uncertainty for now?

[22] Can't make sure that when will our product become popular in the market.

[23] Don't know how confident employees have in Dakodata to be willing to insist.

- Do you think of any methods to mitigate the uncertainty?

[24] Strive to make sure that the direction of product development is right (via guts feeling and customer interview feedback). When it comes to reducing development time, I don't have a good idea for now.

[25] We will have a 1-on-1 meeting with the employee have confidence problems. If he can't get used to work under high uncertainty, we will ask him to leave. Otherwise he will spread the panic vibe among the team, which is harmful.

- What's the biggest problem in Dakodata? How will you solve it?

[26] Don't know how to hire the right person. Since they will work remotely without salaries, how can we use vision to drive them to persevere and feel at ease.

- What else problems do you think of?

[27] Three co-founders have different maturity in capability. Basically, co-founders manage each own team and believe in other co-founders. But one of the co-founders isn't capable for leading a team. She can't develop chemistry in her team, even she isn't self-disciplined and often being late in co-founder meeting.

- In what priority would you like to solve these problems?

[28] [How to solve it] Organize a regular meeting specifically for three co-founders. Utilize more frequent communication to track each co-founder's contribution. If one can't deliver expected outcome, other co-founders will take over then.

- What's the success metric toward the mentioned problem?

[29] Don't need to worry about the employee's contribution, attitude toward the company, and interaction with colleagues.

[30] When the co-founder can contribute beyond the expectation, the credibility can therefore be built among three co-founders.

Company objectives

Uncertainty in the engineering team
Lack strategic context to work more efficiently and effectively.

3. Collaborate with colleagues	"The business development team's marketing strategy isn't aligned with the product's core value. Don't know if there is an information gap between the business development team and product team."	"Need to have a clearly defined positioning statement of the product that can be used in go-to-market strategy, because we were missing in clarifying our unique selling point when promoting Dakodata."	"Can't collaborate seamlessly due to the varied work time of team members, especially while dealing with high dependency tasks."
5. Lack a big picture	"Never deeply discuss the mission of the company with other co-founders. Don't know what they think of it."	"Can't get a clear and shared vision of the company in the all-hands meeting."	"It's hard to articulate the success of the company. Different stages have different success definitions."
4. Make the right decisions	"Try to allocate more time on in-depth qualitative research and define the right problem before diving into solution space."	"Wasting lots of time on contacting unknown clients that aren't able to adopt our product. For example, until spending time on communication and then find that they don't have data to leverage by using our product."	"While keeping changing in different directions in order to fulfil contacting clients, those changing decisions cost engineering wastes."

Product development

Uncertainty in the product team
Couldn't know how to build the desirable prototypes that met the customer's needs.

2. Build the right product	"Strive to make sure that the direction of the product is right via customer interview feedback and guts feeling."	(None).	"If any user wants to use it? How big of a potential is it?"
2. Utilize domain knowledge	"We have to conduct more competitor analysis to see how other companies solve users' problems. Those insights are helpful."	"Lack a deep understanding of the market and clients, which leads to being inefficient in developing products and exploring potential clients."	"Challenges appear when facing the whole new features that engineers have never addressed before. It might cause some potential risks in system scalability."

Product marketing

Uncertainty in the MB team
Could't identify who is the potential customer and who is not.

3. Sell to the market	"Can't make sure when our product will become popular in the market."	"If 30% of companies in the world have used or heard of Dakodat, then I will claim that we are successful."	"May we attract most users to use and buy our product in the target market?"
1. Listen to the market	"We haven't found the users' root requirements and what their unfulfilled needs are."	"We have to continuously build the desired products embraced by the market."	"Because we are still at the very early stage that just have contacted little potential clients, the needs of them aren't clear yet."

Human resources

1. Encourage employees	"If the employee can't get used to working under high uncertainty, we will ask him to leave."	"Don't know if team members can afford the extreme uncertainty and if they are spreading fearness and insecure feelings in the company."	"The return is merely self-development in the company. If they can't attain achievement, they might quit."
5. Motivate employees	"Some team members quit the team but the leader kept this news under the water without any explanation. I have no clue about this news and feel insecure."	"Most member's goal is to earn money instead of skills or knowledge. So if the product can't be competitive enough to sell, business developers might lack motivation to continue their jobs."	"Expect to have an experienced mentor to guide me through an organized process and help me develop better coding skills."
4. Manage the finance	"Being able to partly pay the salaries. I assume we can achieve it at the end of 2022."	"Money. Don't know if Dakodata can persist until making income."	"Company hasn't made any income yet. Everyone is working without salaries."

E. The mission and vision canvas

THE MISSION & VISION CANVAS

Company name:	Date:	Version:

COMPANY MISSION STATEMENT

A summary of your organization's goals and values

TIPS:
- Trying to make clear what the purpose of your company is.
- Don't say anything about how to accomplish that purpose.
- Be concise and short.

PRODUCT VISION STATEMENT

How your company achieve the mission through its product or service

TIPS:
- Be customer-focused.
- Be a bit stretchy, but no too unrealistic.
- Show differentiation.

This work is initiated in 2021 based on a Master student's thesis project at TU Delft.
The content of the mission & vision canvas combined multiple concepts from published articles.

DESIGNED BY: YIN-JEN LEE
Strategic Product Design MSc at TU Delft

TU Delft Delft University of Technology

F. The instruction brochure

MISSION & VISION

Articulate the big picture of your company

Download the canvas:
shorturl.at/nuMX1

TU Delft

Designed by
Yin-Jen Lee

Why does your company exist?
What is your company for?
What kinds of changes does your company bring to this world?
What makes your company different?

It's common to find you hardly answer these questions.
Because your company is lacking **MISSION** and **VISION**.

CONTENTS

INTRODUCTION

In an early-stage startup, the mission is the backbone of the business, the fundamental objective for building the company (Lazarova, 2020). It also attracts talented employees who believe in the company mission and values and work hard to achieve results (Rogers et al., 2018).

Working in such a highly uncertain environment, employees would struggle with making wise trade-offs in their daily practice if the company lacks a collective long-term goal. This situation slows down the speed of the new product development and causes the company to become outcompeted and fail.

In this case, the mission and vision canvas offers an opportunity to let the key stakeholders collaboratively exchange ideas and reach a consensus on the company's big picture. Then, after the leaders successfully outline the company mission and product vision, the whole organization will have a solid anchor for positioning itself. Accordingly, the employees will know how to make the right decision critically, keep the company constantly competitive, and survive in the market.

PREPARATION

Before diving into the process of filling out the mission and vision canvas, there are few preparations needed to be done.

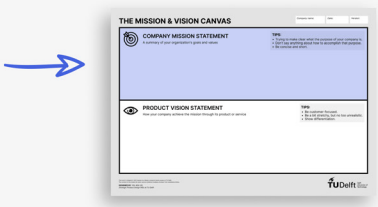
Aggregate insights
Having three kinds of insights is valuable for an early-stage startup to capture a holistic view of the organization's outside: qualitative insights, technology insights, and industry insights. The company can generate qualitative insights by conducting user research to identify the customer's needs and form the desired vision. When it comes to technology insights, the company can learn technology insights from the latest news in the tech field. The right technology enables the company to do its product work more efficiently and effectively, contributing to the mission's differentiation. Last but not least, industry insights are equally crucial for the company to know its competitive landscape in the market. The industry's primary trend and insights from similar demands in other regions can outline a clear image of the surrounding environment.

Reserve time for discussion
Mission and vision are the most important issues of the company. Please ask the key stakeholders to pusposely book a time slot for preparing and participating the workshop.

COMPANY MISSION

What is a company mission?

The most fundamental basis of a company is its mission. A mission statement showing the company's long-term goal gives employees a clear image that the company stands for. It describes an ideal scenario in the future that the customers desire as well. Triggered by this strong motivation, the company will strive to realize it in around five to ten years. A strong mission statement, therefore, becomes the core value that explains why the company exists. The founders should regard outlining the company's mission statement as the first vital thing they have to accomplish before diving into their daily practice.



Tips for building a good company mission

When writing down the company's mission statement, make sure the mission statement targets the desired future both for the company and customers. Cagan gave three key elements which entrepreneurs should take into account:

1. Trying to make clear what the purpose of the company is.
2. Don't say anything about how to accomplish that purpose.
3. Be concise and short.

Examples of mission statements

Microsoft: Empower every person and organization on the planet to achieve more.

Tesla: To accelerate the world's transition to sustainable energy.

LinkedIn: To connect the world's professionals to make them more productive and successful.

Walmart: We save people money so they can live better.

Starbucks: To inspire and nurture the human spirit - one person, one cup, and one neighborhood at a time.

Now, it's your turn to create a compelling mission statement with your partners!

PRODUCT VISION

What is a product vision?

After knowing what the changes company will bring to this world, the product vision represents a common goal for keeping the organization truly focused on the product leading to the achievement of the company's mission. A good product vision is customer-centric that positively impacts the lives of users and customers between two and five years out. When figuring out the product vision, lacking clarity is acceptable because the purpose is not defining the details. Instead, the product vision serves as a north star to constantly remind employees of the larger purpose and prevent people from losing sight of the overarching goal (Cagan and Jones, 2021).

Tips for building a good product vision

When writing down the product vision, make sure it should be a bit stretchy but not too unrealistic. For example, Roman Pichler suggested that a compelling product vision should be able to answer these four questions:

1. Who are the target customers and target users?
2. Which benefit does your product provide?
3. What is and will be the product and its differentiation?
4. What are the business goals?

Examples of product visions

Kindle: A weightless object that lasts more or less forever and is readable in any light.

Tesla: Create the most compelling car company of the 21st century by driving the world's transition to electric vehicles.

Spotify: Give people access to all the music they want all the time in a completely legal & accessible way.

IKEA: Offer a wide range of well-designed, functional home furnishing products at prices so low that as many people as possible will be able to sfford them.

Now, it's your turn to create a compelling product vision with your partners!

THE NEXT STEP

Evangelize the mission and vision

Great! Now you have reached a consensus on your company's long-term goal with your partners. Now you are going to convey the results throughout the company. You can post the mission and vision statement on the whiteboard that everyone can see, and you can also keep referring to the words while making decisions with employees. By constantly showing the company's objectives, all the people in the organization are on the same page. As a result, they know how to make the right decision, increase productivity, and seamlessly collaborate with colleagues from different teams.

Please keep in mind that the mission and vision might be changed according to the environment. Therefore it's suggested to review and update the canvas regularly.

Good luck and have fun!

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