



Bridging Borders in Healthcare

Designing a decision aid for internationalization of FocusCura

Master thesis

Thomas van Duijn

 **TU Delft**

focuscura 

“The best way to start a thesis,
is having a large quote on page two”

- Thomas van Duijn

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Master thesis

Title	Bridging Borders in Healthcare Designing a decision aid for internationalization of FocusCura
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Acknowledgments

Here it is, the last piece of work I deliver as a student. That was something. Eight years of studying have resulted in this crown jewel: my master thesis. There are a lot of people I need to thank for making that possible.

First, I would like to thank my great supervisory team, that have been greatly supportive in so many ways, during the entire length of my graduation project. Roland, Quiel and Ronald, I appreciate everything you have done for me.

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During the last months I have come across many people that were willing to help with parts of the research. Too many to name them all! Alright, maybe not too many: Norbert, Alexia, the

German seniors in Kleve, Albrecht, Kathrin (and grandparents), Julia (and grandmother), Isabelle (and grandmother), all FocusCura employees, Geert, Bart, Joerie, Stijn, Stijn, Joost, Quinten, Eveline, Melle, Sjoerd, and probably some others. Thanks!

Over the years, I owe a great deal to all friends I made in Delft. These are really too many to name them all. You know who you are! Thanks for making these past years a very memorable and precious period of my life. Let's keep on doing that in the years to come.

Last, but not least: my family. My brothers, that manage to keep looking out for me even though I am 25 now, thanks! And of course, I want to thank both my parents for always supporting me with whatever I wanted to do, unconditionally. Last years have not always been easy, but we pull each other through and keep on going together!

Enjoy reading this thesis.



Abstract

Healthcare innovation company FocusCura is one of the largest providers of eHealth in The Netherlands. Even though they are already active in other countries, they do not yet have a structured decision-making process for an international go-to-market decision. A decision aid for the business development department of the company solves this problem. To develop a decision aid academic and empirical research took place in three steps. First, to understand the internationalization strategy, process, and actions that provide the content for the decision aid. Second, to know more about decision aids and structured decision-making processes, that determined the decision aid structure. Third, generative research that provided company criteria for the design of the form. After configuration, this resulted in an improved internationalization process and a decision model that follows that. Building on that, a design process delivered a decision aid concept that meets the form criteria. It is tested with the end-user and optimized. The final foreign market-entry decision aid design followed from that. This design guides the user through the process of completing the decision model with a canvas and cards. A case study of the market-entry decision for the German personal alarms market then provided validation of the final design. This also indicated that FocusCura should enter that market. The result proved that the decision aid design structures the decision-making process and provides support to the decision maker.



Executive summary

Project summary

It is difficult to make the decision whether or not your company should enter a particular foreign market. The business development department of the company FocusCura struggles with this question, and needs a more structured approach to answer it. In this thesis report I design a decision aid to support the business development department of FocusCura in making a validated and structured foreign market-entry decision. The design is then applied to a case study for the entry of the German personal alarms market, to validate that it solves the problem.

Background

Healthcare innovation company FocusCura, one of the largest providers of eHealth solutions in The Netherlands, initiated this project. To grow as a company, FocusCura wants to offer its solutions in multiple other countries. They want to do this by having a structured approach. The company wants a tool that supports them in their internationalization endeavors. Initially, the tool will be applied to help them decide whether to step into the German personal alarms market. This is where FocusCura sees immediate opportunities for expansion. The way to get there, is by having a Strategic Product Design student from the Delft University of Technology do his graduation project on this topic.

Process

First, I analyzed the research context by looking at the eHealth market FocusCura operates in (virtual homecare and hospital-to-home), and looking closer to the company itself and their products.

Then I investigated how the assignment as given would actually solve the problem, by looking into internationalization, decision-making and decision aid form. From this, I sharpened the problem statement and discovered what information was still missing.

Research needed to be done to the internationalization strategy and its process and actions to know what method to follow and what steps to take in that process. The FocusCura Lighthouse internationalization process did not suffice, and did not completely comply with literature. Furthermore, I needed to know what kind of decision-making could support FocusCura's market-entry decision. MCDA decision-making satisfied, in the form of a SMART-model or score card. Lastly, I needed to know the criteria for the form of a decision aid. The business development department provided these in a generative session, pointing out to want an experience with head, heart and hands.

In three steps the research findings of internationalization and decision-making were configured into first an internationalization process model, then an internationalization actions model and last into decision model. The eventual decision aid design is certain way to fill out this model. The further specifications for this design that came from research were collected in a design brief.

The next step was conceptualization of a certain form for the decision aid. In a brainstorm session with industrial design students



and in a generative session with the business development department of FocusCura, ideas were generated. Clustering and further development led to five concept ideas, which were scored on the determined criteria. A combination of cards and a canvas proved the best solution, and they were elaborated to a first concept iteration. With user tests, the design was refined and resulted in a market-entry canvas and market-entry cards.

The decision aid was validated by a case study of the personal alarms market in Germany. This was done in a walk-through in which research results from interviews with German (non-)users and healthcare experts, a focus group research with users, a questionnaire and multiple reports and documents were processed. The results validated that the decision aid could indeed structure and validate a foreign market-entry decision. It also suggested that FocusCura should enter the German personal alarms market.

Findings and conclusions

The assignment for this thesis had two goals:

Develop a decision aid which supports FocusCura to structure their internationalization decision-making process. Apply the decision aid to a market-entry decision for the German personal alarms market.

I stated three research questions to achieve that goal of the assignment:

1. What are the internationalization models FocusCura needs to use to make a market-entry decision?
2. How can MCDA decision-making support a market-entry decision?

3. What criteria are there for a decision aid tool?

I found out that no validated internationalization model was used, so this needed to be developed, in order to find actions to take before being able to fill out the decision model and making a market-entry decision. Also, I found that a SMART-model and score card both would work as a decision model, because of their ability to handle qualitative criteria. Furthermore, the form of the decision aid had five main criteria: give direction, stimulate working together, provide overview, be visual and be simple. This together should be an experience with head, heart and hands.

The research provided answers to all the questions, of which the knowledge was then implemented into a decision aid design that indeed structures and validates FocusCura's market-entry decision. The application to the German personal alarms market could be executed, which resulted in a positive market-entry advice.



Abbr.

Abbr.	Abbreviations
EHR	Emergency Health Record
EMR	Emergency Medical Record
NL	The Netherlands
DE	Germany
eHealth	Electronic Healthcare
BDD	Business Development Department
DC	Design criteria
I	Insights
CEO	Chief Executive Officer
CFO	Chief Financial Officer
MCDA	Multi criteria decision aid
MCDM	Multi criteria decision-making
DSS	Decision support system
SDM	Shared decision-making

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Reading guide

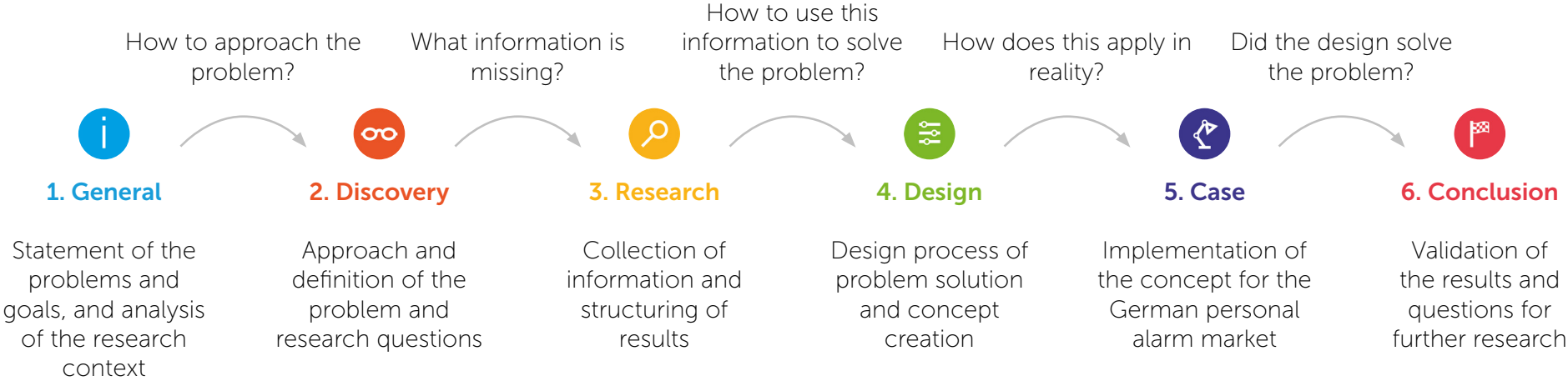
This thesis consists of six chapters. The journey towards the design of a decision aid is in chapter one to four. In chapter five, a case for the decision aid design shows the application of the design. The conclusion in chapter six finalizes the report. The chapters and their relations to each other are below.

Researchers will mostly be interested in the first three chapters, designers can look for the final design at the end of chapter four, and business practitioners might skip to chapter five for the business case.

The gray boxes at the end of each chapter contain the conclusions of that section. These contain the design criteria (DC) and insights (I). See the boxes below as an example with further explanation.

Design criteria (DC) are conclusions directly implemented in the design.

Insights (I) are important observations not directly leading to the solution of the problem.



Content

Abstract	Executive summary	Glossary and abbr.	Figures and tables	Reading guide	Content
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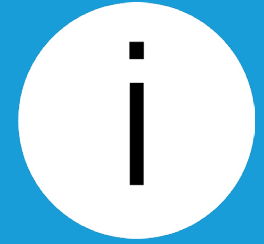
1. General		2. Discovery		3. Research		4. Design		5. Case		6. Conclusion	
Introduction	13	Introduction	25	Introduction	35	Introduction	55	Introduction	87	Introduction	99
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Appendix



1. General



"Old man, look at my life,
I'm a lot like you were"

- Neil Young (Old man)



Introduction

Mrs. de Vries is a 75-year old woman who risks falling down every day. Because of her age, she does not stand that firmly in her shoes anymore. In a small apartment in Groningen, she lives alone, ever since her husband died two years ago. Life gets harder, but Mrs. de Vries is happy she can still take care of herself.

Her children are worried, though. They live 45 minutes away in Leeuwarden and are afraid something might happen to her. They know the facts: every five minutes a senior in The Netherlands ends up in the emergency room because of a fall, and every day ten people die because of it (Op de woerd, 2017). If their mother would fall, they fear she might not get the required help in time. Luckily, there are electronic health (eHealth) solutions available for this problem.

eHealth is one of the ways to make the life of chronically ill and seniors better. By making use of, for instance, telemonitoring or personal alarms, more security can be provided while hospital visits get less frequent. Moreover, being able to call for help can save lives. FocusCura is the market leader in The Netherlands when it comes to providing these kinds of eHealth solutions.

While more than hundred thousand people use FocusCura products in The Netherlands, there are no clients yet in neighboring country Germany. With about five times as many people living there, so close to home turf, this seems like a reasonable market for them to expand in.

Now Mrs. de Vries uses a personal alarm, she feels a lot safer and her family has more peace of mind too. In an emergency situation, she can now press the button hanging around her neck, and she gets help. She recommends using a personal alarm to Frau Muller, her German friend in Kleve. Would it not be great if she and all other German seniors could get the same service?



"I find it a very nice thought that I can alert a caregiver if necessary."

- Mrs. de Vries (FocusCura client)



Assignment

Healthcare innovation company FocusCura, one of the largest providers of eHealth solutions in The Netherlands, initiated this project. In order to grow as a company, they want to offer their solutions in multiple other countries. They want to do this by having a structured approach. The company wants a tool that supports them in their internationalization endeavors. Initially, the tool should be able to help them decide whether to step into the German personal alarms market, yes or no. This is where FocusCura sees immediate chances for expansion. The way to get there, is by having a Strategic Product Design student from the Delft University of Technology do his graduation project on this topic.

For this thesis, I created a focused problem definition and approach, together with objectives for the project.

Problem

FocusCura is not always making well substantiated decisions about taking steps abroad. The company knows the Dutch healthcare market very well, while foreign markets are very unknown. They want to gather information about a certain foreign market and structure it to make a more validated decision about starting business there. There is a need for a strategic design in the form of a decision aid to support their international business development. This decision aid is a tool that is characterized by its ability to structure complex processes to support making internationalization decisions.

Furthermore, the company receives attention from organizations in Germany that want to do business, but the German healthcare user needs and their requirements are mostly unknown territory for FocusCura. Following the decision aid, I need to give an advice whether to enter the market with their personal alarms product category.

Hence, the assignment is twofold. First, develop a decision aid which supports FocusCura to structure their internationalization decision-making process. Second, apply the decision aid to a market-entry decision for the German personal alarms market.

Approach

First I analyze the research context by looking at the eHealth market FocusCura operates in, and looking closer to the company itself and their products. Then I investigate if the assignment as given will actually solve the problem, by looking into internationalization and decision-making. From this, I sharpen the problem statement and discover what information is still missing. I start doing research to the internationalization strategy and its process and actions. I also research decision-making processes. With the outcomes I then design a decision aid concept, and test it with the end-user. I apply the final design to the market-entry decision in Germany to validate if the design solves the problem.



Objectives

The outcome of the project is a decision aid for FocusCura with which the people responsible in the company can make a more validated decision about starting business in a foreign market. The result can be directly applied to the German personal alarms market, for which a market-entry decision will be made.



FocusCura

FocusCura is a healthcare innovation company based in Driebergen (100 people) and Amsterdam (30 people). From the start in 2003, their vision has been to use technology to make healthcare warm, human, accessible and affordable for everyone that needs it. Their mission is to make products and services that help vulnerable people live independently and happy for as long as possible.

They have products in the categories personal alarms (cAlarm), home access management (cKey), medication guidance (cMed), online measuring (cVitals) and videocare (cContact). Currently, their main market is elderly and chronically ill people in The Netherlands (about 95% of operations). Next to that, they serve people in Belgium, Sweden and Denmark. As a company, they act as a platform that integrates multiple aspects of caregiving. It connects hardware vendors, technology partners/resellers, health insurers, emergency response centers and electronic medical/health records (EMR/EHR) with care professionals and patients with their relatives. They provide invoicing, organizing, purchasing, service, maintenance development, connection to EHRs and installation and implementation around their five product categories. This is done both B2B as B2C.

In Fig. 1 there is an overview of the FocusCura product and service offerings. On the left are their partners with whom they establish their products (in the circle) and services (around the circle). They offer this to the clients, at the right of the figure.

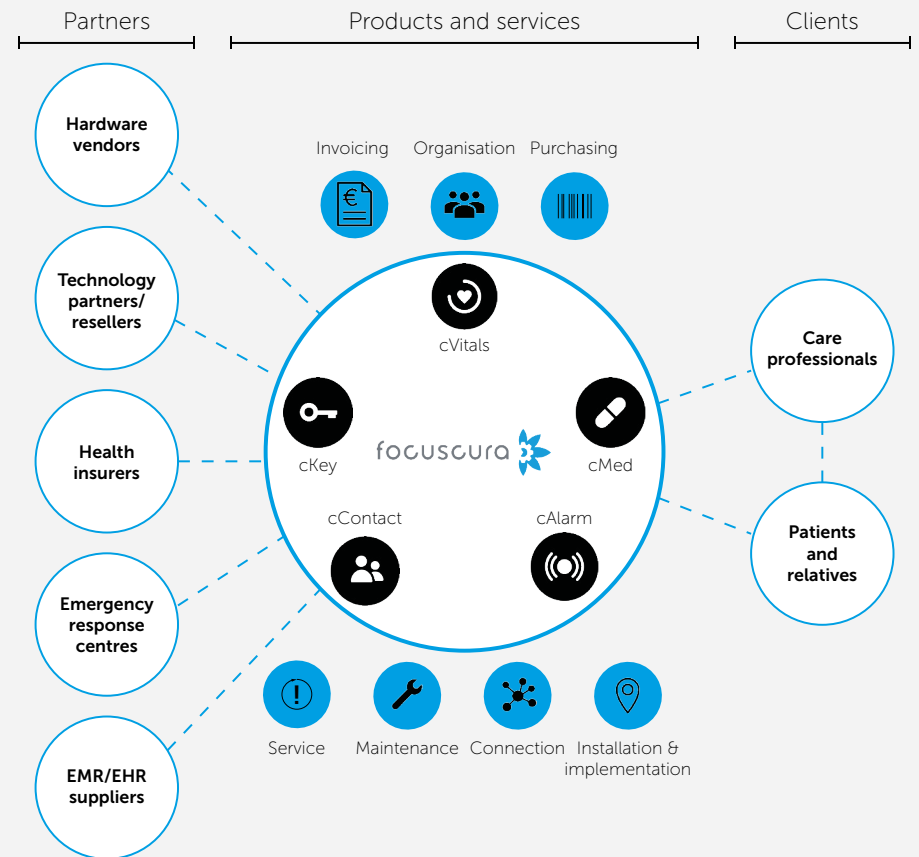


Fig. 1 - FocusCura product and service offerings



History

Like every good startup story, it started with the CEO in a garret. In this case Daan Dohmen. He was triggered by his own experiences working in a nursing home at 17 years old. People suffering and feeling very dependent: they deserved better. His answer was innovation and the use of technology. At first, he supported healthcare organizations with consultancy services for technological developments. Quickly, besides consulting, he started installing telecare solutions.

In Fig. 2, you can find a timeline with the milestones in the history of FocusCura. cAlarm, a home personal alarm solution, was the first widely adopted product for the company. After that, they developed four more products. In 2010, Daan Dohmen became EY Entrepreneur of the Year. In 2014, they took the first steps abroad in Belgium and Sweden. In 2015, they also chose in Denmark as a new market. Two years ago, they established a partnership with Apple, and a year later with Cisco. Together with them, FocusCura improves product development, while it also opens opportunities to make use of their network for their go-to-market strategy.

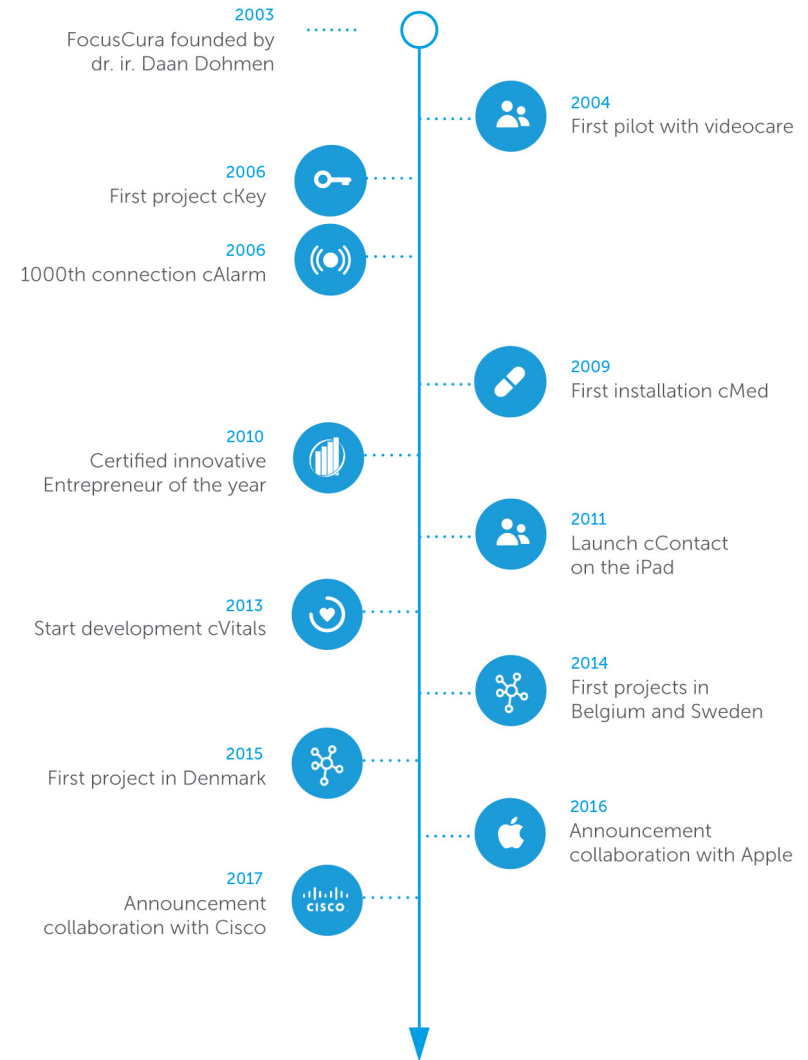


Fig. 2 - Milestones in the FocusCura company history



Analysis

This chapter focuses on establishing a basic understanding of the field FocusCura is operating in (eHealth), and a deeper understanding of the company itself and its products. They are one of the largest providers of eHealth solutions in The Netherlands, so it makes sense to look into what that is and what the main challenges are. I present a full overview of the company and its alignment as this helps understand strategic decisions. I show the five product categories and their life-cycle states briefly, to get a general sense of what products the company wants to bring abroad.

eHealth

In history, all countries across the globe established some sort of healthcare system. Societal events partly fueled healthcare progress, like epidemics or population growth, but also technological progress (Mitchell & Haroun, 2012). The printing press in the 1440s (and later the internet in the 1950s) made it possible to distribute disease information, with the invention of the microscope (in the 1590s), we discovered germs (which later proved to be related to diseases) and with the thermostat we could measure body temperature in the 1830s (which is linked to fever detection). Technology developments grow faster than ever, and healthcare progress follows. eHealth is one of the largest developments of recent years.

eHealth is the use of electronic technology in healthcare. For years now, policymakers and interest groups endorse eHealth (Nictiz en

het NIVEL, 2016), but also many of them still deeply mistrust it. This has a couple of reasons. For instance, healthcare professionals find it hard to fully understand, implement and finance the technology (FocusCura & Menzis, 2018). Also, they want to see hard evidence first before they commit to a different way of working than they have done for years. On the other side stands the Triple-aim promise that some solutions provide (Berwick, Nolan & Whittington, 2008, see Fig. 3). This aim is to make the population healthier, with lower costs and with a better experience of care quality.

Whether it is in hospitals, specialty care, general practitioners, doctors or bedside care: in 2023 there will be a shortage of 125.000 healthcare employees (Actiz, 2017). A reason for this is the declining capacity due to an aging population and a lack of availability for healthcare professions. FocusCura fills this gap with its solutions. Dutch patients in general are increasingly troubled by a lack of

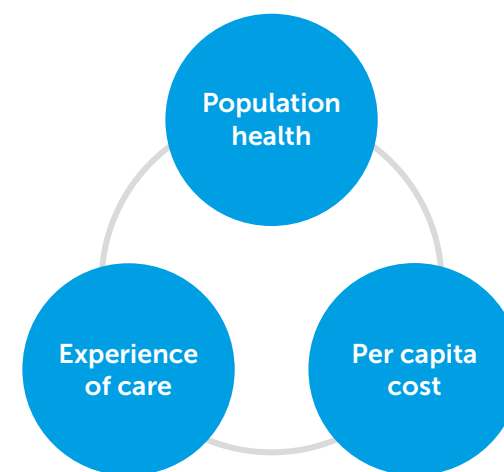


Fig. 3 - Triple Aim (Berwick, Nolan & Whittington, 2008)



adequate care. People wait to get the help they were promised, but waiting rooms are increasingly often full. Even for the simpler tasks, for example to measure lung capacity, the cues are filling. These trends in The Netherlands make it necessary to pursue Triple-aim solutions to keep care on a high level.

Company analysis

An analysis of FocusCura’s internal proceedings shows how they operate and align within in the company. A visual representation based on the McKinsey 7S model (Waterman, Peters & Philips, 1980) shows this alignment. Change managers usually use this model to make business processes more effective or design (parts of) organizations. The model also serves its purpose when used visually to get a complete image of the company.

It builds on three ‘hard’ factors (red) and four ‘soft’ factors (green),

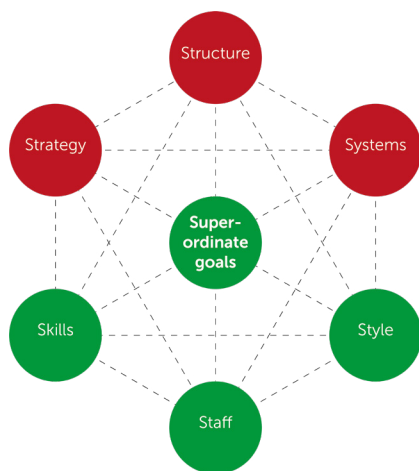


Fig. 4 - Original McKinsey 7S model (Waterman, Peters & Philips, 1980)

all equally important, that give an image of how well all operations within the company align (See Fig. 4). The company performs effectively if all factors are complementary to one another. See appendix A for a full explanation on the model.

Visual 7S

The company analysis consists of a review of internal documents, interviews and job shadowing. The result of this is in Fig. 5. The business development director validated this model to be a realistic representation of the current state of the company. There is a full description of the models’ aspects in appendix A.

Findings

The company is generally well aligned, but there are also some misalignments. There is alignment in, for example, the vision of the company, which supports the long-term mission, and fits the style. Also, the staff profiles, working structures and systems contribute positively. There is misalignment in, for instance, the core value ‘simplicity’, which is not notable in systems-side, which shows abundant use of different channels and work methods. Also, the service department has a lot of different work instructions for different customers and different products, which turns into quite a fragmented and complex way of working. This increases the workload, and it makes the service offering less smoothly. This has influences on other parts of the company as well (for instance, installers that need to perform the services). The company is addressing these issues so they can operate at their highest potential. A design requirement for the decision aid is not to solve the misalignments, but the design itself should align with the company.

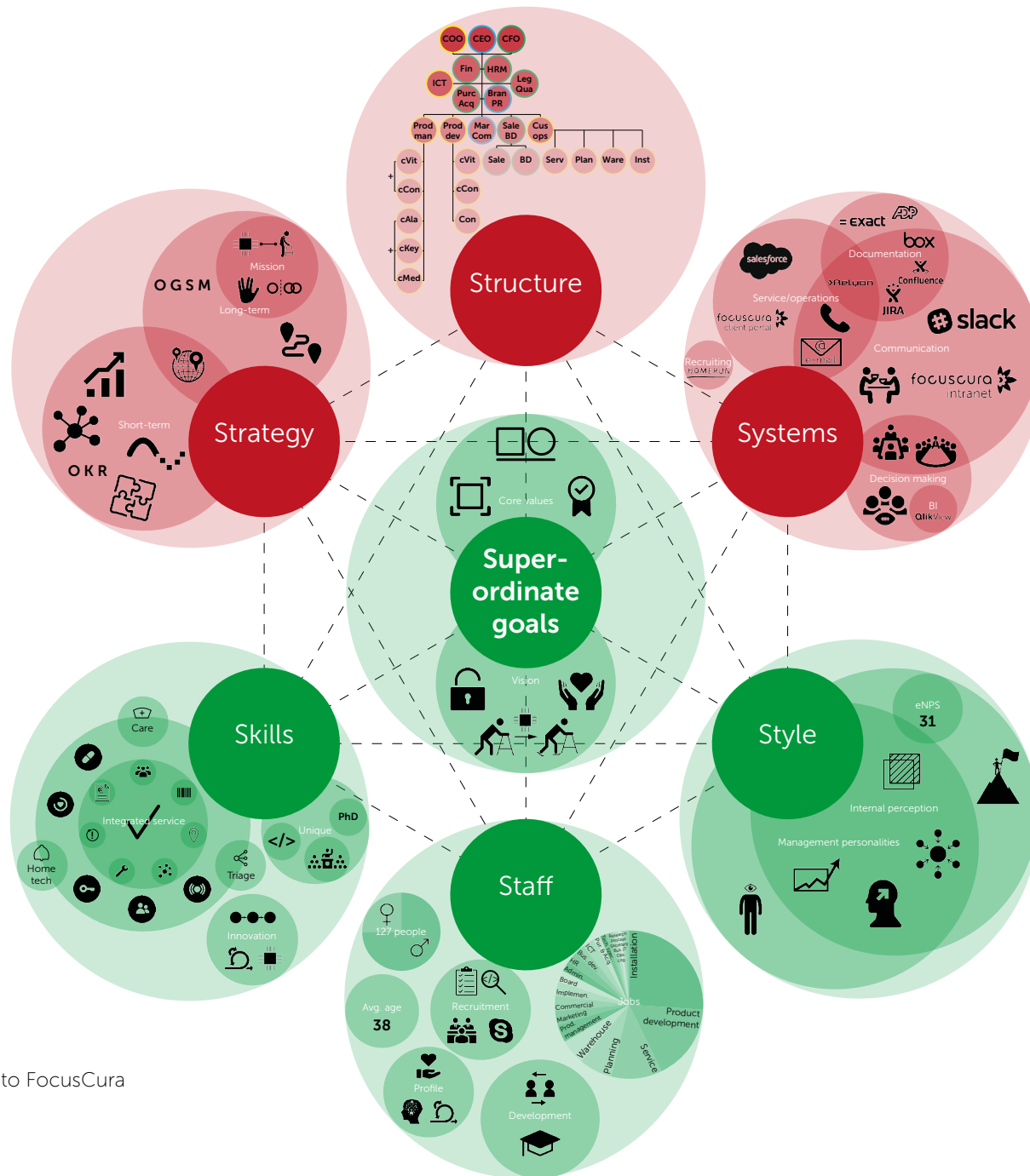


Fig. 5 - Visual 7S model applied to FocusCura



Products

The products and services FocusCura currently offers give insights into their value proposition. FocusCura offers products/services in five categories:

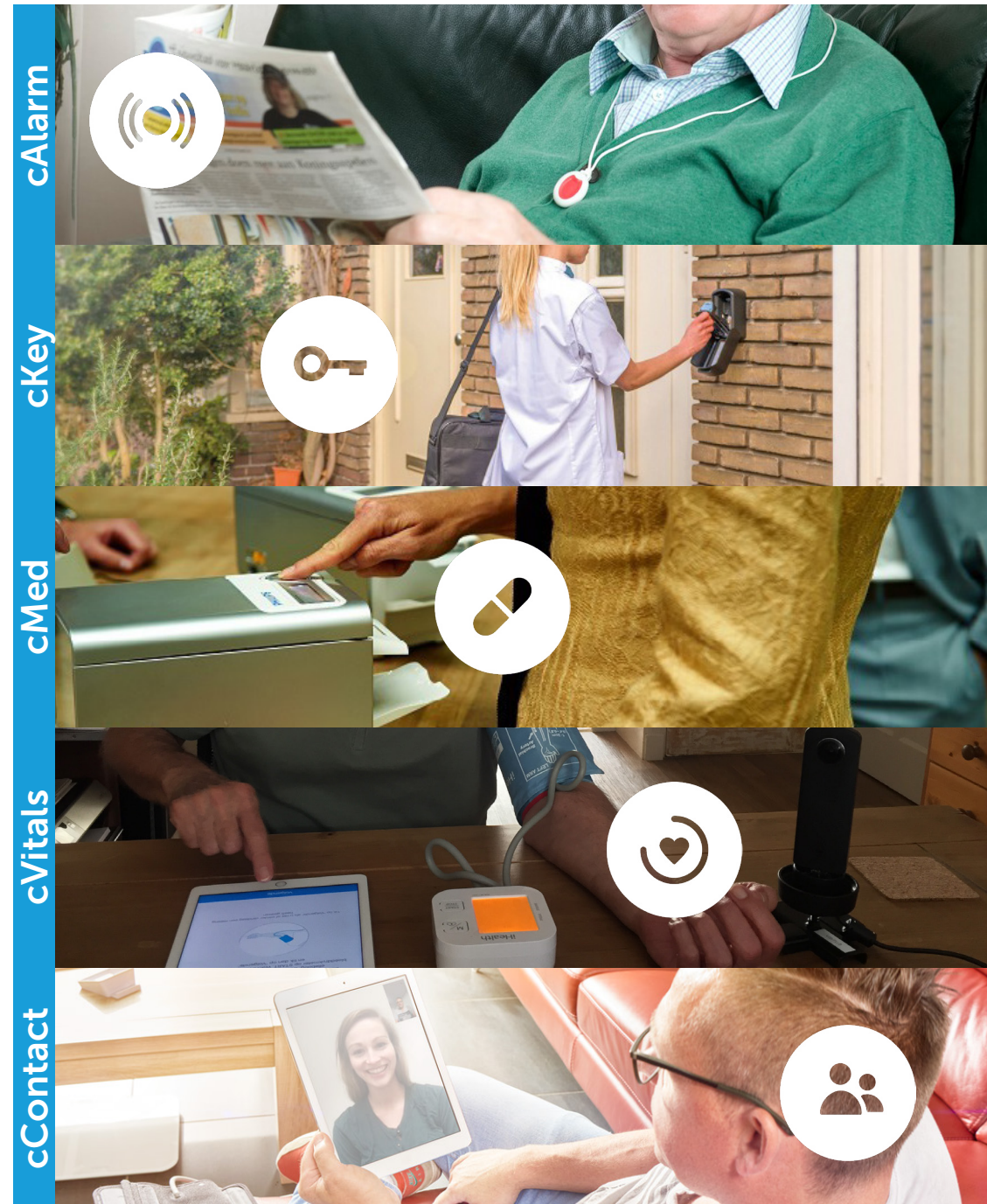
- Personal alarms (cAlarm)
- Home access (cKey)
- Medication guidance (cMed)
- Telemonitoring (cVitals)
- Video care (cContact)

For all categories, the hardware products themselves are purchased at a manufacturer following a best-of-breed strategy. For cVitals and cContact, the software is developed in-house. The company acts as a reseller, with the added value of offering a complete service and software applications around the products. More information about the product details can be found in Appendix B.

Maturity

FocusCura made a seemingly accurate plot of the current life-cycle states of the products (S-curve) and a plot how they develop in terms of market share and growth (BCG-matrix) that show the maturity of the company. Both apply to the Dutch market. From these plots, you get an overview of the maturity of the products.

The S-curve (Fig. 6, Rogers, 1983 and Memorandum, 2017) shows the product adoption in relation to its time on the market. In an early stage when adoption is still low, the product is in the innovating phase. When the product gains adoption after a while, it



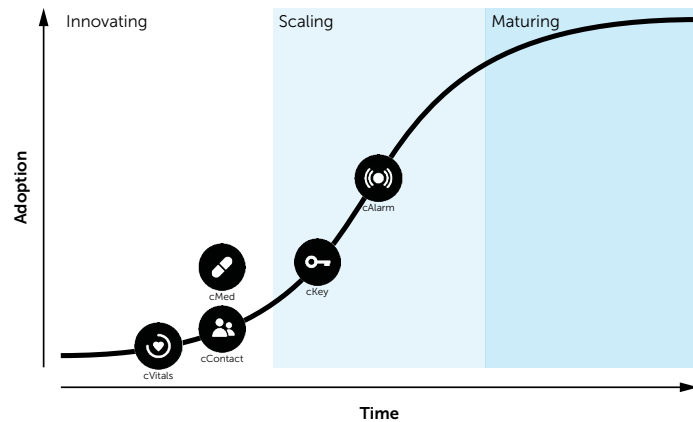


Fig. 6 - S-curve

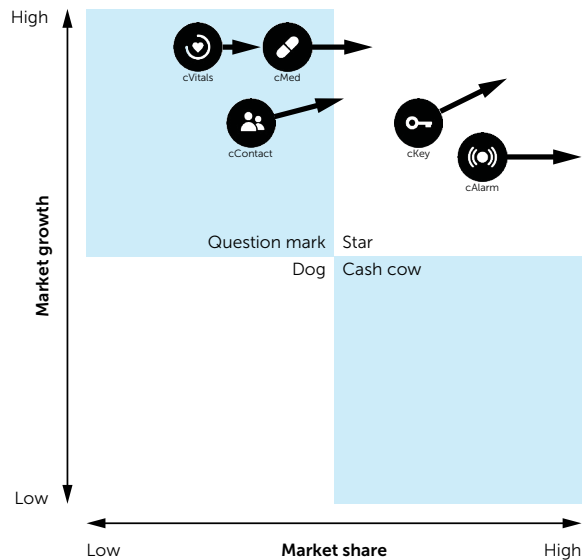


Fig. 7 - BCG-matrix

is in the scaling phase. The final phase is maturing, when a product reaches the maximum adoption in that market. You see that cAlarm has a high growth rate and is scaling fast. cKey just started scaling, and gains traction in the market. cVitals, cMed and cContact are still in the innovating phase, which means a few projects are up and running. People widely use cContact already in some markets, like home care.

The BCG-matrix (Fig. 7, Henderson, 1970 and Memorandum, 2017) shows the market growth in relation to the market share of the product. 'Dog' and 'Cash cow' products are in mature markets (low market growth). The dog should be repelled because market share is also low, while the cash cow should be milked to get money from a large presence in a stable market. 'Question mark' and 'Star' products are in developing markets (high market growth). The question mark is uncertain to become either a star or a dog, because there is low market share yet. The star is earning money and is worth further investment, so it becomes a cash cow when the market matures. The innovating products are now still question marks. However, they are moving towards being a Star, which means they have big potential in terms of market growth and market share. The scaling products are already stars, and still move towards a higher market share.

Conclusion

FocusCura's products are in different maturity phases, which means some already show their potential and for others it is still unclear how large their market share can become. For the internationalization strategy it is important to know that they have products with proven potential in the domestic market.



Conclusion

The results in this chapter give a clear background image of the context of the assignment, and thus has many insights. The next step is to see if a decision aid design is indeed suited to structure an internationalization process to make an foreign market-entry decision.

Design criteria

DC

- The decision aid must enable FocusCura to validate their internationalization decisions.
- The decision aid needs to give the users an experience of support in their decision-making.
- The decision aid must align well with the rest of the company.
- The decision aid must encourage information gathering.
- The decision aid needs to structure information.
- The decision aid must at least be able to support a market-entry decision for the German personal alarms market.

Insights

I

- FocusCura is one of the largest providers of eHealth solutions in The Netherlands.
- FocusCura is not always making well substantiated decisions about taking steps abroad.
- FocusCura's vision is to make healthcare warm, human, accessible and affordable.
- FocusCura operates as a platform that integrates multiple healthcare aspects.
- FocusCura has five product categories, in different stages of maturity.
- For less mature products it is harder to decide how large the market share can be.
- FocusCura's products have large potential in the domestic markets.
- FocusCura has experience with internationalization to Belgium, Sweden and Denmark.
- 'Triple Aim' is a goal many organisations (including FocusCura) have in redesigning healthcare processes.
- Important trends are a high costs (due to an aging population) and low availability of healthcare professionals (increased need, low interest)
- Implementation, financing and technology are the most important barriers when innovating healthcare
- FocusCura is pretty well-aligned internally.
- The vision supports the long-term mission, which also align with staff capabilities and style.
- There is some misalignment between core-value simplicity and the amount of systems being used





2. Discovery

"Following the light of the sun
we left the Old World."

- Christopher Columbus



Introduction

Mrs. de Vries was a girl scout when she was younger. She liked going into the woods to discover what was out there. She learned a lot from looking around and exploring, but gained the most know-how from reading books. Often she would stay up late and just stare at the pretty pictures. Those were the days...

Sometimes she was given an assignment to earn a special badge. One time, she needed to collect a special kind of wood, for the campfire to burn as long as possible. When little Mrs. de Vries came back with the wrong kind of wood, her camp leader got mad. She did not understand why. Her book told her this wood would burn way better and longer than the other would! When it turned out to be true, everyone was amazed. The camp leader even gave her an extra badge for her ingenuity. Mrs. de Vries learned a valuable lesson then, which still comes in handy today: be critical towards information you are given. First investigate the options that lead towards the best solution.

For this reason, in this chapter I focus on why this research needs to be done. First, I explain my approach to the assignment, and which research methods I use. Then, I discover more about what internationalization is and why any particular process should be followed. Furthermore, I look into what decision aids are, why I would need to design one, and if they can really structure a process. The conclusions give more detailed problem definitions and provide direction for the researches that can solve them.



Approach

I follow an approach that focuses on two large steps, involving many different research methods. The two big steps are development of the decision aid, and market-entry research for Germany.

The research process is based on the Triple Diamond design process (Fig. 8), which is an adaptation of the Double Diamond design process (Nessler, 2016). I added elements of the Design Sprint framework (2018) to include a proof of concept in the form of a market-entry decision. This model starts with a problem definition that follows from this chapter. By diverging and converging three times, you can make sure that you design the right thing, design things right and lastly prove that the things you designed are right. The results are, respectively, a design brief with criteria for the design, a conceptual solution to the problem and a validated proof of concept of the solution. This model is the basis of the research process.

The research process takes you through the whole research from beginning to end (Fig. 9). I start the process with the assignment, which is: develop a decision aid which supports FocusCura to structure their internationalization decision making process. With a context analysis as base, I discover what a decision aid and its elements are to sharpen the problem statement. After that, I research the specifics of these elements of the decision aid, which results in a concrete design brief. A design is conceptualized and then applied to a market-entry for personal alarms in Germany.

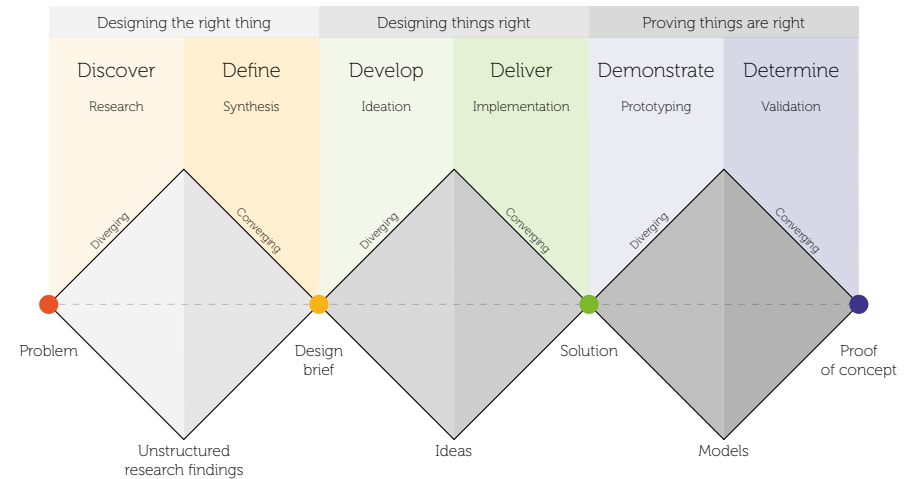


Fig. 8 - Triple Diamond, adapted from the Double Diamond design process (Nessler, 2016) and the Design Sprint framework (2018).



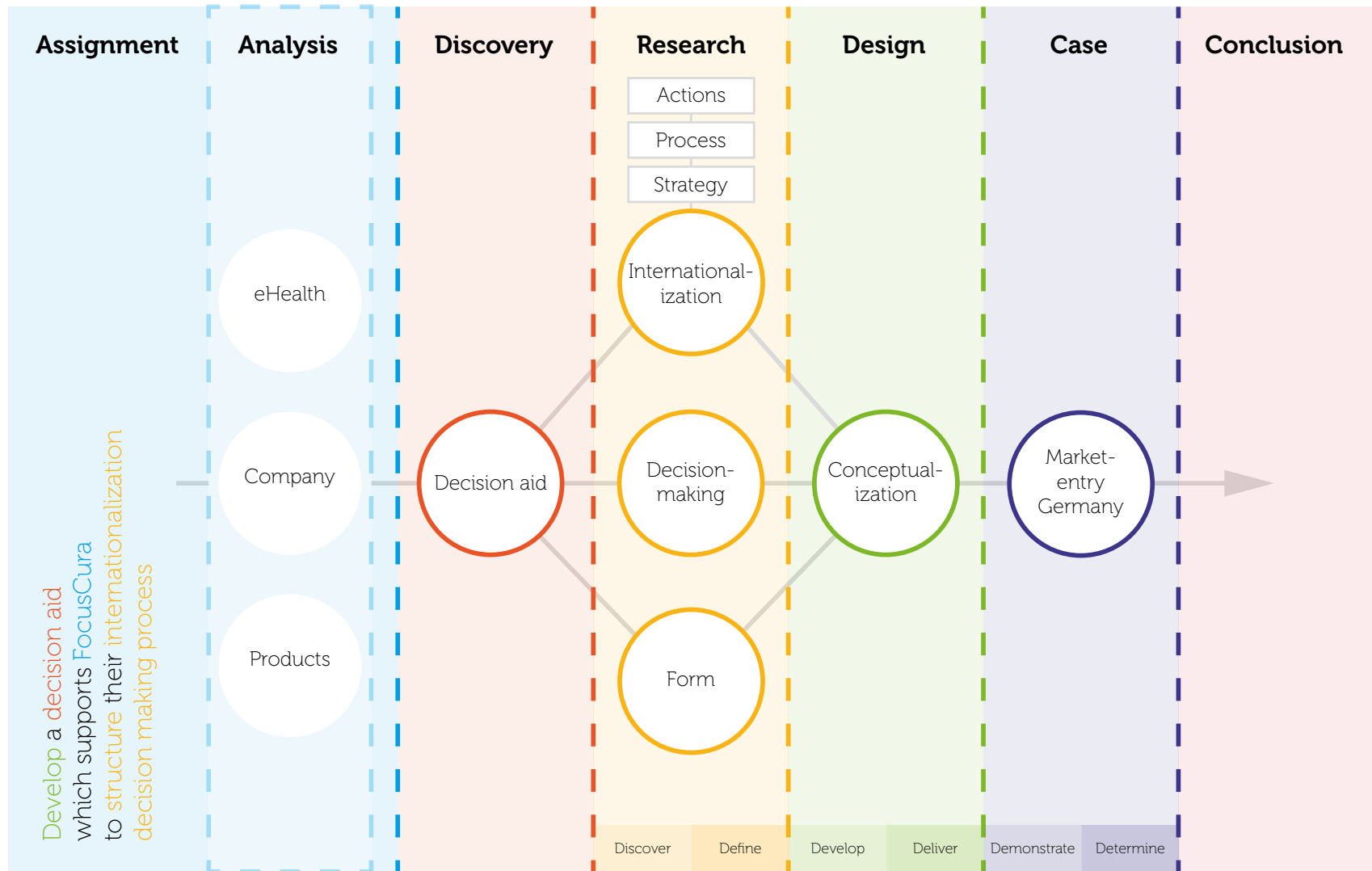


Fig. 9 - Research process for the project

Methods

To complete these researches I use a total of eight different research methods. Next to information from published material, which I divide in document review and literature review, I obtain information from people directly. I do this by making use of the Levels of knowledge (Sleeswijk Visser, Stappers, van der Lugt & Sanders, 2005). Fig. 10 shows the theory behind that method. It divides the research techniques into three categories: interviews, observations and generative sessions. Interviews (but also questionnaires and conferences) are useful to get explicit knowledge about what people say and think. Observations (under which focus groups and job shadowing falls) are useful when you want to observe what people do or how they use things. Generative sessions tap into the tacit and latent needs of people, to know what they know, feel and dream. I chose to apply relevant research techniques based on the kind of knowledge I want to get out of it. In Appendix C, more information can be found on the research methods.

I apply the methods to the different parts in the research process. In Table 1 is an overview of which methods I used in which step in the process. The codes in the table each correspond with a research question. Under this code they can be easily found in Appendix D..

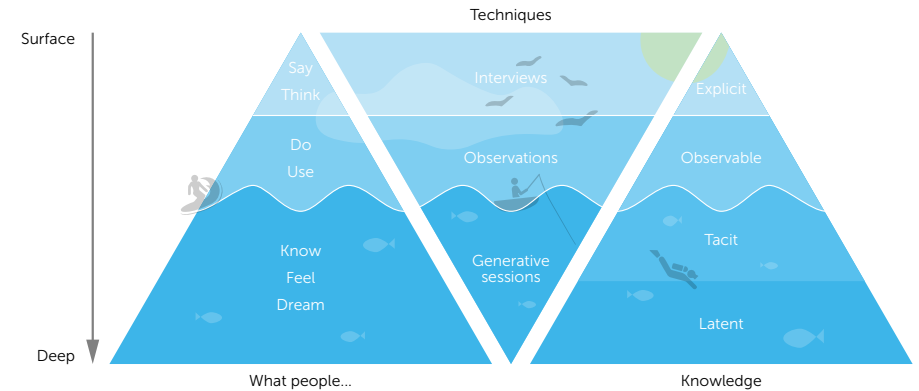


Fig. 10 - Levels of knowledge, adapted from Sleeswijk Visser, Stappers, van der Lugt & Sanders (2005).



	1	2	3	4	5	6	7	8	9
	eHealth	<i>Analysis</i> Company	Product	<i>Discovery</i> Decision aid	Internationalization	<i>Research</i> Decision-making	Form	<i>Design</i> Decision aid design	<i>Case</i> Market-entry Germany
A Document review	1A	2A	3A	4A	5A				9A
B Literature review				4B	5B	6B			
C Generative research				4C	5C	6C	7C	8C	
D Interviews		2D	3D		5D			8D	9D
E Focus group research								8E	9E
F Job shadowing		2F	3F						
G Conferences	1G		3G						9G
H Questionnaires									9H

Table 1 - Codes that correspond with researches done in this project



Decision aid

Before I directly start to develop a decision aid for the BDD, I need to know what a decision aid really is and if that would really solve the problem. I present a definition for a decisions aid from literature and consider the one that best applies in this situation. I sharpen the problem definition based on the findings.

Definition

Decision aids are a category of the decision analysis (DA) discipline that addresses decision making in a formal matter. In the medical world they are common practice in patient-caregiver relationships as shared decision-making in medicine (SDM) tool (Frosch & Kaplan (1999). It allows for a better understanding of the outcome probabilities and a mutual agreement on the treatment. For managerial decisions, decision analysis is commonly done with decision support systems (DSS) (Filip, Zamfirescu & Ciurea, 2017). A decision support system is (Filip, 2008):

"An anthropocentric and evolving information system which is meant to implement the functions of a human support system that would otherwise be necessary to help the decision-maker to overcome his/her limits and constraints he/she may encounter when trying to solve complex and complicated decision problems that count."

The anthropocentric emphasis indicates that, certainly in recent years, these systems rely on software applications. This means there is an information system that replaces human functions to

overcome limitations to solve complex problems.

Though comparable, decision aids focus more around support of human behaviour instead of replacing it. The framework mostly used in this space is called Multiple Criteria Decision Aid (MCDA (Roy, 1990), or more recently called Multiple Criteria Decision Analysis). This framework focuses on the evolution of a multi-criteria decision-making (MCDM) process and takes into account the value systems of people, like for instance intuition. MCDA compares multiple objectives, aside from cost and efficacy, and allows for different perspectives of the criteria (Schey, Krabbe, Postma & Connolly, 2017). Roy (1985) gives the following definition of what decision aiding in this context means:

"Decision aiding is the activity of the person who, through the use of explicit but not necessarily completely formalized models, helps obtain elements of responses to the questions posed by a stakeholder of a decision process. These elements work towards clarifying the decision and usually towards recommending, or simply favoring, a behavior that will increase the consistency between the evolution of the process and this stakeholder's objectives and value system."

To clarify, there is a stakeholder with certain objectives and a value system. This person has a question in a decision process and a person uses models to clarify the elements of a decision. This increases consistency in the decision process. The stakeholder and the person could be the same person that acts as both questioner and answerer. I show a summarized example in Fig. 11.

When you deduct the decision aiding definition to an object that makes this possible, you get a definition for a decision aid.



"A decision aid is a tool that uses models to clarify elements of a question of stakeholders in a decision process, with respect to their objectives and value system. The result is a recommendation that shows consistency in the evolution of the process."

This definition for a decision aid that follows the MCDA framework for decision-making is compatible with the objectives of this report: structure complex processes to support internationalization.

Other considerations to this are the SDM and DSS framework. SDM is similar to MCDA, but is almost exclusively used in the medical field, where decision outcomes are even more based on human value systems. Because the outcome is about business decisions, this is not a logical option to develop. DSS frameworks are highly valuable to make fact driven decisions based on analytical software programs, but this does take human functions out of the equation. This would be a large step for the BDD that so far runs in an entrepreneurial, intuition-based way. Also, investing in a DSS costs a lot of time and money, while a MCDA decision aid is easier to implement. This makes DSS a good option for the future, but MCDA is the way to go for this assignment.

An internationalization process has multiple criteria upon which a single yes/no decision will be made. A MCDA will bring structure to this process. More detailed research in chapter three (Decision-making) will explain more about how the decision will be made. Besides knowing how to decide, the other elements in the definition need further research. First I identify the models that clarify elements of the internationalization question. Also, I need to know if these are in line with the objectives and value systems of the stakeholders. I explain this in chapter three

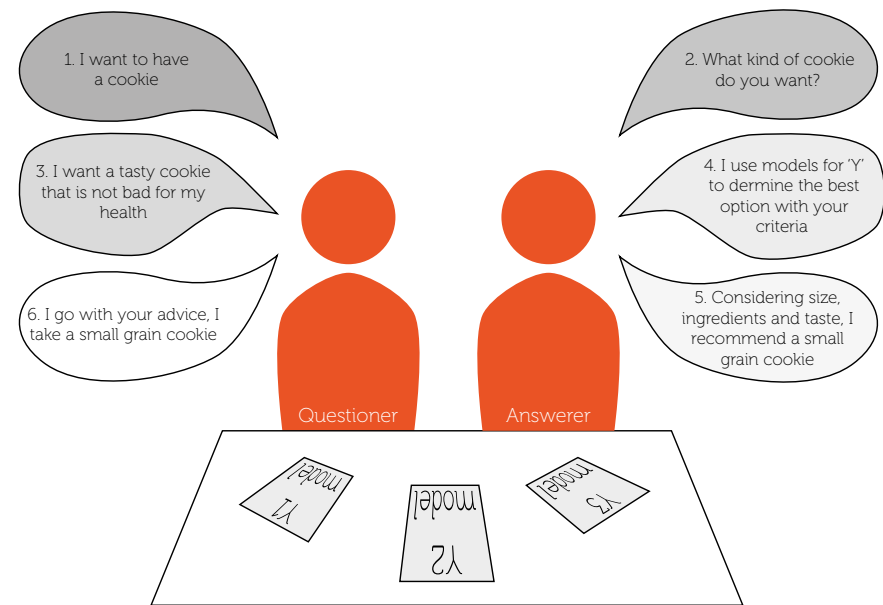


Fig. 11 - Decision aiding example (Internationalization).

The definition also speaks of a tool, which is a broad term. This could be any utensil that helps perform the job of supporting internationalization. Therefore, I do research to find criteria for the form of the decision aid. You can find this in chapter three (Form).

Problem definition

The definition of what a decision aid is leads to a more specified problem definition. The original problem definition is that FocusCura is not always making well substantiated decisions about taking steps abroad. For this, FocusCura gave the assignment to develop a decision aid which supports them to structure their internationalization decision-making process. The definition of a decision aid shows models for internationalization need to be found to solve the problem. Also, MCDA needs to be applied to structure the decision making process. Lastly, the criteria for form of the tool need to be established. See Fig. 12 for an overview of the decision aid structure.

Therefore the problems are defined as followed:

1. FocusCura has no clear overview of what internationalization models to use before making a market-entry decision.
2. FocusCura does not make use of a structured decision-making process.
3. FocusCura's criteria for a decision aid tool are unknown.

Research questions

From the problem definition, the research questions and sub-research questions can be extracted. These are:

1. What are the internationalization models FocusCura needs to use to make a market-entry decision?
 - a. What is internationalization?
 - b. Who is responsible for internationalization?
 - c. What is FocusCura's internationalization process?

- d. What should an internationalization process look like?
2. How can MCDA decision-making support a market-entry decision?
 - a. How should a MCDA decision model be structured?
3. What criteria are there for a decision aid tool?
 - a. How can FocusCura best use the decision aid?

The answers to these questions provide the necessary design criteria which is the basis of the decision aid design.



Fig. 12 - Decision aid structure

Conclusion

The decision aid definition gives direction to what researches are needed to construct one. It has also led to a more detailed problem definition and research questions. These research questions will be addressed in chapter three.

Design criteria

DC

- The decision aid should be based on a multi-criteria decision analysis framework.
- The decision aid result should show consistency in the evolution of the decision process.
- The decision aid should take into account the user's value systems.

Insights

I

- A decision aid is a tool that uses models to clarify elements of a question of stakeholders in a decision process, with respect to their objectives and value system.
- SDM and DSS frameworks are less suited than MCDA frameworks to answer the research question.
- FocusCura has no clear overview of what internationalization models to use before making a market-entry decision.
- FocusCura does not make use of a structured decision-making process.
- FocusCura's criteria for a decision aid tool are unknown.



3. Research



"I go checking out the reports
Digging up the dirt
You get to meet all sorts
In this line of work"

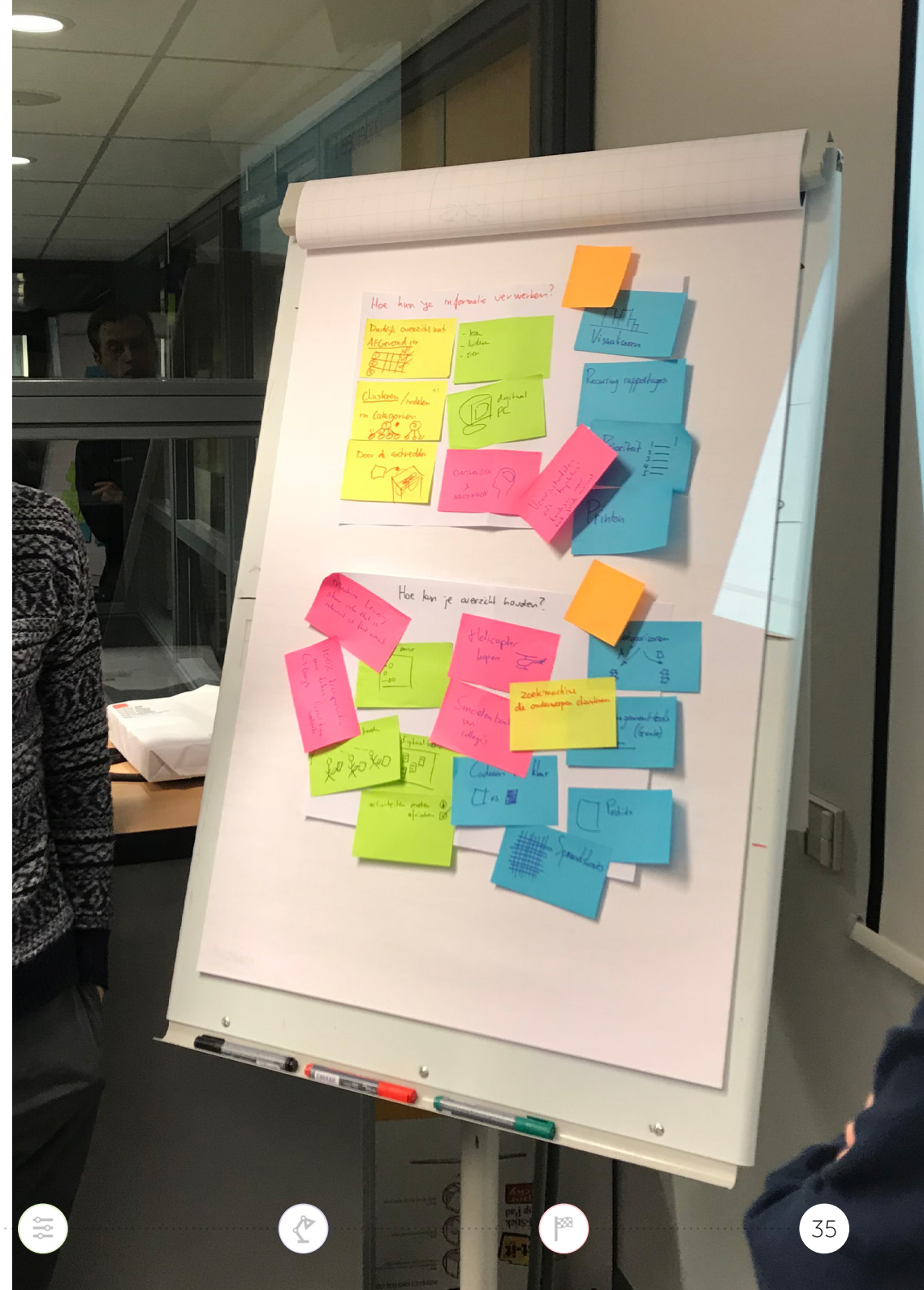
- Dire Straits (Private investigations)



Introduction

Mrs. de Vries is a very structured person. Everything in her house needs to be neat and tidy. She got that from working as an administrative assistant for a bank in her early twenties. Mrs. de Vries needed to collect and process information of the accounts of debtors. Even the smallest mistake could mean a loss of hundreds of guilders, back then. She is still proud of her flawless track record in the three years she worked there. How she did that? Her advice is to keep focused on the goal: Only collect and process information that contributes to your objective. Keep it neat and tidy!

In this chapter I collect the information I need as input for the decision aid design. First, to know what actions the decision aid should have, I must look at the strategy and processes the company follows and wants to follow. I configure this, together with literature, to an internationalization process, that has relevant steps to solve the research question. Then, I focus on the decision-making. I figure out what decision-making process fits best with the intended actions for the design. The results are structured to use them in the design brief.



Internationalization

I need to know what internationalization means, who in the company does this and why they do it. Through a literature review, I first establish a definition of internationalization and its components to know what it is and what needs further research. After that, I look into the business development department (BDD) of FocusCura, who are responsible for internationalization. Through document review and interviews, I aim to learn what their responsibilities and intentions are.

Definition

A universally accepted definition of internationalization does not exist (Susman, 2007), however on the highest level it at least includes a company starting business in a market across national borders. In the context of this assignment, internationalization is the outward process of exporting a product (or service) to another country (and not inward, importing from other countries). Because of the new-business character, internationalization is also called international entrepreneurship (Keupp & Gassmann, 2009; Oviatt & McDougall, 2005), and, because of its relation to business growth, also international expansion (Zulima & Nieto, 2005). I consider these terms as interchangeable.

There are different movements within the internationalization theory. Most literature views internationalization as a process, and few as a strategy (Tuppura, Saarenketo, Puumalainen, Jantunen, & Kylaheiko, 2008). The strategy-based view is essential for managers

in planning and realization, because they constantly need to make decisions in uncertain situations. The process is a large factor in this strategy to take away uncertainty. You can describe internationalization as a foreign expansion process of a company that happens with a certain strategic goal. This goal could be, for instance, to achieve growth, gain a competitive advantage or be more cost-effective.

With this in mind, I consider internationalization as a process that provides structure within a certain strategy.

Business development

The BDD of FocusCura is tasked with internationalization and they want to know how to decide whether to start business in a particular foreign country. The department consists of three people: a director, a senior manager and a junior manager. Working closely with the CEO and CFO, they are responsible to create long-term value for the company. Together, they try to maintain relations with (new) customers and scout for, and act on new market opportunities. Naturally, because they also see market opportunities abroad, internationalization is part of the BDD's work. The main reason is for the company to achieve growth.

So far, they took up on business opportunities in Belgium, Sweden and Denmark. More than three years ago, when this started, the responsible team was smaller, and they made decisions less structured than they would have liked, mainly caused by a lack of resources (time and manpower). To make these decisions more structured, without draining a whole lot of resources, they would like to have a repeatable structure they can follow, to overcome



this. The BDD is my internal 'client' and user that needs structure in their internationalization process.

Strategy

The internationalization process needs to follow a certain intended strategy. There are many definitions of what a strategy is. According to Mintzberg (1978) all definitions consist of "deliberate conscious set of guidelines that determines decisions into the future". A strategy is explicit, has been developed purposefully and in advance to the decision it applies to. In other words, a strategy leads to a process in which certain actions are planned that should lead to a certain outcome (Fig. 13). These planned actions (called models in the previous chapter) provide information upon which you can make decisions.

In this chapter I explain more about the intended strategy the decision aid needs to follow by means of the process and actions it requires.



Fig. 13 - Steps towards an outcome

FocusCura wants to act on new market opportunities to grow without making large adjustments to the product. Because of this, by definition, they follow a market development strategy for the internationalization process (Ansoff, 1957, Fig. 14). For market development, they have committed internally to a strategy called the Lighthouse strategy (Fig. 15). This strategy is jointly developed by FocusCura with Apple, with whom they have a Mobility Partnership. With the Lighthouse strategy, they seek for representative

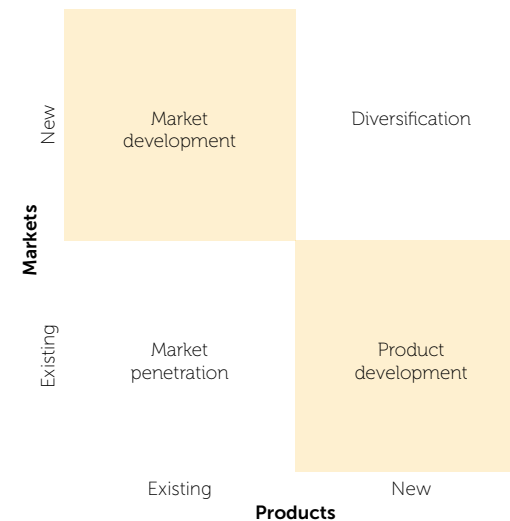


Fig 14 - Ansoff matrix for growth strategy planning (Ansoff, 1957)

organizations within a new market, that are respected and highly visible. By starting pilot projects with these 'Lighthouses', they want to validate and show that a certain product works in that market. This serves as proof for other organizations, that will follow the example of the Lighthouses and engage with FocusCura. Apple supports FocusCura in the engagement with the right Lighthouse customers.

Because of the internal commitment to this strategy, I take this as the basis for the internationalization process. This means that the process needs to take place within the constraints of this strategy.

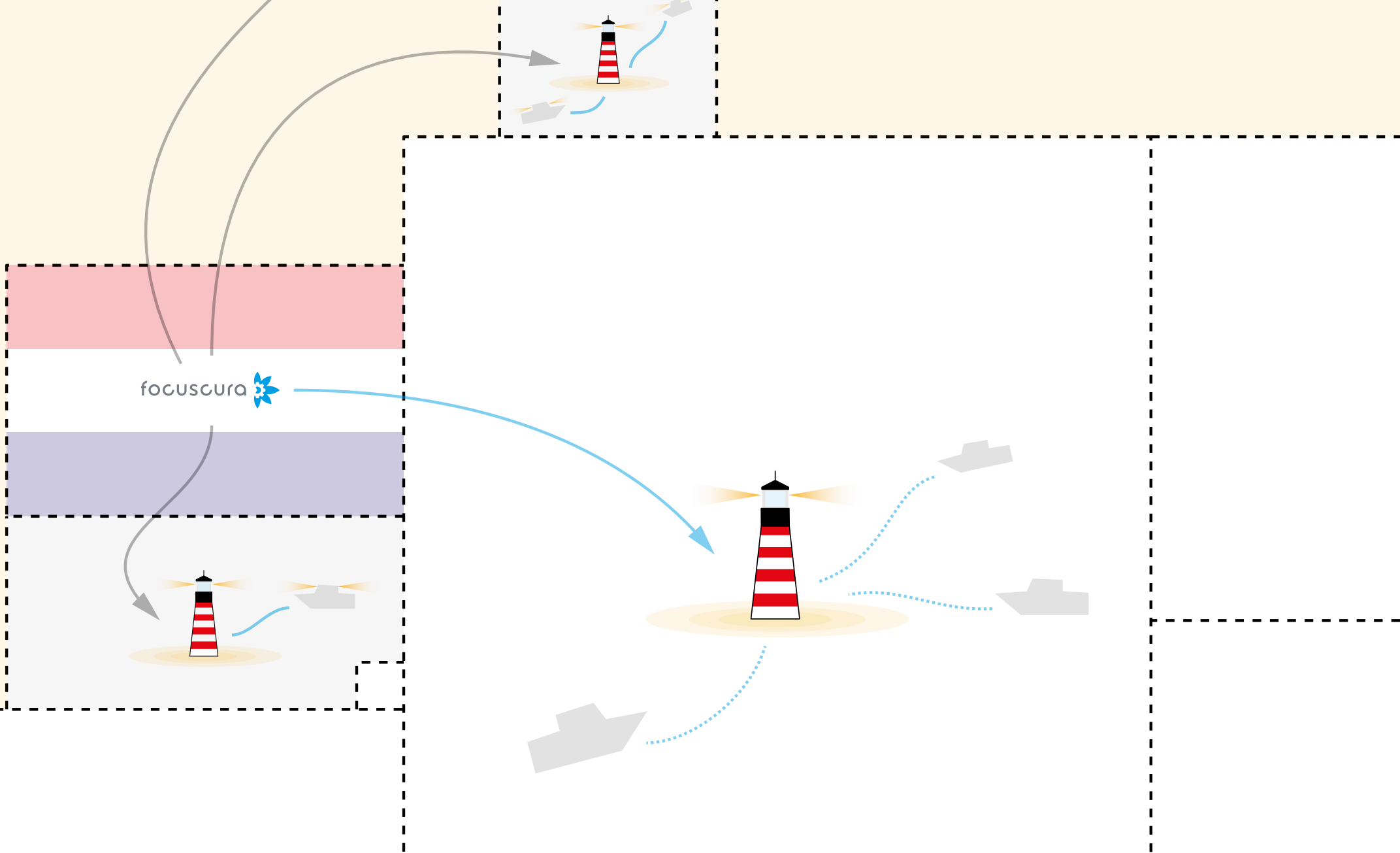


Fig 15 - FocusCura Lighthouse strategy

Internationalization process and actions

There is an internationalization process FocusCura already uses, but it needs to be relevant to base a decision aid design on. First, I research the process the company has in place now and how they would like to shape it for the future. I do this by document review of the available documents on the Lighthouse strategy, interviews with the BDD director and by doing generative research with the BDD and CFO. Then, I provide a viewpoint on the internationalization process from literature.

Present process

FocusCura has a four-phase Lighthouse strategy process for internationalization (Fig. 16).

1. The first phase is an initial assessment, of whether the market is attractive enough for the company to initiate a project in.
 2. Phase two is discovery, where in they explore the elements of the local environment and find Lighthouse customers.
 3. In phase three, proof-of-concept, they implement a pilot project with these customers to create an example and validate product-market fit.
 4. Lastly, they reach the established phase, where they are fully operational in that countries' market.
- Between the phases, they make go/no-go decisions whether to continue with a next step, yes or no. Market-entry happens in phase three, so the market-entry decision happens after phase two.

Like I explained earlier, this process is developed jointly with Apple. Within FocusCura there is limited knowledge of the scientific substantiation.

In a generative session, the BDD and CFO reflected on how the process actually happened and how they organize it now. They made internationalization decisions opportunistic and largely based on network and experience. Among others, they get a lot done with the personal network of the CEO. Nowadays, though they make decisions a bit more thorough than they used to do before 2016, when they first started internationalizing. Still, they can just have a 'brainwave' where they decide to "just do it", without following this process.

To make more substantiated internationalization decisions, they need to follow a structure more, that fits their actual activities.

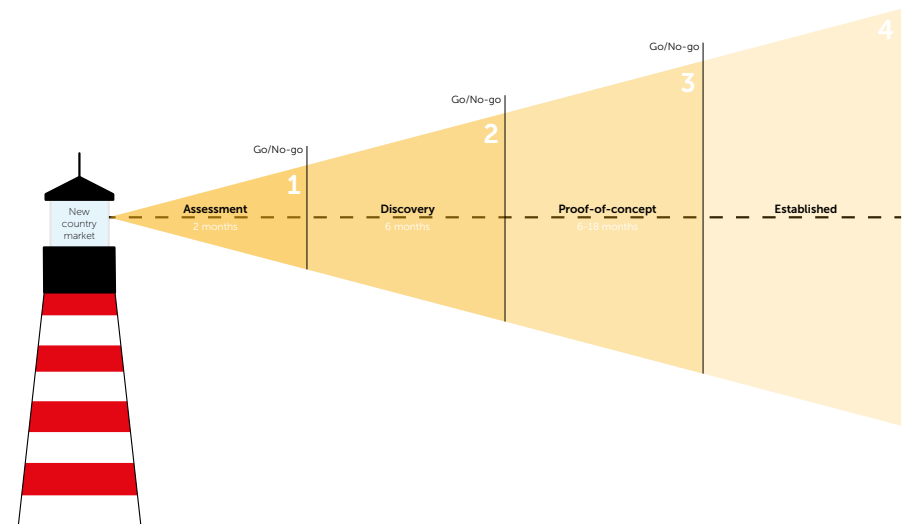


Fig 16 - FocusCura Lighthouse strategy process



Present actions

Within the Lighthouse process, FocusCura also has presented actions to undertake in each phase (see Fig. 17). The stated terms represent subjects to research in a new market in a foreign country. For instance DESTEP (demographic, economic, social, technological, ecological and political) factors. They do not have fixed objectives for the researches, or captured when the information results in a 'go' or a 'no-go'. It does give some direction into what information to take into account before making market-entry decisions.

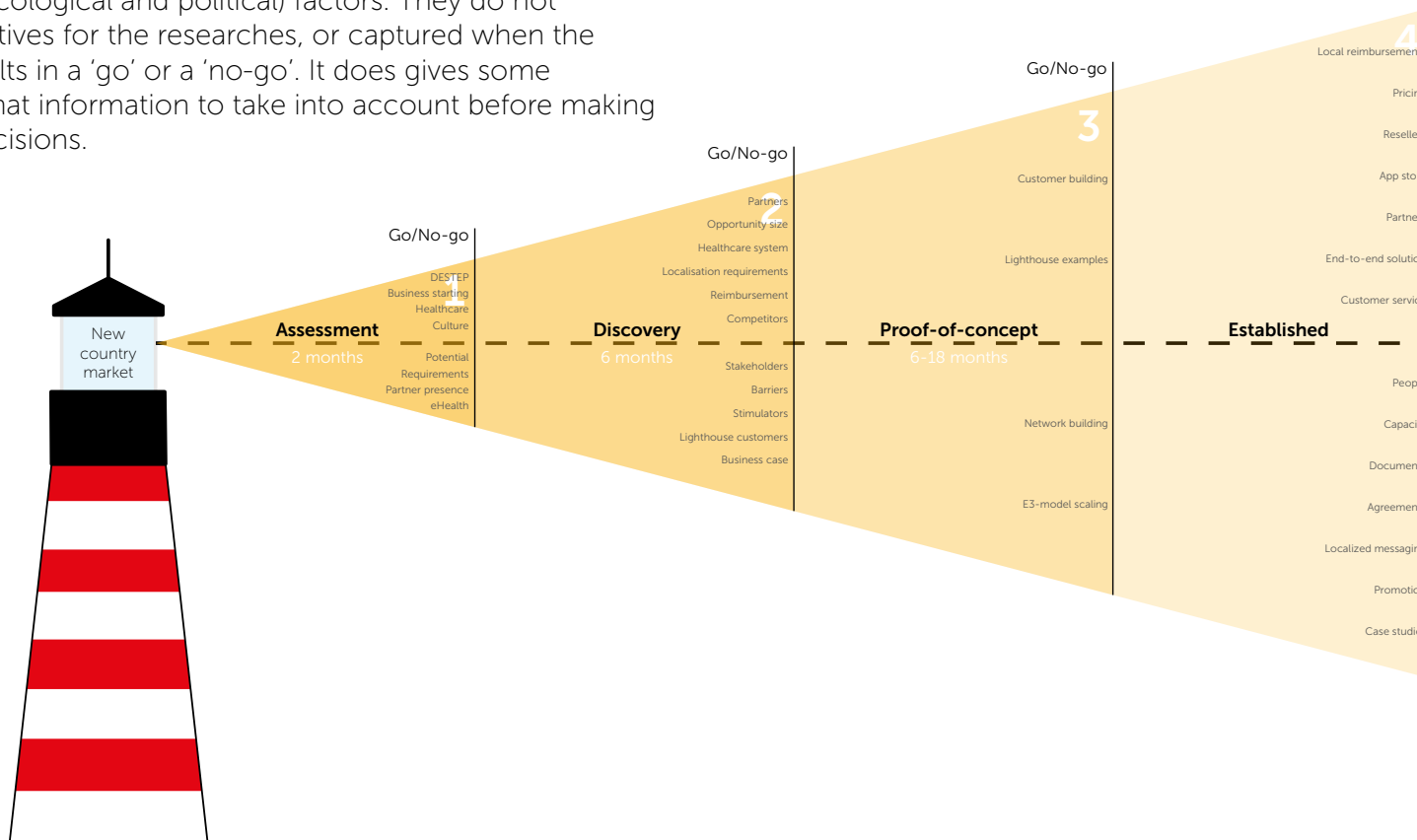


Fig 17 - FocusCura Lighthouse strategy process and actions



Envisioned process

To find a structure that fits the needs of the BDD I establish a future vision for the internationalization process, again in a generative session with BDD and CFO (Fig. 18, Fig. 19). The envisioned process consists of six steps in four phases.

1. The first phase has three steps they need to do iteratively. To assess market attractiveness, they need to analyze a country top-down, experiment with market stakeholders bottom-up and develop the value proposition based on the insights. With enough information, a go/no-go decision will be made whether to enter that particular market.
 2. In phase two they will tend to prove that the value proposition works in the new market.
 3. In phase three, they organize all internal and external conditions.
 4. In phase four, they execute full scale projects.
- After they pass go/no-go decisions, they can still resort to a previous phase when information is still missing. Because the market prove gets done in phase two, the market-entry decision happens after phase one.

Besides that they have similar phases and both have go/no-go moments, there are also some key differences between the Lighthouse process and this envisioned internationalization process. In this envisioned process, they more explicitly want an experimental and iterative approach for themselves, especially in the first phase. Also, getting information bottom-up from stakeholders and early value proposition development is new in this process. What is also noticeable, is that they want to have proof earlier in the process.

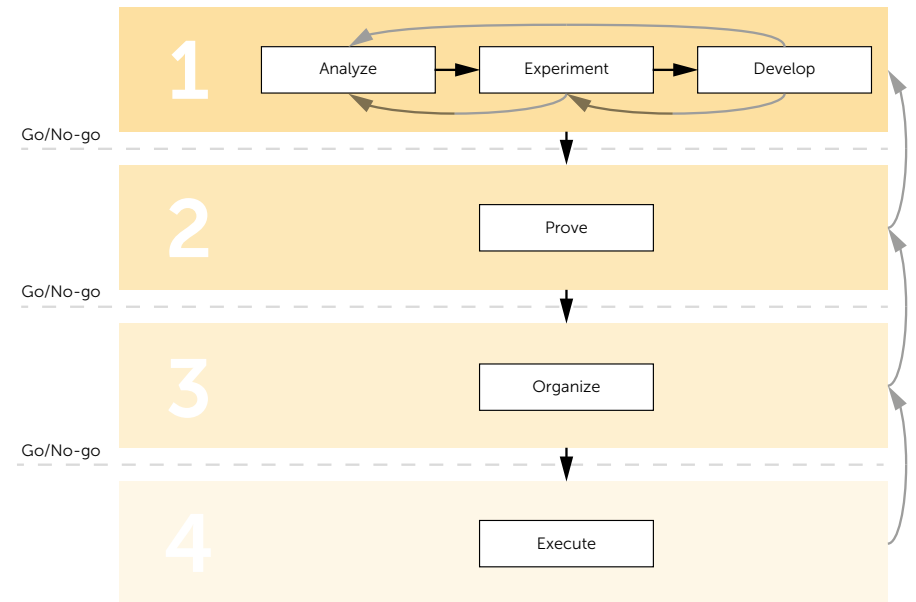


Fig 18 - FocusCura envisioned internationalization process



Fig 19 - Generative session BDD for envisioned internationalization process

Envisioned actions

The generative session also provided some more detailed actions the BDD wants to undertake for their internationalization (see Table 2). It gives insight into what they think they need to do to complete the phases of the process, how they see themselves execute it and what the deliverables should be.

Some details and deliverables are missing, because during the session the emphasis was less on getting a complete list and more on getting a general idea of their vision. What stands out is that the deliverables mentioned are very alike the ones in the present Lighthouse strategy process (Fig. 16). Also, they want more insights directly from the customer by having a bottom-up approach. They said to want to do more experiments with customers, to know their wishes and validate the (future) value proposition. One of the reasons is that this fits well with their company-wide ambition to work more according to the principles of 'agile' and 'lean'. Furthermore, they see a business model canvas as a very valuable tool to get an overview of their value proposition.

Step	Goal (go/no-go)	What	How	Deliverables
1a. Analyze	Find problem or opportunity that fits the FocusCura mission and vision	Desk research Field research	Reports, building network, interviewing	DESTEP, finances, healthcare access, capacity, organisation
1b. Experiment	Positive feedback from the intended market	Contextual research Customer insights	Bottom-up approach	
1c. Develop	The product/service fits the intended market	Value proposition	Product adjustments, business modelling	Product/service, SWOT, business model canvas
2. Prove	There is proof-of-concept	Small projects, tenders		Value proposition
3. Organize	All internal and external conditions are ready for operation	Stakeholder management		
4. Execute	Launch full size project			

Table 2 - Envisioned actions for internationalization



Literature

Because the process and actions are only substantiated by the experiences of people, there needs to be a basis in literature as well. I look at what literature says about the internationalization process. In particular, the Uppsala internationalization model is of interest. Then, I look at market-entry literature to get insights into what information I need to make a market-entry decision. The goal is to know more about actionable models to collect this information.

Internationalization process theory

The top-level definition for internationalization earlier in this chapter, gives rise to first look deeper at two large schools of thought on internationalization process theory: Uppsala (business network internationalization process) model and innovation-related models (Gankema, Snuif & Zwart, 2000). The Uppsala model sees internationalization as organizational learning with focus on experience, while innovation-related processes are organized around strategic choices and organization forms. In the context of the more experimentally focused process FocusCura envisioned, the Uppsala model is the most relevant to investigate further.

The Uppsala model is a progressive model (Danciu, 2012) that builds on learning and commitment building (Johanson & Vahlne, 2009). It is a process that is pursued within a network. In this network, insidership is necessary for internationalization. Insidership means a company needs to create strong connections with partners. Network relationships provide potential for learning, commitment and trust-building. These relationships help identify international opportunities and contribute to new knowledge development. They do not just come from strategic decisions

a company makes, like the innovation-related models suggest (Coviello & Munro, 1995; Johanson & Vahlne, 2009).

The Uppsala model (Fig. 20) has two modes (state and change) with four variables (two in the left block, two on the right). The state mode represents a present situation. The change mode represents a developing situation. These two modes continuously affect each other, either positive or negative. Each variable has specific components they influence. In the state mode, the knowledge and opportunities variables and network position variable are present. In the change mode, relationship commitment decisions and learning, creating and trust-building are present.

The model is mainly about opportunity development based on knowledge and network. Opportunity development is an interactive process gradually gaining recognition of an opportunity and the exploration of it. The exploration and the resulting exploitation overlap, because of information inavailability. This inavailability of

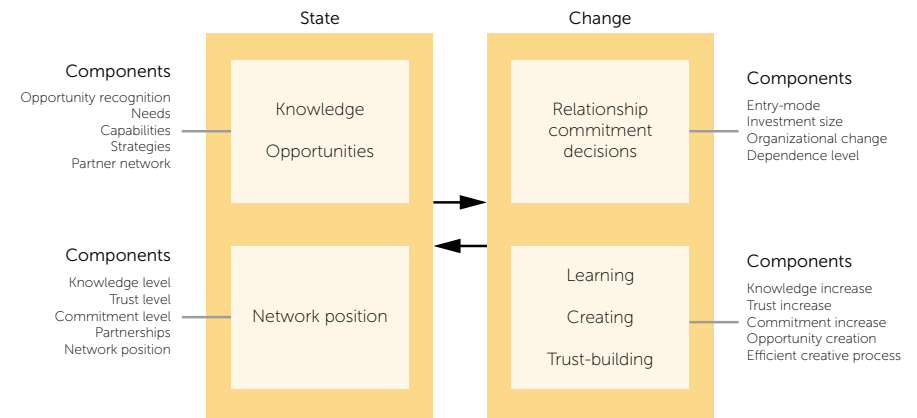


Fig 20 - The business network internationalization process model (Uppsala model), adapted from Johanson & Vahlne (2009) to include the components.

information brings risk and uncertainty, which you can avoid by taking small steps at a time. You can make information available from general knowledge (for example, knowledge that is learned in class), but more importantly from experimental and experiential knowledge (Azuayi, 2016).

In line with the Uppsala model and the stressed importance of opportunity, the definition of international entrepreneurship by Oviatt & McDougall (2003) is also interesting. They say international entrepreneurship is about discovery, enactment, evaluation and exploitation of opportunities, to create future goods and services across national borders. This definition shows similarities with the phases both in the Lighthouse process and the FocusCura envisioned process.

This review shows that there is at least partly an academic basis for the by FocusCura envisioned internationalization process. For instance, the iterative and experimental development of knowledge in phase one complies with the learning, creating and trust-building of the Uppsala model. Also, the important opportunity discovery, enactment, evaluation and exploitation all have a place in the envisioned process.

What is underexposed in the envisioned process is the importance to have and develop a network and relations. Though, the company does have a large network, at least in the home market. Also, they have large network opportunities, among others via the CEO. Because of the importance in literature, there are reasons to add this network component to the internationalization process FocusCura needs to follow. Also, the network and knowledge development need to happen continuously, and not just in the first phase.

Market-entry theory

For market-entry, a lot has been written about international market screening to decide entry between different markets. Not many focus has been on the market-entry decision itself. There is a difference between whether you want to know more about different markets to choose between them, or you want to know if a particular market is suitable. Though the goal is different, you need the same information from a particular market to assess its value. These screening methods for market selection therefore also apply for market-entry decisions in a particular market.

Table 3 shows three different takes of international market screening. Johansson (2009) describes a four-step model for country entry screening, that can be used after a wide-range informal country analysis. Root (1994) presents a similar model for target country screening. Between every step there is an accept/reject decision, from which accepted countries continue to the next step, and rejected countries get pushed aside. Hollensen (2011) suggests internationalization determinants that are in line with the Uppsala school. He classifies them in environmental characteristics and firm characteristics. Based on these two, he presents an international market selection (IMS) model based on segmentation.

These approaches all involve successive steps with choices in between whether to pursue with researching certain markets. This is a good way to save resources (time, manpower) because uninteresting markets get filtered in an earlier stage. Also, though the steps are not equal, they all work through the stages from easy accessible and top-level information towards more hard-to-reach and detailed information.



Author	Screening step	Determinants	Market/country attractiveness	Competitive strength
Johansson (2009)	1. Country Identification	Statistical data, level of development, cultural similarity, population.	Market size (total and segments)	Market share
	2. Preliminary Screening	Macro-level indicators (DESTEP), geographical distance, cost anticipation.	Market growth (total and segments)	Marketing ability and capacity (country specific know-how)
	3. In-Depth Screening	Market size, market growth, competitive intensity (SWOT), regulation, entry-barriers, company resources.	Buying power of customers	Products fit to market demands
	4. Final Selection	Company objectives, cost/revenue forecasts match resources, direct experience.	Market seasons and fluctuations	Price
Root (1994)	1. Preliminary screening	Consumer/user profile, market size estimate, market size indicators.	Average industry margin	Contribution margin
	2. Estimating industry market potentials	Top-down estimates, bottom-up estimates.	Competitive conditions (concentration, intensity, entry barriers, etc.)	Image
	3. Estimating company sales potential	Entry conditions, competition audit, distribution channels, consumer/user.	Market prohibitive conditions (tariff/non-tariff barriers, import restrictions, etc.)	Technology position
Hollensen (2011)	1. Selection of the relevant segmentation criteria	Consumer/user profile, market size estimate, market size indicators.	Government regulations (price controls, local content, compensatory exports, etc.)	Product quality
	2. Development of appropriate segments.	Entry conditions, competition audit, distribution channels, consumer/user.	Infrastructure	Market support
	3. Screening of segments to narrow down the list of markets/countries. Choice of target markets/countries.	General characteristics (geographic, language, political factors, demography, economy, industrial structure, technology, social organization, religion, education), specific characteristics (cultural characteristics, lifestyle, personality, attitudes, tastes and predispositions).	Economic and political stability	Quality of distributors and service
	4. Microsegmentation. Develop segments in each qualified country or across countries.	Standard market segmentation techniques (as: demographic/economic factors, lifestyles, consumer motivations, geography, buyer behaviour, psychographics, etc.).	Psychic distance (from home base to foreign market)	Financial resources
				Access to distribution channels

Table 4 - Dimensions of market/country attractiveness and competitive strength (Hollensen, 2011)

Table 3 - International market screening literature comparison



The determinants the theory provides as the necessary information are similar. The determinants can be subdivided into three categories where they are applicable (see Table 5). These categories are country (macro-level), market (meso-level) and company (micro-level). Similar determinants can then be clustered or joined, redundant determinants removed, and some terms can be disassembled into smaller parts. Where given in the same three books, the models per category and subcategory can be detected, the determinants can be placed as a research subject of a provided model and all brought on the same level by adding the factors the determinants consist of. You can see the result of this in Table 6.

Seen how much information the literature gives about them; the categories and subcategories can be seen as necessary information for market-entry. The determinants give direction to which information can be relevant in a particular subcategory, and the models give a way to find that information. This, however, is open for debate, because there are many more ways to find information than written in these three books. Certain contexts ask for more, less or different determinants and models.

The information the books provide can be extended to fill the gaps in Table 6. A small internet search provides applicable models (yellow in Table 6). The McKinsey 7S-model and business model canvas are useful for a company analysis. Customer journey mapping is a type of generative research which can be used for consumer/user research. A value proposition canvas can give insights into how a product matches with a user's needs and wishes. For product development and investigating product-market fit, you can use the value proposition canvas.

Category	Determinants
Country	Statistical data, level of development, cultural similarity, population, macro-level indicators (DESTEP), geographical distance, geographic, language, political factors, demography, economy, industrial structure, technology, social organization, religion, education, cultural characteristics, Business Monitor International, Euromoney, BERI, shift-share approach, demographic/economic factors, geography, market prohibitive conditions (tariff/non-tariff barriers, import restrictions, etc.), government regulations (price controls, local content, compensatory exports, etc.), infrastructure, economic and political stability, psychic distance (from home base to foreign market)
Market	Market size, market growth, competitive intensity (SWOT), regulation, entry-barriers, market size estimate, market size indicators, top-down estimates, bottom-up estimates, entry conditions, competition audit, attractiveness/competitive strength matrix (Table 4), distribution channels, consumer/user profile, consumer/user, lifestyle, personality, attitudes, tastes and predispositions, lifestyles, consumer motivations, buyer behaviour, psychographics, market size (total and segments), market growth (total and segments), buying power of customers, market seasons and fluctuations, average industry margin, competitive conditions (concentration, intensity, entry barriers, etc.), market share, product quality, market support, quality of distributors and service.
Company	Cost anticipation, resources, cost/revenue forecasts match resources, direct experience, financial resources, access to distribution channels, products fit to market demands, price, contribution margin, image, technology position, marketing ability and capacity (country specific know-how).

Table 5 - Categorized internationalization models from literature



Category	Sub-category	Determinants	Models	Category	Sub-category	Determinants	Models	
Country	Statistical data	Demographic factors	DESTEP-analysis	Market	Competitive conditions	Opportunities	SWOT-matrix	
		Economic factors	DESTEP-analysis, CAGE distance framework			Treats	SWOT-matrix	
		Social factors	DESTEP-analysis			Regulation	Price controls, local content, compensatory exports analysis	
		Technology factors	DESTEP-analysis			Entry-barriers	Porter's Five Forces	
		Ecologic factors	DESTEP-analysis			Entry conditions	Porter's Five Forces	
		Political factors	DESTEP-analysis, CAGE distance framework			Competition audit	Porter's Five Forces	
		Level of development	Capita per income			Concentration	Porter's Five Forces	
	Culture	Geography	Location, proximity, similarity analysis, CAGE distance framework			Intensity	Porter's Five Forces	
			Fluency level analysis			Market prohibitive conditions	Attr./comp. strength matrix	
			Business population characteristics analysis			Market size	Attractiveness/competitive strength matrix	
		Language	Religion			Customs and traditions analysis	Market growth	Attractiveness/competitive strength matrix
			Education			Economic potential of youth, literacy	Market seasons and fluctuations	Attr./comp. strength matrix
			Government regulations			Government publication research	Average industry margin	Attr./comp. strength matrix
			Infrastructure			Statistical comparison	Market support	Attr./comp. strength matrix
Culture	Psychic distance	Hofstede cultural dimensions	Consumer/user profile	Consumer research, journey mapping , value proposition canvas				
		CAGE distance framework	Personality	Consumer research				
	Cultural characteristics	Hofstede cultural dimensions	Attitudes, tastes and predispositions	Status symbol research, Consumer research, context mapping				
	Language	CAGE distance framework	Consumer motivations	Consumer research, journey mapping				
	Religion	CAGE distance framework	Buyer behavior	Consumer research, journey mapping				
	Values and attitudes	CAGE distance framework	Buying power of customers	Consumer research, journey mapping				
	Material elements and technology	CAGE distance framework	Products fit to market demands	Value proposition canvas				
Company	Products	Aesthetics	Price	Attr./comp. strength matrix				
		Education	Contribution margin	Attr./comp. strength matrix				
		Social institutions	Image	Attr./comp. strength matrix				
			Product quality	Attr./comp. strength matrix				
	Operations	Technology position	Technology position	Attr./comp. strength matrix				
		Strengths	Strengths	SWOT-matrix				
		Weaknesses	Weaknesses	SWOT-matrix				
Resources	Cost/revenue forecasts	Cost/revenue forecasts	Business model canvas					
	Distribution channels	Distribution channels	Internal analysis, business model canvas					
	Quality of distributors and service	Quality of distributors and service	Attr./comp. strength matrix					
Company	Products	Direct experience	Direct experience	Internal analysis, 7S-model				
		Financial resources	Financial resources	Internal analysis				
		Access to distribution channels	Access to distribution channels	Internal analysis, 7S-model				
		Marketing ability	Marketing ability	Internal analysis, 7S-model				
		Capacity (country specific know-how)	Capacity (country specific know-how)	Internal analysis, 7S-model , business model canvas				

Table 6 - Market-entry models and their (sub)categories, adapted from Johansson (2009), Root (1994) and Hollensen (2011)



Decision-making

In chapter two I explained why a MCDA decision-making method will be used. Now I establish how to construct such a decision model.

Decision model

Decision analysis is a tool to use when you want to minimize the risk involved in decision making. Rational actors will always choose the option with the highest profit (in the broadest sense).

MCDA decision-making involves three important steps (Agrawal, 2015).

1. Criteria (or attributes) need to be established that can be qualitatively or quantitatively compared or evaluated.
2. Stakeholders need to evaluate the criteria. This can be done on a qualitative or quantitative scale, as long as it shows relative desirability. This relative importance can be shown by, for instance, ranking (qualitative) or assigning weights (quantitative).
3. The decision method needs to be chosen. This method must take into account the evaluation of the criteria, and lead to an ordering of the alternatives.

This raises three questions when you want to construct a decision model:

1. Will the criteria be evaluated on a qualitative or quantitative scale?
2. Will the relative importance preference be qualitatively or

quantitatively specified?

3. What decision method will compare the alternatives based on the stated preferences?

Whether to use a qualitative or quantitative scale depends on the criteria that are evaluated. When the objectives are relative to other attributes, a qualitative scale would be a better choice. When the objectives for certain criteria are measurable, quantitative scales will offer an accurate result.

The relative importance preference depends a lot on the stakeholders' wish of how to deal with the result. For instance, is the result a weighted number to compare, or a ranking? The quantitative desirability will be more difficult to decide on than qualitative, because more (accurate) preference choices need to be made.

There are many different multi-criteria decision-making models available. A popular model that is easy to use and understand is the SMART-model (Multicriteriamodel - Systeemmodellering, n.d.). SMART stands for Simple Multi-Attribute Rating Technique. SMART is a good tool when used as decision support tool where the answer might not be finite (Rameshkumar Patel, Bhatt & Vashi, 2017).

Another easy-to-use model is the Score Card (Multicriteriamodel - Systeemmodellering, n.d.). This is basically an effect table, with criteria and alternatives. With colors, the utility of criteria for the stakeholder can be presented in the table. This makes the choices visually very expressive.

In Table 7 there is an example of the SMART-model and in Table 8 an example of the Score Card.



Application

The models suggested by both FocusCura and literature show qualitative and uncertain factors. This makes quantitative decision-making very hard to do. A good way to make decisions on a qualitative level is to compare it with a benchmark situation. In this case, this could be a comparison between countries or certain market segments. Also, while the BDD is not yet using decision models, the most simple model will be best to utilize. The SMART model and Score Card model both are useful for this purpose.

Criteria	Weight	Cookie A	Cookie B	Cookie C
Ingredients	3	0.10	0.50	1.00
Taste	2	0.40	0.00	0.00
Size	0.5	1.00	0.3	0.00
Weighted sum:		1.6	1.65	3
Preference order:		3	2	1

Table 7 - Example of SMART decision model

Criteria	Scale	Cookie A	Cookie B	Cookie C
Ingredients	H - N - U	Unhealthy	Normal	Healthy
Taste	G - A - B	Average	Bad	Bad
Size	mm ²	5	9	20

Table 8 - Example of Score Card decision model



"A good decision is based on
knowledge and not on numbers"

- Plato



Form

The form of the decision aid is what combines the internationalization process and decision-making into a useable product. What I research here is what criteria there are for the form. Besides being compatible with the internationalization model and decision-making models, the criteria for the form solely depend on the preferences of the BDD of FocusCura. They revealed this during a generative session.

In the session they reflected on their daily activities and the decision tools they use during their work and private life. They clustered these tools and reflected on their pro's and cons. These were also clustered to finally represent five values of which they all felt a decision tool should comply to (see Fig. 21 and Fig. 22). These criteria are:

- Direction; the decision aid must point in the right way towards the goal that needs to be achieved.
- Together; the decision aid must enable teamwork within the BDD and the rest of FocusCura.
- Overview; the decision aid must provide an overview of the activities that need to be done.
- Visual; the decision aid must present information visually and encourage working visually.
- Simple; the decision aid must be very simple to use and understand.

These criteria form the basis of the final concept choice.

Next to the criteria, the BDD also expressed their vision for the decision aid design: it should be an **experience** with **head, heart and hands**. This should be interpreted as their wish for the decision aid to not only be rational, but it should also be intuitive and leave room for creativity. This vision serves as a guideline for concept ideation and development.

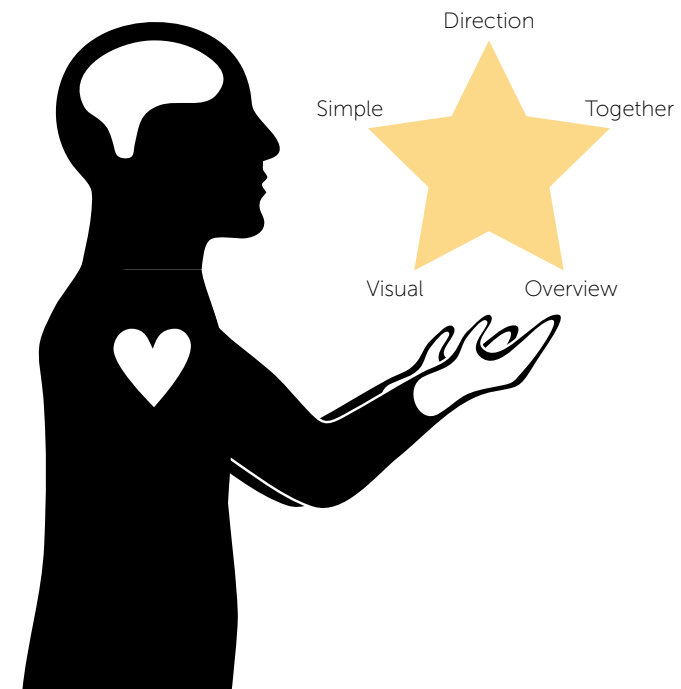


Fig 21 - BDD criteria: An experience with head, heart and hands

Conclusion

The essential information I have collected bridges the knowledge gap for the decision aid design. The decision aid will be well founded in literature and connect well with the needs and wishes of the BDD.

Design criteria



- The decision aid needs to be repeatable for market-entry in multiple countries.
- The decision aid should not require the use of many resources.
- The decision aid should address the needs of the BDD.
- The decision aid needs to contribute within the constraints of the Lighthouse Strategy.
- The decision aid needs to follow a structure that fits the BDD's daily activities.
- The BDD needs the internationalization process to have a more experimental and iterative approach.
- The BDD needs to get information bottom-up from stakeholders
- The BDD needs to develop a value proposition and generate customer validated proof early in the internationalization process.
- In the internationalization process, network and knowledge development need to happen continuously.
- The market-entry actions should happen in successive steps targeting first easy-accessible and top-level information to more hard-to-reach and detailed information, to save resources.
- The market-entry actions should happen within the categories: country, market and company.
- The market-entry actions for the category 'country' should contain statistical data and culture.
- The market-entry actions for the category 'market' should contain competitive conditions, attractiveness and consumer/user.
- The market-entry actions for the category 'company' should contain

products, operations and resources.

- The decision-making method must be chosen dependent on the criteria being evaluated (qualitative or quantitative).
- The relative importance of the decision criteria must be determined by the preference of the stakeholders.
- The decision aid form needs to be compatible with the internationalization model and decision-making models.
- The decision aid form criteria need to be based on the preferences of the BDD.
- The decision aid should give direction, enable teamwork (together), provide overview, be visually focused and simple to use and understand.
- The decision aid design should be an experience with head, heart and hands.

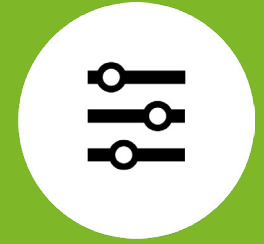
Insights



- FocusCura has collaborations with Apple, who help them with an international network.
- Internationalization includes a company starting business in a market across national borders.
- Internationalization is a process that provides structure within a certain strategy.
- The BDD is responsible for internationalization within FocusCura, and thus the internal 'client' and user.
- FocusCura wants to internationalize to achieve company growth.
- Models (actions) provide information upon which to make decisions.
- The internationalization process used to happen based on network and personal experience.
- Internationalization decisions can still be made on the spur of a moment.
- FocusCura has the ambition to work more according to the principles of 'agile' and 'lean'.
- Whether to use a qualitative or quantitative scale depends on the criteria that are evaluated
- The SMART decision model is a good tool when used as decision support tool where the answer might not be finite.
- The Score Card decision model makes the choices visually very expressive.



4. Design



“Creativity is just connecting things”

- Steve Jobs



Introduction

Do you need help decorating? Just ask Mrs. de Vries. Do you want the best apple pie in the country? Visit Mrs. de Vries in Groningen. Do you want a new hat? Mrs. de Vries will hand-knit you one. Everyone wants Mrs. de Vries to be their Sinterklaas or Secret-Santa when it comes down to the best present. Even though her originality is unquestionable, she herself does not think she is that creative. "I just get random things and fabricate something", she always says. But she knows darn well that is not true. She follows a meticulous process that she taught herself when her two boys were growing up.

When her youngest kid was seven and needed to craft a miniature car model for a school project, she tackled it as followed. First she requested the criteria provided by the school. Together with her kid she went over them, and she tried to figure out what he would like to make. They brainstormed some ideas, and started to look for similar models in library books. This gave ideas for an original model, that she decided to draw out in detail for her son. He loved the Ferrari-looking model, so they started to shape that one in wood. When they were done building, they were pretty happy. Though, when they tried to roll the car, it did not work yet. A little tweak on the wheels helped a lot. The model was ready and both were proud of their joint achievement. The best part of this: the smile he had on his face when he came back with the first price. Mrs. de Vries will never forget that.

This chapter goes through the same steps, but then for the design of a decision aid. I gather the criteria collected in previous

chapters in one design brief. These are requirements the design minimally has to meet. Configuration of the internationalization and decision-making part in previous chapter result in a final process and decision model to come to the market-entry decision. Ideation with the BDD and fellow students gives direction towards concepts ideas, which point towards ways how to implement the internationalization process and decision model. I score these concept ideas on criteria uncovered from the BDD, and I work out the most promising one to a full concept. I test this concept with the BDD and make the necessary adjustments for a final decision aid design.

They get a smile on their face from the design as well.



Synthesis

The decision aid design is a synthesis of the three aspects researched in the previous chapter: internationalization, decision-making and form. For the internationalization, choices need to be made with regards to the definitive process and actions to follow. The decision-making model needs to be chosen and configured with the internationalization actions. Then in conceptualization, alternatives are developed for the form.

The steps in this synthesis are as followed:

1. Construct internationalization process model.
2. Construct internationalization actions model for market-entry.
3. Construct a decision model with the internationalization actions as criteria.

1. Internationalization process model

The Lighthouse process, envisioned process and internationalization literature need to be synthesized to a single standardized process I can base the decision aid design on. I call this the Lumen internationalization process (Fig. 23).

Determination

Mainly the constraints in point 2.2 of the design brief are the basis of the synthesis of the internationalization process. Because of the intentions of the BDD (2.2.1, 2.2.2, 2.2.2.1), I take the envisioned process as the basis of the Lumen process. The steps in the first phase (analyze, experiment, develop) are collected in a single term that covers these steps (Explore). Also, a feedback loop is added as a result of the wish of the BDD to return to a previous step after a go/no-go decision. The 'change' and 'state' concepts from the Uppsala model are included to cover the continuous network and knowledge development (2.2.3).

Content

This central beam contains the main phases in the internationalization process:

1. Explore, investigate the initial conditions for internationalization.
2. Prove, provide evidence of a working value proposition.
3. Organize, have all operations figured out.
4. Execute, launch a full scale project.



Each of these phases have particular actions, that end in a go/no-go moment. A go/no-go moment is an opportunity decision moment. At these moments, the BDD needs to make a decision on whether to act on the opportunity to take the next step. Whenever they have decided to go to the next step, but miss information from the previous step, they can skip back a step to get that information.

From the envisioned process, you can determine the decisions the BDD needs to make for the go/no-go moments. In order, these are:

1. Should we enter that particular foreign market?
2. Have we proved that our value proposition will work in this market?
3. Are all internal and external conditions organized for a full product launch in this market?

The answers to these questions are influenced by the results of the actions taken in each phase, and the 'change' and 'state' variables. The 'change' light beam at the top has a continuously growing 'learn' variable. It interacts with the 'knowledge' variable in the 'state' light beam at the top. At the bottom, the same applies, but then with the 'change' variable 'building relations' and 'state' variable 'network'. All variables affect the phases in the centre in such a way that the actions in each phase can contribute positively or negatively to the variables.

You can find the 'analyze' and 'experiment' steps from the envisioned process in the more top-level 'learn' and 'knowledge' variables. This is, because this needs to happen continuously in every phase, and not just in phase one. You can also see them implicitly represented in the 'explore' phase, because you need to

explore what to investigate. Also 'develop' is implicitly represented there, when you create a value proposition based on knowledge and network. Based on the Uppsala model, I added the 'build relations' and 'network' variables to allow for network opportunities that come from networks as well.

To provide an answer to the research question how to decide whether FocusCura should enter a particular foreign market, I need to design a decision aid for the 'explore' phase in this process (the first phase). The go/no-go moment in the end of this phase should answer exactly that research question. The actions synthesis therefore focus only on the first phase in the Lumen process.

Visual structure

In Fig. 23, I use the visual structure of the Lighthouse process, with light beams coming out of a Lighthouse, because it is recognizable for FocusCura as a metaphor within the Lighthouse strategy. The 'change' and 'state' concepts from the Uppsala model are on both sides of the central light beam. Furthermore, the expanding beams represent the expanding involvement in a particular market.



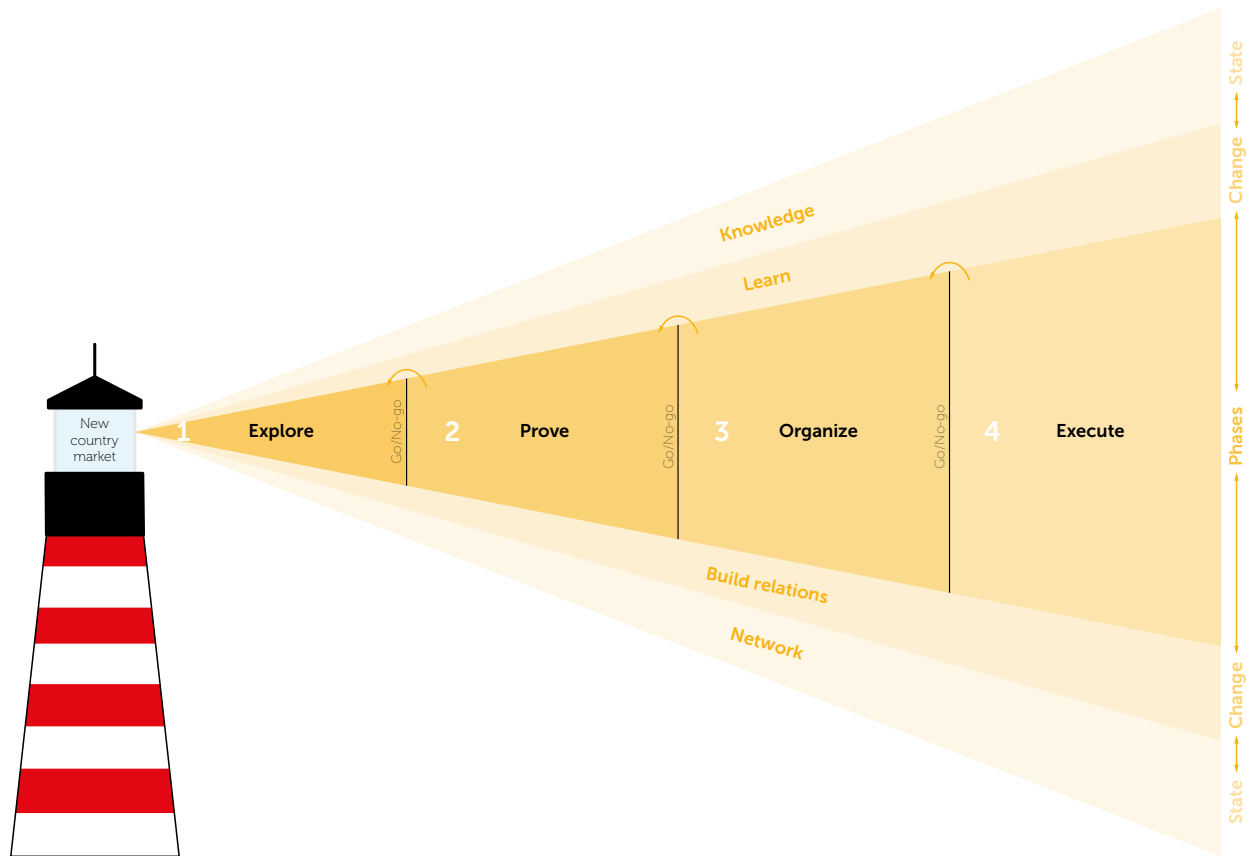


Fig 23 - Lumen internationalization process

Lumen is the unit for light power. It is the total amount of light a source emits per time unit in any given direction. This can be very focused, like a laser, or dispersed, like a free glowing lightbulb.

(Adapted from "Lichthoeveelheid: lux of lumen?", 2018)

2. Internationalization actions model

The researches of the internationalization process, in the previous part, give clues to the actions the BDD needs to undertake in the first phase of the Lumen process (Fig. 24). I first collect all the actions for internationalization that come mainly from the Lighthouse process document and the generative session about the present and future internationalization process. Market-entry literature indicates which actions are relevant for the market-entry decision. Mainly the constraints of point 2.3 of the design brief apply to this synthesis.

The actions I refer to in this part are the same as the 'models' referred to in the 'Decision aid' chapter. They are the actions that answer subquestions of the main research question.

Determination

The generative session and Lighthouse strategy document provide actions on different abstraction-levels. I collected and conjoined these in Table 9. I divided them according to their mentioned goal, what research could be done, how they could be done and what deliverables they can provide. This gives a good indication of what actions the BDD themselves are known with, and with what actions they see themselves make the market-entry decision.

You can see that the list of deliverables for problem/opportunity finding is a lot bigger than getting market feedback. This has to do with the familiarity of the BDD with these researches. Also, there are actions that are specific to the markets the FocusCura is in. For instance, the deliverables healthcare access, healthcare level, eHealth level and healthcare system are mentioned. Because

Phase	Goal	What	How	Deliverables
Explore	Find problem or opportunity that fits the FocusCura mission and vision	- Desk research - Field research	- Reports - Interviewing	- DESTEP - Finances - Healthcare access - Capacity - Organisation - Healthcare level - Market potential - eHealth level - Local culture - Localisation requirements - Opportunity size - Healthcare system - Localisation requirements - Competitors - Stakeholders - Reimbursement
	Positive feedback from the intended market	- Contextual research - Customer insights	- Bottom-up approach	- Barriers - Stimulators - Case studies
	Find product/service fit with the intended market	- Value proposition - Business starting - Network building	- Product adjustments - Business modelling	- Product/service - SWOT - Business model canvas - Partner presence - Partner search - Business case - Pricing

Table 9 - Explore-phase actions from BDD generative session



of their specific importance to the company, they need to be investigated using one of the models.

Furthermore, the rest of the mentioned deliverables can be directly or indirectly found in Table 6 of the previous chapter. Because of its completeness, Table 6 serves as a grounded basis to get the necessary information for the market-entry decision. The Table 9 content is applied to the same categories to make sure the information the company wishes to know is incorporated.

Content

Categorization happens according to criterium 2.3.2. This means all actions fall under the following categories and their subcategories:

1. Country; statistical data and culture.
2. Market; attractiveness, competitive conditions and consumer/ user.
3. Company; products, operations and resources.

Also, according to criterium 2.3.1, successive steps need to be followed, from easy-to-access top-level information to hard-to-reach detailed information. A logical choice is made to go through these steps from macro- to meso- to micro-level, which respectively matches with country, market and company. However, in some cases critical info could be very impactful or easy accessible, in a different successive order. For instance, if there would be large budget cuts within the company, it is clear that there is no financing available for market-entry. Then the rest does not need to be investigated, and this will save resources. This means the mentioned successive steps should function as a guideline instead of a hard rule.

The determinants and deliverables mentioned in Table 6 and Table 9 can be covered by models within the (sub)categories. These can be freely chosen. In this case, ten models cover the information needed to make the market-entry decision:

- DEPEST analysis
- CAGE distance framework
- Hofstede cultural dimension
- Attractiveness/competitive strength matrix
- SWOT matrix
- Porter's five forces
- Customer journey
- Value proposition canvas
- Business model canvas
- 7S model

Within these models there are determinants that need to be researched. These determinants can also have sub-determinants (not given). To provide the BDD with solid examples, the determinants for these models are given in Table 10.

Visual structure

The visual communication of the Explore-phase zooms in on the first part of the Lumen process (Fig. 24). This is recognizable for FocusCura. Subdivisions in the lightbeam point to the categorization within this phase and their subcategorizations are depicted there as well. While the actions themselves are not fixed, they are not displayed in the figure. Furthermore, loops run through the four variables (learn, knowledge, build relations and network) to emphasize they are involved.



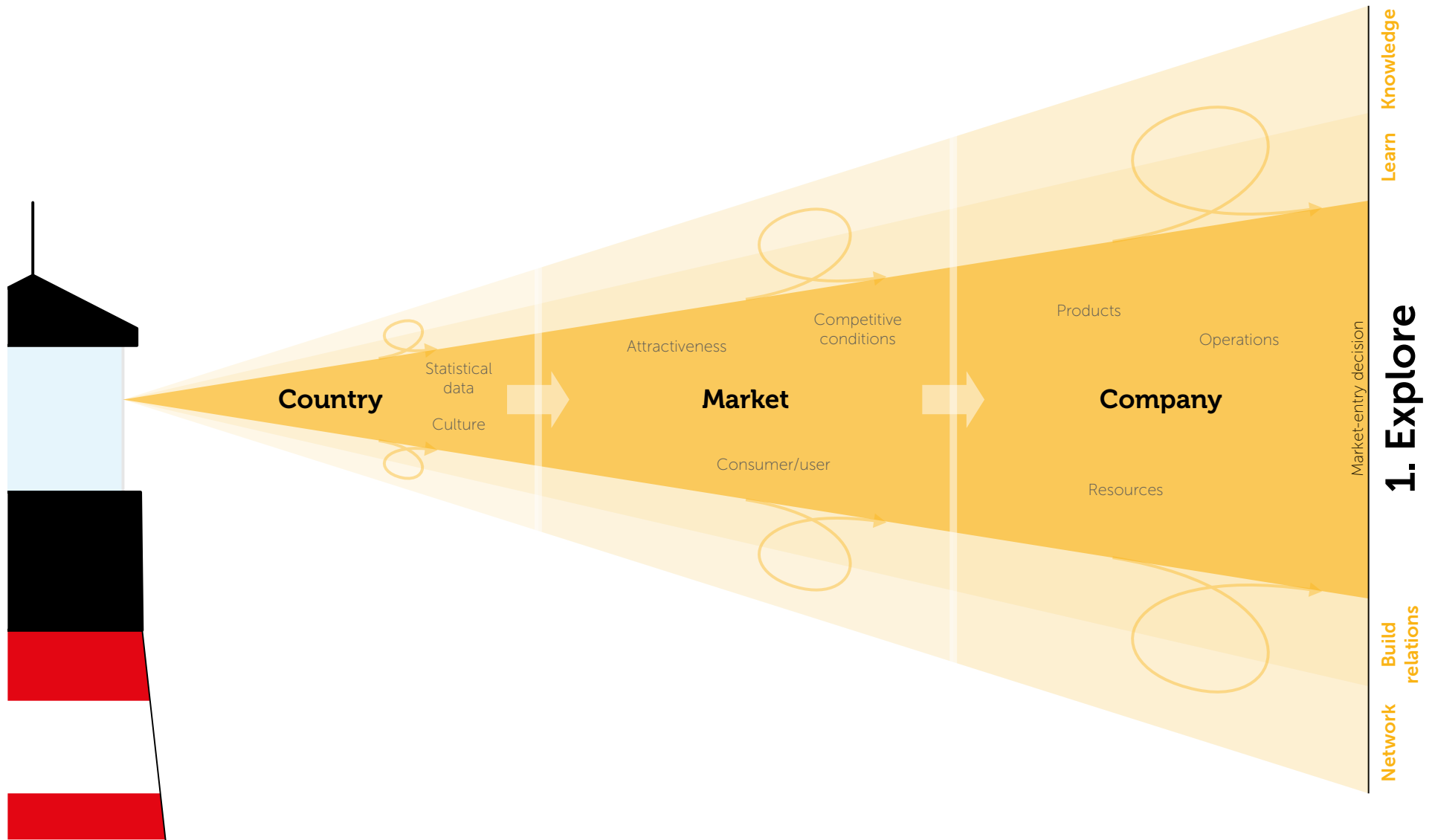


Fig 24 - Explore-phase of the Lumen process



Subcategory	Model	Determinants	Subcategory	Model	Determinants
Statistical data	DEPEST	<ul style="list-style-type: none"> - Demographic - Economic - Political - Ecological - Social-cultural - Technological 	Competitive conditions	Porter's Five Forces	<ul style="list-style-type: none"> - Threat of new entry - Supplier power - Buyer power - Threat of substitution - Competitive rivalry
Statistical data, culture	CAGE framework	<ul style="list-style-type: none"> - Cultural - Administrative - Geographic 	Competitive conditions, Operations	SWOT	<ul style="list-style-type: none"> - Opportunities - Threats - Strengths - Weaknesses
Culture	Hofstede	<ul style="list-style-type: none"> - Economic - Power distance - Individualism - Masculinity - Uncertainty avoidance - Long-term orientation - Indulgence 	Consumer/user	Customer journey	<ul style="list-style-type: none"> - Persona - Context - Timeline - Steps - Profile - Pain points and highlights - Evidence
Attractiveness, competitive conditions	Attractiveness/competitive strength matrix	<ul style="list-style-type: none"> - Market size - Market share - Market growth - Marketing ability and capacity - Buying power of customers - Products fit to market demands - Market seasons and fluctuations - Price - Average industry margin - Contribution margin - Competitive conditions - Image - Market prohibitive conditions - Technology position - Government regulations - Product quality - Infrastructure Market support - Economic and political stability - Quality of distributors and service - Psychic distance - Financial resources - Access to distribution channels 	Consumer/user, products	Value proposition canvas	<ul style="list-style-type: none"> - Gain creators - Pain relievers - Customer jobs - Gains - Pains - Value proposition
			Products, operations, resources	Business Model Canvas	<ul style="list-style-type: none"> - Customer relationships - Channels - Customer segments - Key actions - Key resources - Key partners - Cost structure - Revenue streams
			Resources	7S model	<ul style="list-style-type: none"> - Structure - Strategy - Systems - Skills - Staff - Style - Superordinate goals

Table 10 - Total models and determinants per subcategory



3. Decision model

In the decision model, the elements of Table 10 are processed (Fig. 25). You can see the hierarchy between the different levels (decision, categories, subcategories, models, determinants) from right to left. From top to bottom, there is no hierarchy. The whole looks most like a decision tree (Levy & Yoon, 1995), in which you could apply both the SMART model and the Score Card.

If the BDD wants to apply the SMART model, they need to score each element in this model on a certain weight. These weights need to be established in consultation with each other, by comparing the elements at each level. They need to compare and weigh the determinants per model, then the models per subcategory, the subcategories per category and last the categories for the market-entry decision. This is a very difficult and time-consuming activity, especially with the overlapping elements connecting the models with the subcategories, and with qualitative information to measure.

If the BDD wants to apply the Score Card model, they need to establish a scale on which they score the elements of the model relative to each other. For example, this could be: good/average/bad, ++/+/0/-/-- or 5/4/3/2/1 (not as weight, but as relative score). Furthermore, you can give a corresponding color to the score, to make it visually expressive. The most logical option: green is positive, yellow average, red is negative. This is a method also used by the CBS when scoring qualitative indicators (CBS presenteert voor het eerst cijfers over kwaliteit van leven, 2018), . They need to compare and appoint a score to the determinants per model, then the models per subcategory, the subcategories per category and

last the categories for the market-entry decision.

Because the SMART model is too complex to apply in this situation, I recommend to use the Score Card as decision method in this model. Further examples and implementations will therefore only show the Score Card method.



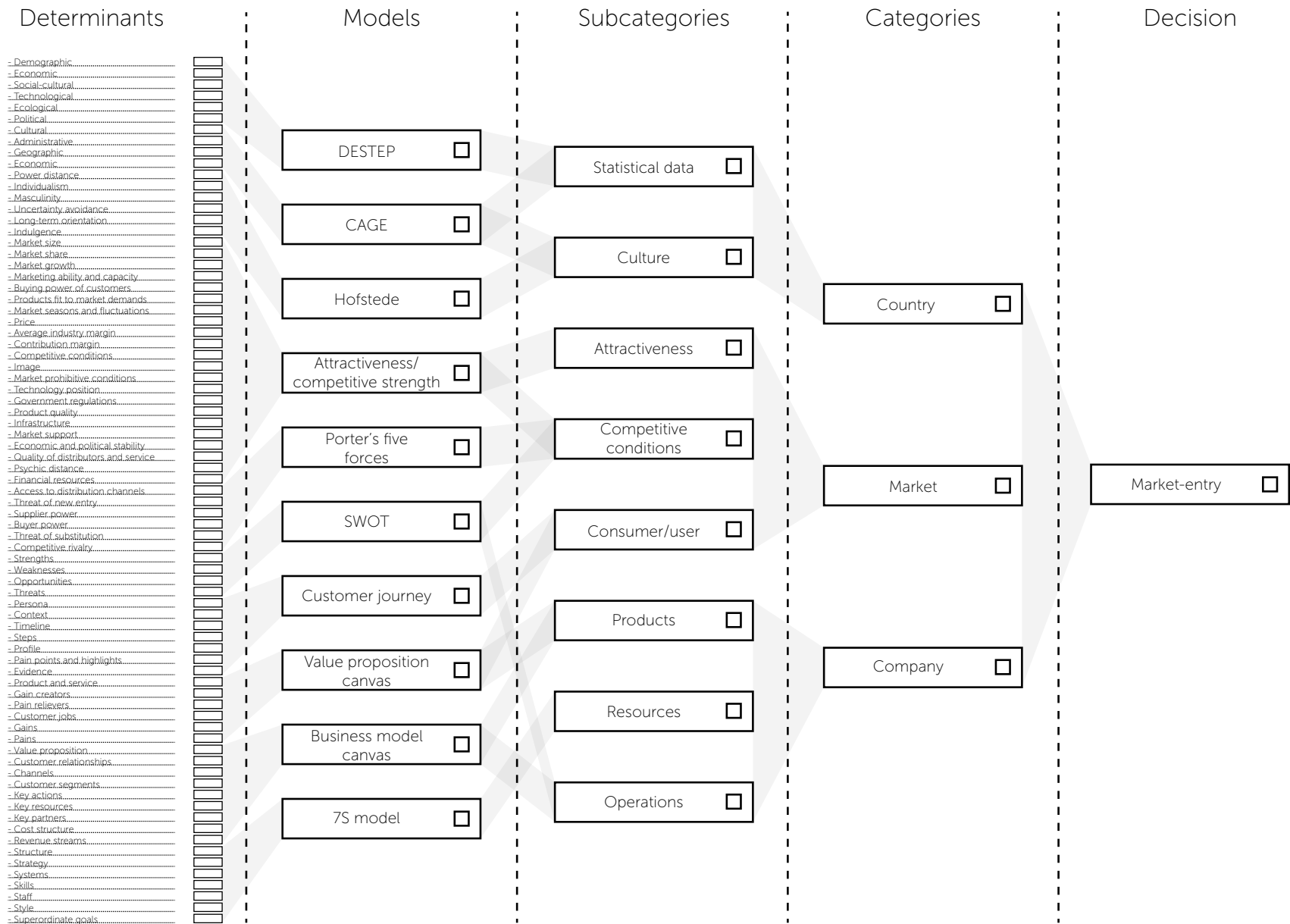


Fig 25 - Decision model for market-entry



Design brief

The design brief consists of the initial problem statement and assignment, the design criteria from the previous chapters, and the expected deliverables. This is the starting point for the development of the decision aid. The final design at least needs to meet the criteria mentioned in this brief.

Problem statement

FocusCura is not always making well substantiated decisions about taking steps abroad.

Design statement

Develop a decision aid which supports FocusCura to structure their internationalization decision-making process.

Constraints

The design criteria from previous chapters are the constraints for the design. They focus on a few aspects: decision aid, internationalization, decision-making and form.

1. General

- 1.1 The decision aid must encourage information gathering.
- 1.2 The decision aid needs to structure information.
 - 1.2.1 The decision aid must enable FocusCura to validate their internationalization decisions.
- 1.3 The decision aid must at least be able to support a market-entry decision for the German personal alarms market.
 - 1.3.1 The decision aid needs to be repeatable for market-entry in multiple countries.
- 1.4 The decision aid should not require the use of many resources.
- 1.5 The decision aid should address the needs of the BDD.
- 1.6 The decision aid needs to follow a structure that fits the BDD's daily activities.

2. Internationalization

- 2.1 General
 - 2.1.1 The decision aid needs to contribute within the constraints of the Lighthouse Strategy.
- 2.2 Process
 - 2.2.1 The BDD needs the internationalization process to have a more experimental and iterative approach.
 - 2.2.2 The BDD needs to develop a value proposition and generate customer validated proof early in the internationalization process.
 - 2.2.2.1 The BDD needs to get information bottom-up from stakeholders
 - 2.2.3 In the internationalization process, network and knowledge development need to happen continuously.



2.3 Actions

2.3.1 The market-entry actions should happen in successive steps targeting first easy-accessible and top-level information to more hard-to-reach and detailed information, to save resources.

2.3.2 The market-entry actions should happen within the categories: country, market and company.

2.3.2.1 The market-entry actions for the category 'country' should contain statistical data and culture.

2.3.2.2 The market-entry actions for the category 'market' should contain competitive conditions, attractiveness and consumer/user.

2.3.2.3 The market-entry actions for the category 'company' should contain products, operations and resources.

3. Decision-making

3.1 The decision aid needs to give the users an experience of support in their decision-making.

3.2 The decision aid should be based on a multi-criteria decision analysis framework.

3.3 The decision aid result should show consistency in the evolution of the decision process.

3.4 The decision aid should take into account the user's value systems.

3.5 The decision-making method must be chosen dependent on the criteria being evaluated (qualitative or quantitative).

3.6 The relative importance of the decision criteria must be determined by the preference of the stakeholders.

4. Form

4.1 The decision aid form needs to be compatible with the internationalization model and decision-making models.

4.2 The decision aid form criteria need to be based on the preferences of the BDD.

4.2.1 The decision aid should give direction, enable teamwork (together), provide overview, be visually focused and simple to use and understand.

4.2.2 The decision aid design should be an experience with head, heart and hands.

Deliverables

- A decision aid design
- A working model of the decision aid design



Conceptualization

With the design brief and synthesis of the decision model, I can start conceptualizing a solution. This starts with generating as much ideas as possible that fit the brief and solve (parts of) the problem. Then these ideas are clustered to form concept ideas, that can solve the problem completely. The BDD gives their main criteria for the design, and based on that I can choose the best concept to develop further.

Ideation

In two sessions I generated ideas with the BDD and fellow students to get original solutions. Details of these sessions can be found in Appendix XXX. In Fig. 26 is a sketch summary of the main ideas that came from those sessions. I clustered and developed the (partial) solutions that I viewed as most promising into more extensive concept ideas.

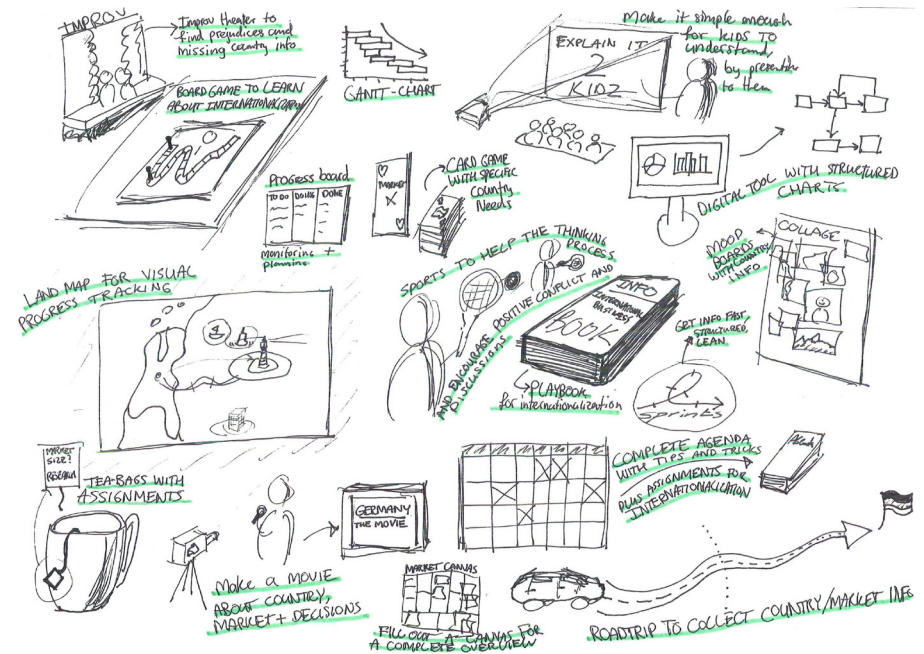


Fig 26 - Ideation summary

Concept ideas

The following concept ideas were selected and worked out further. All at least fit the criteria mentioned in the design brief.

Card deck

Solution: A deck of playing cards with prints that are suggestions of determinants to find, and in which model they can be used (Fig. 27). This helps the BDD with the information they need to gather. The cards are sorted in three categories: country, market and company. The determinants and models are the ones mentioned in Table 10.

Context: The BDD uses these cards in two joint meetings where they need to discuss the opportunities in a certain (international) market. Furthermore, they can be used when an individual researches determinants and needs inspiration for what information still to collect.

Use: In two meetings the cards need to be used. In a first meeting the BDD discusses the cards together by going through them one by one. They decide if the determinant is relevant and/or requires specific subdeterminants to take into account. Also, they choose if the model mentioned on the card is usable for them, or another model should be used, according to their liking. Blank cards are provided for them to add determinants of models to the deck. If they have gone through all of them, they divide them between the members to investigate. They plan a second meeting where everyone brings the results of their research. Again they go through them one by one, and score them according to the decision model in Fig. 25, by placing the cards on the table. If the information is complete, they can then make the market-entry decision.

CARD DECK

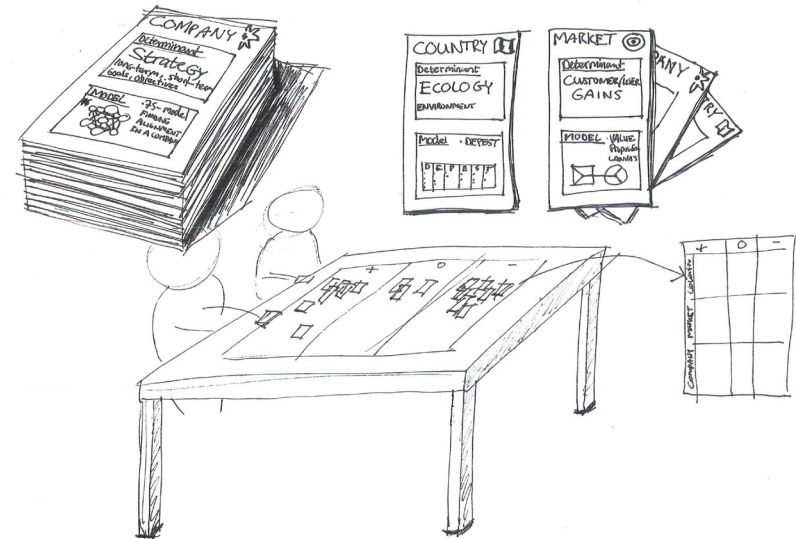


Fig 27 - Card deck concept idea

Lighthouse game

Solution: A board game (Fig. 28) in which each player represents either the company, market or country. It contains cards and assignments related to the market-entry decision. There is a Lighthouse as a trophy for the winner of the game.

Context: Three members of the BDD play this game when they want to make an international market-entry decision.

Use: The 'company' player needs to convince the other players that



the company fits them, by collecting as much information from the 'country' and 'market' player. In turn, these will fire back questions to check if the company is ready for it. If the company player succeeds in positively answering the most important questions, they will have a positive market-entry decision. If there is not enough information to answer some questions, or the information is negative, they might come back later to finish the game.

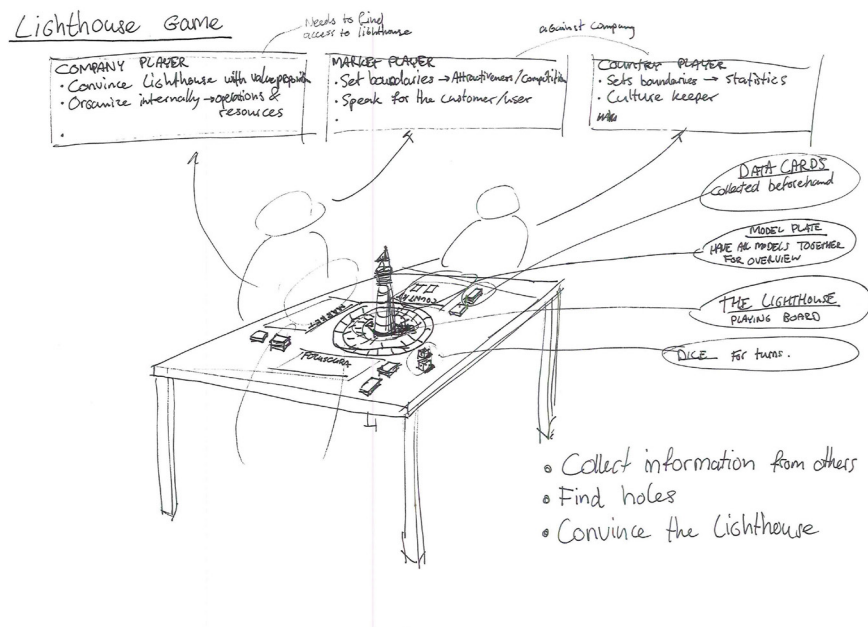


Fig 28 - Lighthouse game concept idea

Market-entry canvas

Solution: An A3 paper canvas (Fig. 29) with a layout that follows the content of the Explore-phase of the Lumen process (Fig. 24). It has a framework with four segments: country, market and company in which the subcategories and models can be drawn, and score card where the decision model has a place.

Context: The market-entry canvas can be used individually and in team meetings. Also, it can be used whenever it is necessary to communicate with other stakeholders within the company.

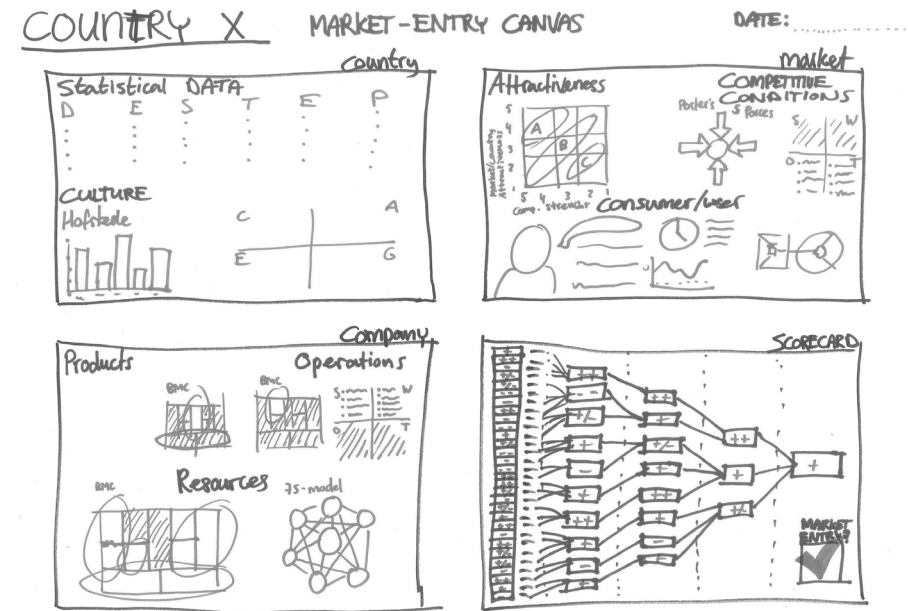


Fig 29 - Market-entry canvas concept idea

Use: A member of the BDD can individually gather data and fill out the models on the canvas. Data can be collected separately, for instance on a computer, then collected in a model on the canvas. The data collection can also be done jointly, with different team members researching different parts. Then in a joint meeting, the canvas can be used to communicate the findings, and together they can decide on the scales to use and the scores to give. At the end of the meeting, consensus can be achieved on the market-entry decision. After that, the canvas can be used to inform/convince others, like the board of directors.

Whiteboard collector

Solution: A customized whiteboard with a framework that consists of 'country', 'market' and company, that can be used to collect and process data, by sticking notes to it or making drawings on it (Fig. 30). This helps teamwork within BDD, by evoking research and communicating openly about it. Also, with enough data, the scores can be drawn on the board.

Context: The board needs to hang in a place at the office where it is visible and evokes a response. The data collection can happen individually, but is best with the whole team because discussion can take place.

Use: In a day or daypart a lot of data can be found jointly. This could, for instance, be online or by collecting within the company. The information that is more hard-to-reach can be collected individually and added to the board. When all information is on the board, a meeting should be planned with the whole team to score the findings.

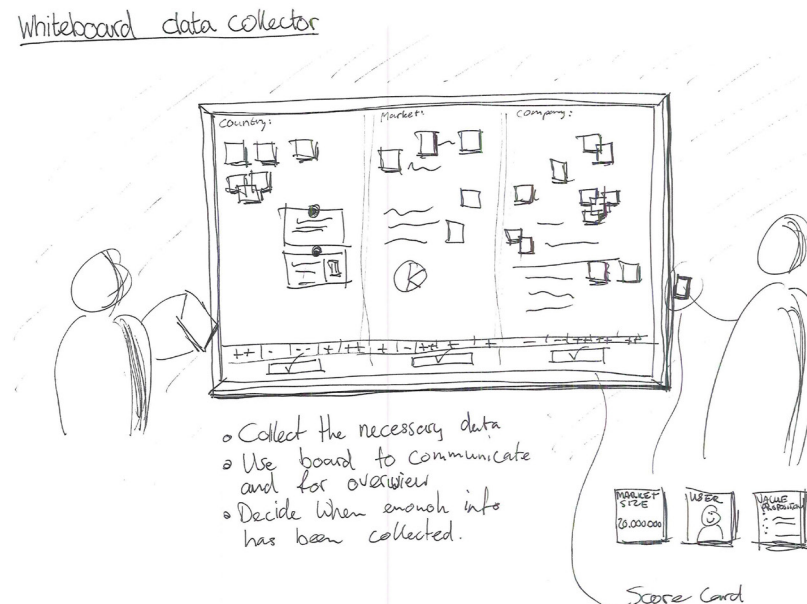


Fig 30 - Whiteboard data collector concept idea

Market-entry agenda

Solution: A booklet in which you can keep track of your calendar, but also gives information about internationalization and triggers to collect information for a market-entry decision. Besides a functional agenda, it has space for drawings and tips for which researches to find where. The decision model is also incorporated.

Context: The agenda will be used daily and individually. In a joint meeting, the findings can be shared with the rest of the BDD to come to the market-entry decision.



Use: Every day there is a small assignment to do or think about. This could be for instance: 'What is the population of country ...?'. This triggers to collect information. Every week, the agenda asks to update a collection of the information in the back. This forms the basis of a joint meeting with the BDD to discuss the results, and as main communicator to the rest of the company.

Market Entrygenda

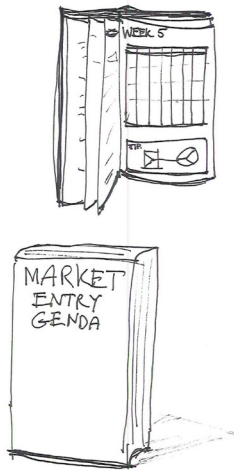


Fig 31 - Market-entrygenda concept idea

Concept choice

Based on a comparison of the concept ideas, I score the concepts based on how well they comply to the BDD criteria, on one-to-five scale radar plots (see Fig. 32).

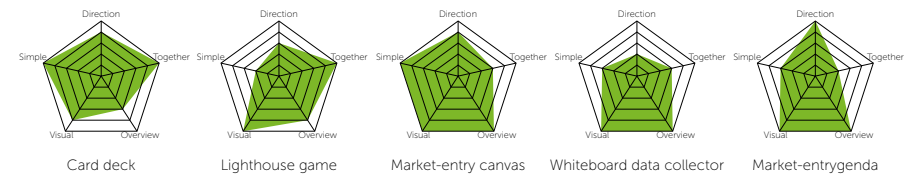


Fig. 32 - Concept idea score for market-entry canvas

Card deck: Having a lot of cards is not good for the overview, and does not evoke visual working. It is however a simple solution that encourages working together.

Lighthouse game: To work, it has to be either really fixed, or elaborately put together. This makes it score low on simpleness and direction. It is great to work together visually and playfully.

Market-entry canvas: It is challenging to work together with one canvas, but when the information is shared it gives great visual overview. It also is a simple and recognizable way of working.

Whiteboard data collector: Scores great on visuality and overview, because it is present on the work floor. However, it does not necessarily give direction for market-entry.

Market-entrygenda: When followed meticulously, this is a great support tool, but it is complicated to keep using and is a very individual tool.

The market-entry canvas on average scores best, so is the choice to further develop. Elements of the card deck could also be integrated, to add more togetherness to the design.

Concept development - First iterations

I develop the decision aid concept further. In the following part, I explain details of the concepts first iteration through the design choices and a user scenario.

Design choices

I made some design choices to improve the concept idea, to make it into a total decision aid concept.

First, I integrate the use of market-entry cards (previously presented as the card deck concept idea). These cards serve as boundary objects (Carlile, 2002). This way the experience will be more with head, heart and hands. The cards are an extra support to the market-entry canvas, because it serves more as inspiration for information collection than that it helps make the market-entry decision. This has consequences for the use context as well, which will become clear in the user scenario.

Secondly, to make sure teamwork is really enabled, scoring the elements on the canvas should always be done together. The session plans in which the decision aid is used will therefore be explained.

Lastly, I consider the already established models and determinants fixed. This is different to what was mentioned earlier, that the BDD could add or removes certain elements themselves, according to what they think is relevant. Fixing these elements keeps the decision-making process easy. Also, when they investigate multiple markets, the results will be comparable. Tests should show if this fixation gives the right results or not.

User scenario

This scenario explains the usage of the decision aids first concept iteration, which involves the market-entry canvas, together with the market-entry cards.

1. Via network there is knowledge of a potential interest of a certain market in a certain country.
2. The BDD director hears about this, and wants to investigate if they should make a market-entry.
3. The BDD director plans a one-hour meeting with the department to discuss this.
4. Before the meeting, the director grabs the market-entry cards and takes them with him.
5. During the meeting, they first need to check all boundary conditions before starting the market-entry investigation. For instance, how much time they have for it.
6. If all boundary conditions are set, the director gives a short recap of their process (from the Lumen process to the decision-making).
7. Next, the market-entry cards get on the table, and they get divided amongst them. First only the country cards.
8. They plan a date for a two-hour session and agree to have finished the information gathering by then.
9. The BDD all go their own way to get the information on their cards.
10. Informally, they get into contact with each other when there are (small) questions.
11. A few days before the deadline, the director check in with everyone to make sure all information is available before the session. If not, he estimates the importance of the missing information. If it is crucial, the session gets rescheduled.



12. On the day of the session, the director prints a market-entry canvas on A3, and brings it with him.
13. The session starts with an fun energizer to have everyone ready.
14. The director explains the planning.
15. They start with organizing the cards per model.
16. Next, they jointly start to go over the information and discuss it.
17. Then they put the information in a model on the canvas.
18. If everything is on the canvas they can start the decision-making process. This begins with the scale, which they choose to be ++/+/0/-/--, corresponding with the colours green/light green/yellow/light red/red.
19. They discuss each determinant, model, subcategory and category within the decision model.
20. The decision is positive, so this means they can repeat from

step 8 for 'market', and then repeat for 'company'. If it were negative, they now know why, and should pay attention if the situation changes.

21. During the last session where the company information is scored, they have all the information to make the market-entry decision. Which in this scenario is positive.
22. The director takes the canvas to the board meeting, as proof that they should make a market-entry.
23. The director also takes it to conversations with other stakeholders, to show why they want to do it.
24. The cards and canvas get stored away for whenever someone wants to check them again.

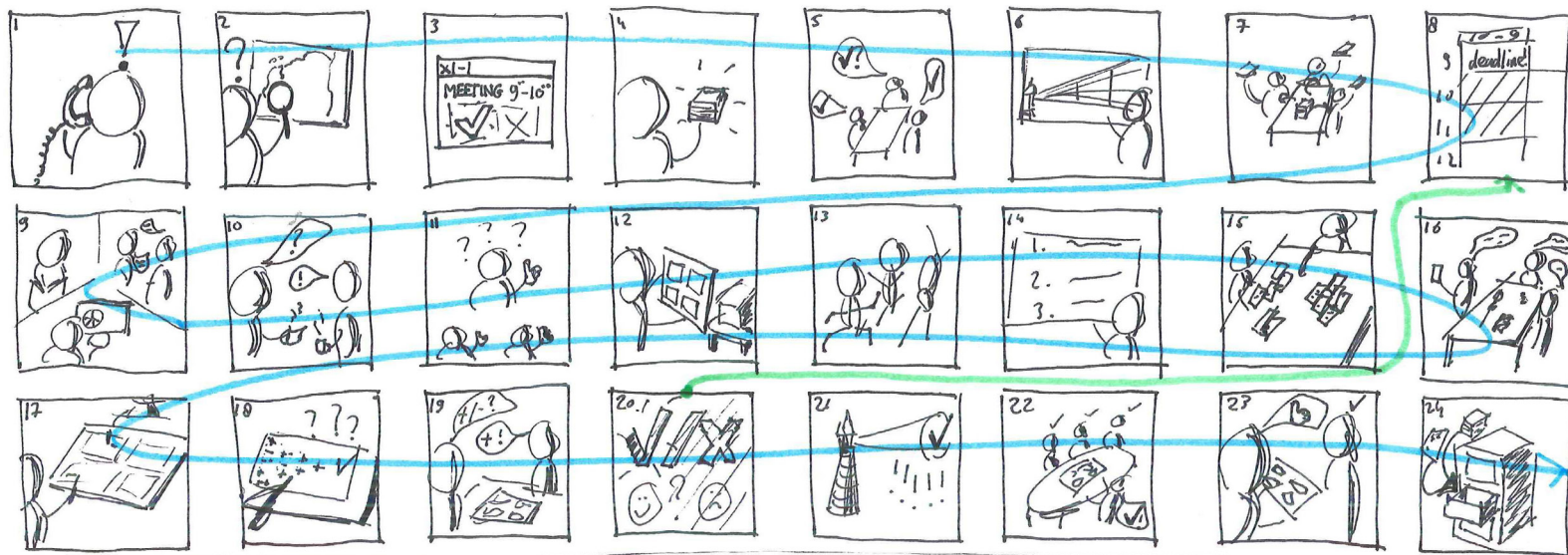


Fig 33 - First iteration user scenario sketches

Cards

In Fig. 34 there are three examples of 80 cards that need to be used, but have the same layout. I made the following design decisions:

- The cards are playing-card sized to achieve familiarity in their handling. These can be regularly printed (and cut), but preferably on sturdy paper.
- Easy recognizable by icons for country, market and company.
- Sorting can be easily done, because the information is always at the same place.
- There is an open frame in the middle for the user to note the required information.
- Minimal design to encourage drawing or writing on the card.

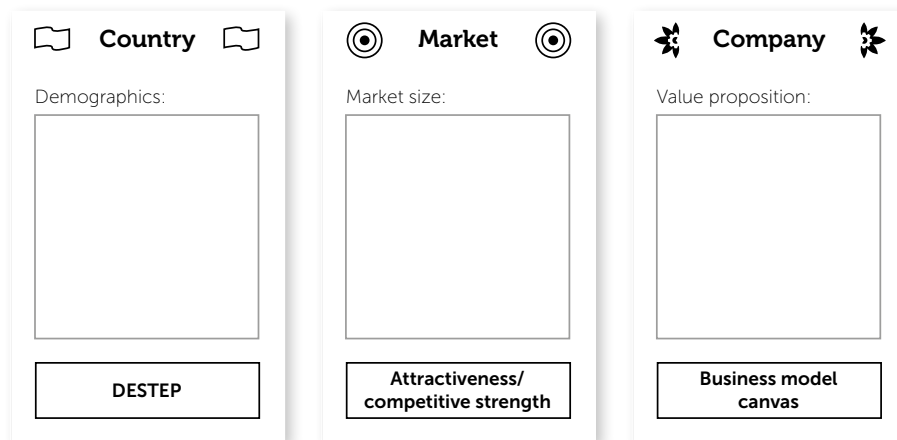


Fig. 34 - First iteration market-entry cards

Canvas

In Fig. 35 is the market-entry canvas. I made the following design decisions:

- Four same-size segments for symmetry which provides clarity.
- Light grey framework to show it as a directive and therefore encourage drawing outside the lines.
- The surfaces in the segments are equally distributed to not indicate hierarchy.
- Arrows show the route of how the canvas should be used.
- Examples are lightly given next to the frames to clarify the determinants to use within a (sub)category.
- Minimal design to encourage drawing or writing on the canvas.
- Possibility for easily printing in fourfold (for example 4 times A3) when a larger canvas is wanted.
- The date should be present on the canvas so you can compare the elements when they change over time.



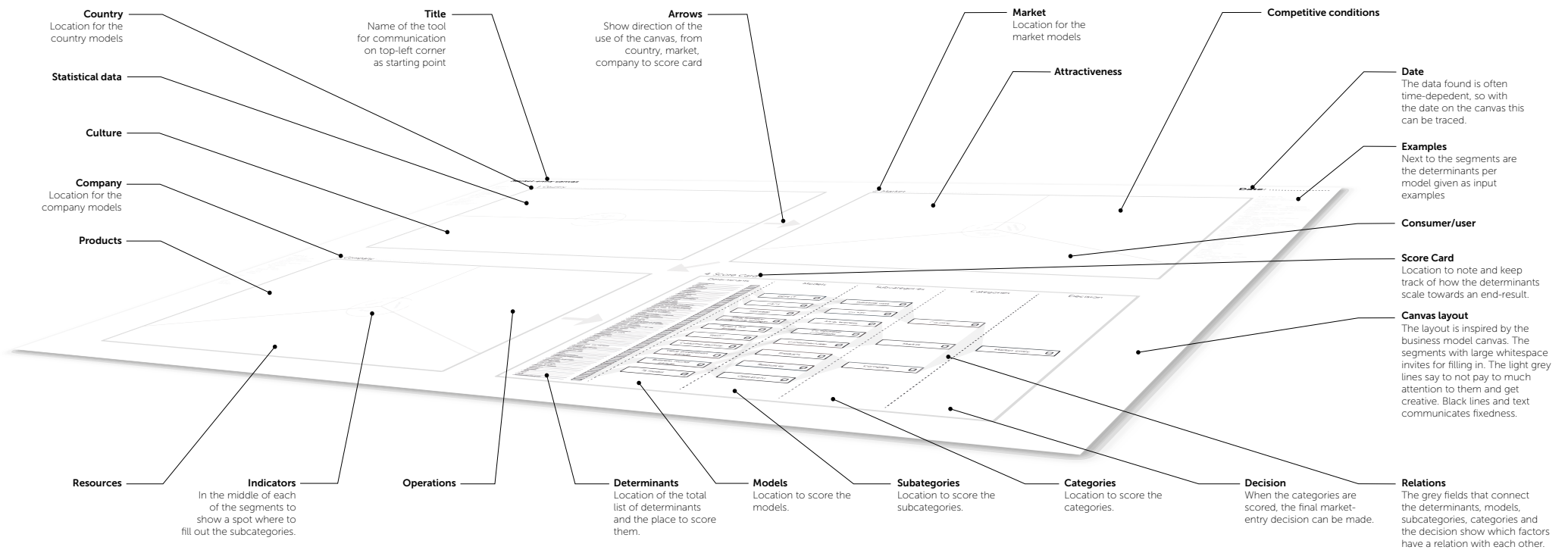


Fig. 35 - First iteration market-entry canvas



Sessions

In total, four sessions need to be held to come to a market-entry decision:

1. Kick-off session

Who: All members of the BDD

What: Planning, scheduling, divide 'country' cards

Length: Two hours

Goal: Consensus on steps to take in the market-entry decision process and agreements about the tasks and schedule

2 Country evaluation session

Who: All members of the BDD

What: Collecting, processing and scoring information, divide 'market' cards

Length: Two hours

Goal: Decision to continue to the next research step, if so, prepare the next step

3. Market evaluation session

Who: All members of the BDD

What: Collecting, processing and scoring information, divide 'company' cards

Length: Two hours

Goal: Decision to continue to the next research step, if so, prepare the next step

4. Market-entry decision session

Who: All members of the BDD

What: Collecting, processing and scoring information, make the market-entry decision

Length: Two hours

Goal: Decision to continue to the next phase in the Lumen process

There are a few roles for people within the sessions. The facilitator (the director in the user scenario) keeps track of the process. The others function as executors and participants..

While the current BDD team consists of three people, that is the number of participants to join the session. However, more people are welcome to join, up to a maximum of six. After that it gets to crowded.

There are also some unofficial goals to the sessions. They also provide a great opportunity to bond as a team and have more mutual understanding. Also, successful endings are always a reason to open up a bottle of champagne.

Because it is a concept development phase, these sessions are a first iteration that fit the first iteration of the cards and canvas, explained in the previous pages. In the final design, the sessions are similar, but are an update from the ones explained here.



Testing

The first design iteration from the concept development is tested. Testing the concept happens on three different levels:

1. Clarity; understanding, using
2. Content; information gathering, information processing, decision-making
3. Completeness; missing information, detailing

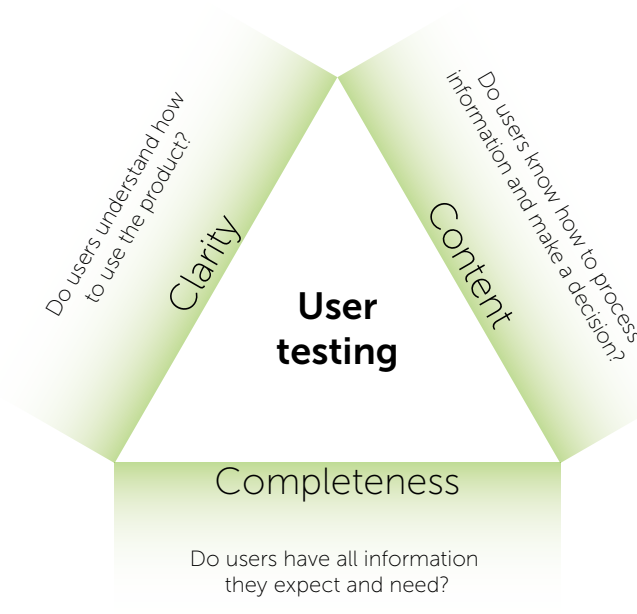


Fig. 36 - User testing focus

The research questions for these tests are:

- 1a. Do users understand how the decision aid works?
- 1b. Do users know how to use the decision aid?
- 2a. Is the content of the decision aid sufficient enough for the user to gather information?
- 2b. Is the content of the decision aid sufficient enough for the user to process the information?
- 2c. Is the content of the decision aid sufficient enough for the user to make a decision?
- 3a. Do users have all information they expect?
- 3b. Do users miss any steps in the process?



Fig. 37 - Testing materials

Results tests

Three user tests took place, each with small design iterations between them. These changes will be explained at the final design.

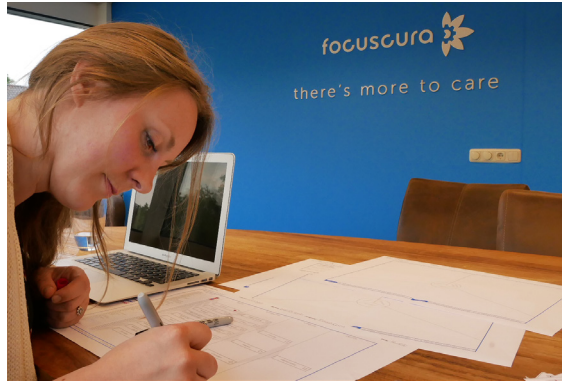
The first test was a self-test, to test the content en completeness of the cards and canvas. Already knowing the canvas, clarity could not be tested there. With all material available, I tried to fill out one model and score it. The second one with a single BDD employee (Em), where the focus was on clarity, content and completeness.

"I do not think you can just put a card here [on the canvas]. Does that mean I have to copy it?" (Em)



She got a basic explanation and then a task to fill out a model for an unknown market in a foreign country. Then, she tried to score that model. The last test was with two young professionals (YP1 and YP2), that work in unrelated fields, to test clarity. With limited information and knowledge of the subject, these participants needed to figure out how the cards and canvas could be used, so if they are intuitive and 'logical'. This was with a same kind of assignment as with the BDD employee, but with more limited explanation. See Fig. 38 for impressions and quotes of the tests.

"Maybe I need more information, but you always need more information. If I am honest, I do not think we would have gathered that information in real-life either." (Em)



"So, you do some methods, you give them a color if they fit with your wishes and if there is a lot of green: do it!" (YP1)

"I think we should do this for as much interesting markets as possible." (Em)

"It is nice to score with colors, because then you see right away: oh that is a lot of 'red'!" (YP1)

Fig. 38 - Impressions and quotes from tests

"I think you always view it from a company perspective. You just know that we look for similar markets, so we would not go to countries that are completely different from us." (Em)



Conclusions per research question

1a. Do users understand how the decision aid works?

Not immediately. The connection to the decision model is missing, the information on the canvas and cards are not clear right away, all participants needed an extra explanation. After a while the working and value of the decision aid was clear.

1b. Do users know how to use the decision aid?

Not without explanation. There was a tendency to copy the information from the cards to the canvas or paste it on the canvas, instead of writing the conclusions on there. There was a need for more directions on the canvas. The decision model did not get understood right away, but was found very useful in the end.

2a. Is the content of the decision aid sufficient enough for the user to gather information?

Moderately. The canvas prompts information gathering, but not right away what information and in what order.

2b. Is the content of the decision aid sufficient enough for the user to process the information?

No. The canvas fields were too empty to invite working. There was a need for having the model structures on there already. The cards were not used for information processing, except when pointed out.

2c. Is the content of the decision aid sufficient enough for the user to make a decision?

Yes. Especially the decision model was seen as very useful for decision making, because of the overview it provides.

3a. Do users have all information they expect?

No. They expect more guidance information on the canvas and

cards.

3b. Do users miss any steps in the process?

Yes. The connection of the cards with the canvas, and of the canvas with the decision model is not clear. Also, the order of the researches to execute was not clear enough.

Other insights

- Wish to process researches in a dedicated program (like Microsoft Word), instead of on handwritten cards.
- Tendency to copy card information to canvas, which is double work and therefore annoying.
- Cards were not inspiring, nor invited writing.
- Country research was done through market/company glasses.
- Wish to have the decision model on the same canvas.
- The subcategories step in the decision model is hard to understand, so is an obsolete step to take.
- The company goal should be clear before being able to score. For instance, a reference case.
- Scoring instinctively is done with traffic light colors (following the score card decision method).

The insights gathered in these tests are processed into the final design.



Final design

The user tests gave enough input for iterations to the design, resulting in a final design. This decision aid design can be seen as a package which includes market-entry cards and market-entry canvas. The goal of this package is to provide the BDD with a way to fill out the decision model (which is explained on the canvas), to make a market-entry decision. See Fig. 39 for an impression.

Decision aid specifications

The decision aid consists of market-entry cards and a market-entry canvas with which the BDD of FocusCura can make a more structured and validated foreign market-entry decision. All of the specifications of the design is in Fig. 40, which is completely self-explanatory. The use of the decision aid is explained in the next chapter, where a user scenario is illustrated with a walk-through for the German personal alarms market.



Fig. 39 - The final decision aid design impression



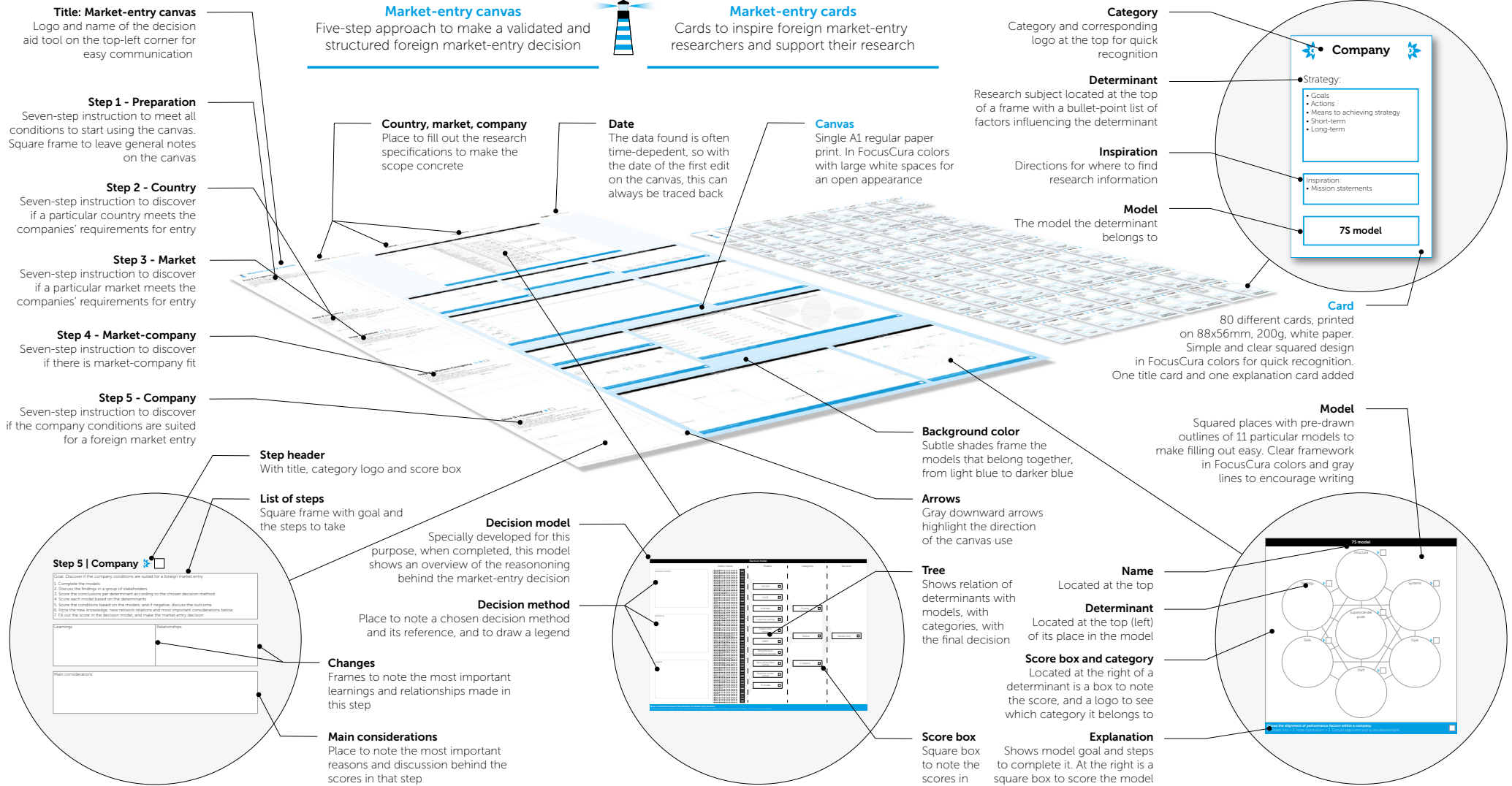


Fig. 40 - Decision aid design specifications

Updates

The following is a list of the main design updates after concept development. Apart from the changes noted here, the rest of the earlier explained use does not change.

Cards

- Fixed layout that is not intended for writing, because the use focus has changed. It serves now solely for inspiration, and not for processing anymore.
- Factors influencing the determinant have been collected from internet and put in a bullet-point list to provide direction.
- Explanation card and front card added for clarity and product branding.
- Use of FocusCura colors for to be more aesthetically pleasing and recognizable to the user.

Canvas

- All models are now on a single A1 canvas, and explained in five clear steps with each seven more steps. No instruction manual is needed because of this.
- The outlines of the models have been added, because else it would have just been drawn on there by the user anyways. This way it gives more direction what the point is.
- The subcategories are removed from the decision model because the steps were not understood, and were not really added value.
- The decision model got room for noting the decision method, what will be the reference and a legend, to make the details for the choice more explicit.
- Making the decision from the models to multiple categories has

been made easier by adding a market-company step for models with both market and company determinants.

Sessions

- The intended sessions are added to the canvas, so there is no need for separate instructions.
- Session went from four to five, in line with the market-company step. Because of this, the session can be shortened to an hour per meeting, and be more frequent.

Summary

In Fig. 41 an overview is given of the context in which the decision aid will be used. More details about the use of the decision aid will become clear in the walk-through of the next chapter.



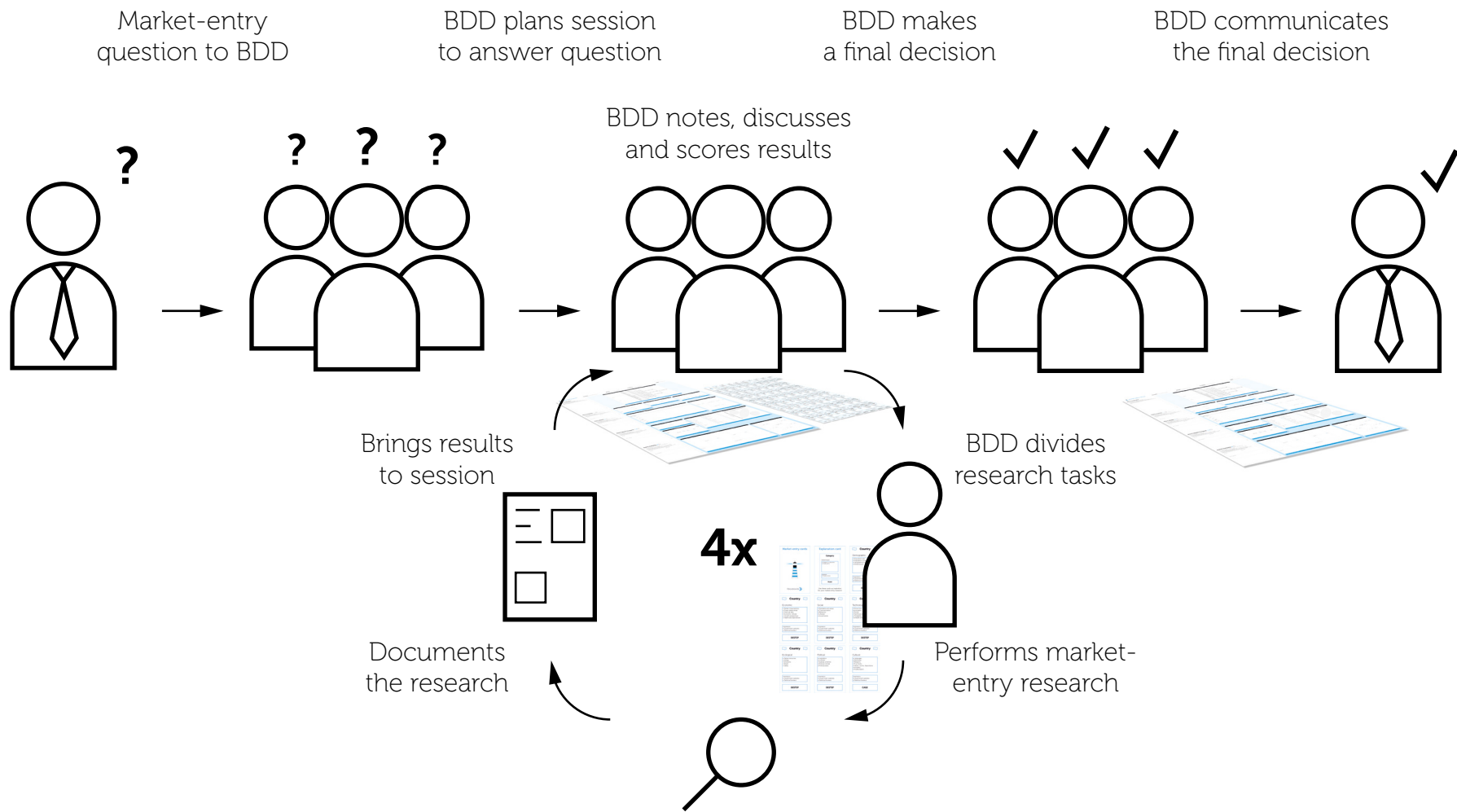
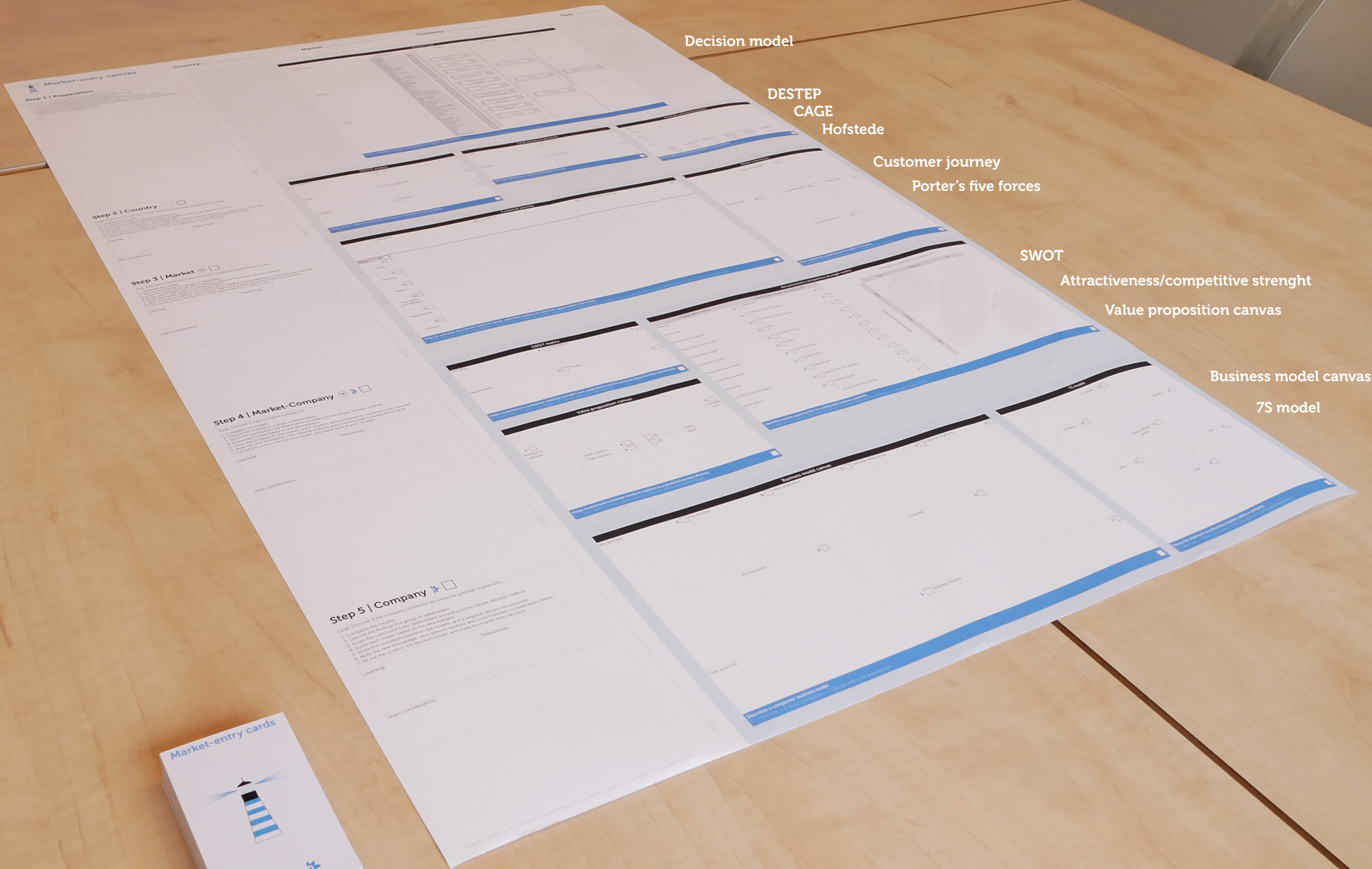


Fig. 41 - Decision aid use context



Decision model

DESTEP
CAGE
Hofstede

Customer journey
Porter's five forces

SWOT
Attractiveness/competitive strenght
Value proposition canvas

Business model canvas
7S model

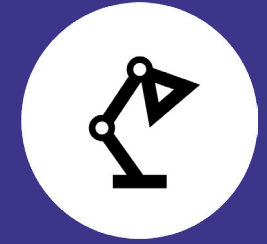


Conclusion

Starting from the design brief, a successful configuration took place of the internationalization process with the decision method, to form a decision model. A conceptualization on the form for the use of this model resulted in five concept ideas, of which two merged to a final concept design. Insights from three tests shaped the final decision aid design: the market-entry canvas and market-entry cards.

The design complies to the requirements of the design brief, and is truly an experience with head, heart and hands.





5. Case

“Ring the bells that still can ring
Forget your perfect offering
There is a crack in everything
That’s how the light gets in”

- Leonard Cohen (Anthem)

Introduction

Ten years ago, Mrs. de Vries annually enjoyed her holidays just across the border. At the Hardter Wald in Germany, she likes to forget every day life and relax. She met Frau Muller there, who also went there alone, about the same time every year. They became good friends and Frau Muller often took Mrs. de Vries on horseback riding trips.

One fateful day, some kids where playing in the bushes next to the riding track. Frau Muller could only just dodge a 10-year old boy, when he suddenly crossed. The horse got scared and rose, which made Frau Muller fall to the ground. She was hurt, but did not complain, until the doctor told her hip was broken. She has been walking with a limp ever since.

When the hip deteriorated a couple of weeks ago, Mrs. de Vries called Frau Muller to recommend a personal alarm. She only did not know if the same service was available in Germany as she had become used to in the Netherlands...

In this chapter the eyes gaze to the east: Germany. In particular, the personal alarms market is of interest. With help of the decision aid I analyze this market and give an advice on the market-entry question of FocusCura: should they start offering the seniors in Germany their great service as well?



Approach

This case study focuses on the question: Is it possible to make a market-entry decision for the German personal alarms market, using the decision aid? This results in an advice for FocusCura whether they should enter this market, and also results in an evaluation of the design.

To answer the research question of this case study, I perform a walk-through of the decision aid (Fig. 42). This is basically following all the steps in the using process as they are intended. The main reasons for that, is the fact that the goal of decision aid itself is building a case, and with a walk-through you can completely test an intended user scenario.

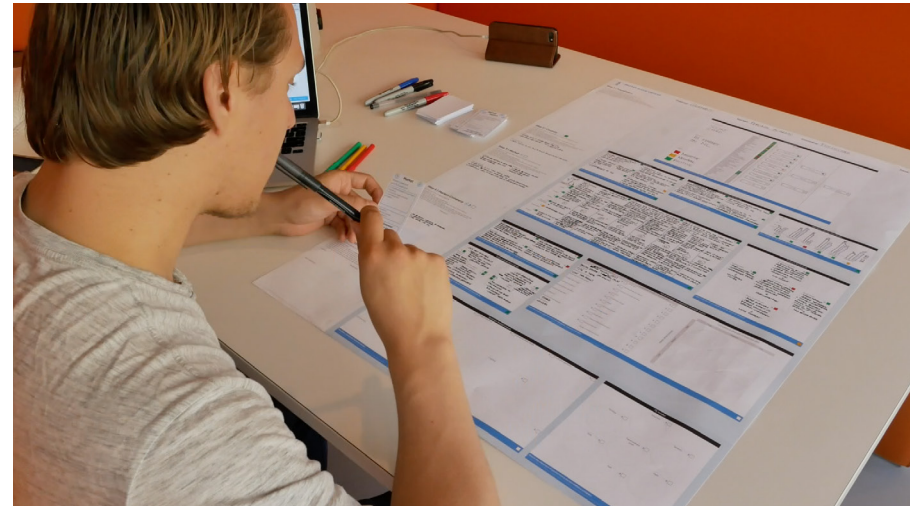


Fig. 42 - Walk-through in progress

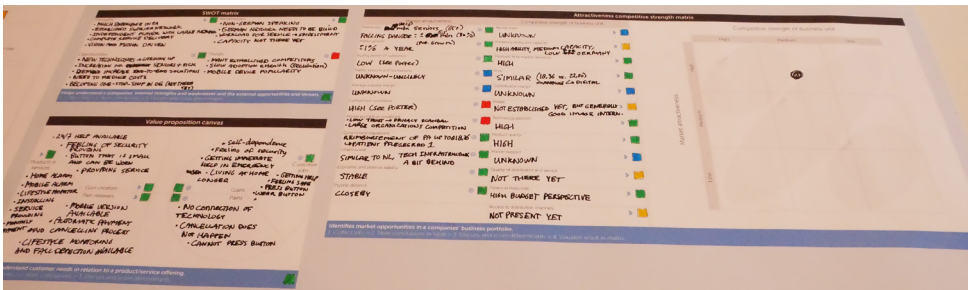


Step 4 | Market-Company

Goal: Discover if there is market-company fit.

1. Complete the models
2. Discuss the findings in a group of stakeholders
3. Score the conclusions per determinant according to the chosen decision method
4. Score each model based on the determinants
5. Score the fit based on the models, and if negative, discuss whether to continue to the next step
6. Note the new knowledge, new network relations and most important considerations below
7. Fill out the score in the decision model, and repeat point 6 and 7 of step 1

1. SWOT matrix, Attractiveness/competitive strength matrix and Value Proposition Canvas. Information from interviews, focus group, market and company reports.
2. Weaknesses can be overcome by strengths, but threats are serious because of competition. Easy to have a value proposition that fits the user. Many unknowns on finances, market large size.
3. Negative factors because of competition, yellow and blue because of uncertainties and unknowns.
4. Positive, only attractiveness/competitive strength is neutral
5. Fit is uncertain because there are still many unknowns. Neutral.
6. Noted the knowledge pointed out in the points above.
7. -

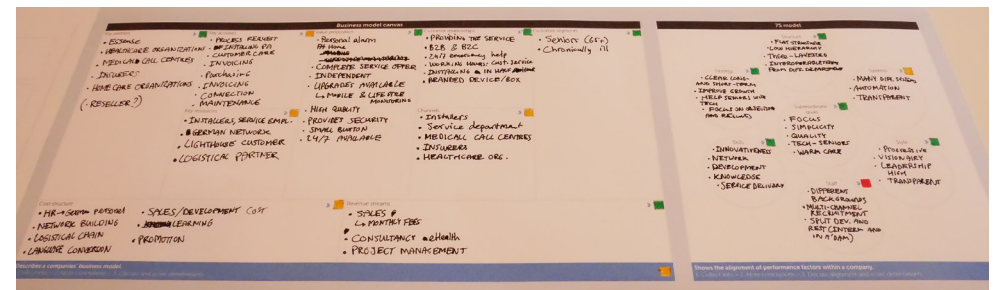


Step 5 | Company

Goal: Discover if the company conditions are suited for a foreign market entry.

1. Complete the models
2. Discuss the findings in a group of stakeholders
3. Score the conclusions per determinant according to the chosen decision method
4. Score each model based on the determinants
5. Score the conditions based on the models, and if negative, discuss the outcome
6. Note the new knowledge, new network relations and most important considerations below
7. Fill out the score in the decision model, and make the market-entry decision

1. Business Model Canvas and 7S model. Information used from interviews, reports and internal company research.
2. Unique and well aligned offering in NL, but there are a lot of channels, activities and resources needed to move that to Germany. Can only conceptually say something about cost and revenue, because unknown.
3. Channels, activities, resources, costs and systems neutral. Skills negative, the rest is positive.
4. The Business Model Canvas is neutral, the 7S model is positive.
5. Positive, if company commitment is high.
6. It is unclear how the cost weigh out against the benefits. Large investment and commitment needed, (German) staff needs to be hired, because the skills within the company are not all there yet.
7. After filling out the scores, the market-entry decision is positive.



Main considerations

Feeling

Pain points and highlights

Opportunities

Evidence

Gives an overview of a certain customer group, what their motives are and what opportunities that brings.
 1. Collect info > 2. Note persona details in the top beam > 3. Note the journey stages and make vertical frames > 4. Map customer journey by filling out the determinants > 5. Discuss and score determinants.

Threat of substitution

Helps understand competitive forces within an industry.
 1. Collect info > 2. Note conclusions > 3. Discuss and score determinants.

Step 4 | Market-Company

Goal: Discover if there is market-company fit.
 1. Complete the models
 2. Discuss the findings in a group of stakeholders
 3. Score the conclusions per determinant according to the chosen decision method
 4. Score each model based on the determinants
 5. Score the fit based on the models, and if negative, discuss whether to continue to the next step
 6. Note the new knowledge, new network relations and most important considerations below
 7. Fill out the score in the decision model, and repeat point 6 and 7 of step 1

Learnings Relationships

Main considerations

SWOT matrix

Strengths Weaknesses

Opportunities Threats

Helps understand a companies' internal strengths and weaknesses and the external opportunities and threats.
 1. Collect info > 2. Note conclusions > 3. Discuss and score determinants.

Value proposition canvas

Products & services

Gain creators Pain relievers

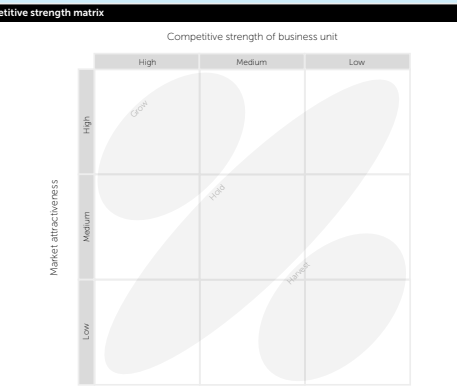
Customer jobs

Gains Pains

Helps understand customer needs in relation to a product/service offering.
 1. Collect info > 2. Note conclusions > 3. Discuss and score determinants.

Attractiveness competitive strength matrix

	Market attractiveness	Competitive strength of business unit
Market size	<input type="checkbox"/>	Market share <input type="checkbox"/>
Market growth	<input type="checkbox"/>	Marketing ability and capacity <input type="checkbox"/>
Buying power of customers	<input type="checkbox"/>	Products fit to market demands <input type="checkbox"/>
Market seasons and fluctuations	<input type="checkbox"/>	Price <input type="checkbox"/>
Average industry margin	<input type="checkbox"/>	Contribution margin <input type="checkbox"/>
Competitive conditions	<input type="checkbox"/>	Image <input type="checkbox"/>
Market prohibitive conditions	<input type="checkbox"/>	Technology position <input type="checkbox"/>
Government regulations	<input type="checkbox"/>	Product quality <input type="checkbox"/>
Infrastructure	<input type="checkbox"/>	Market support <input type="checkbox"/>
Economic and political stability	<input type="checkbox"/>	Quality of distributors and service <input type="checkbox"/>
Psychic distance	<input type="checkbox"/>	Financial resources <input type="checkbox"/>
		Access to distribution channels <input type="checkbox"/>



Step 5 | Company

Goal: Discover if the company conditions are suited for a foreign market entry.
 1. Complete the models
 2. Discuss the findings in a group of stakeholders
 3. Score the conclusions per determinant according to the chosen decision method
 4. Score each model based on the determinants
 5. Score the conditions based on the models, and if negative, discuss the outcome
 6. Note the new knowledge, new network relations and most important considerations below
 7. Fill out the score in the decision model, and make the market-entry decision

Learnings Relationships

Main considerations

Business model canvas

Key partners Key activities Value proposition Customer relationships Customer segments

Key resources Channels

Cost structure Revenue streams

Describes a companies' business model.
 1. Collect info > 2. Note conclusions > 3. Discuss and score determinants.

7S model

Structure

Strategy Systems

Superordinate goals

Skills Style

Staff

Shows the alignment of performance factors within a company.
 1. Collect info > 2. Note conclusions > 3. Discuss alignment, and score determinants.



Results

In this part are the results for the objectives stated in the approach: market-entry advice for FocusCura and design recommendations to improve the decision aid. See the filled out canvas in Fig. 43.

Market-entry advice

Should FocusCura make a market-entry in the German personal alarms market? Yes. There is a market that is very similar to the NL market, only many times larger and with the same positive trends. Germany is 3/4 years behind on eHealth and that gap can be filled by following a similar path as in NL. Personal alarms are now one of the few telecare products that are reimbursed by insurers, so a good first step. Though, there is heavy competition already, that is not easily substituted. Commitment from company management in terms of time and resource investment is needed to build an infrastructure there. Else, find a reseller that can do that.

To hedge the results, there was still some important information missing, mainly considering financial prospects. Also, no discussions took place with the BDD about the results, which could provide different views on certain results.

Design evaluation

The walk-through provided with a few insights to the design, which would be recommendations for improvement. First, the A1 size of the canvas was easy manageable and readable, but not easily to work with because of small writing. Though, this encourages to

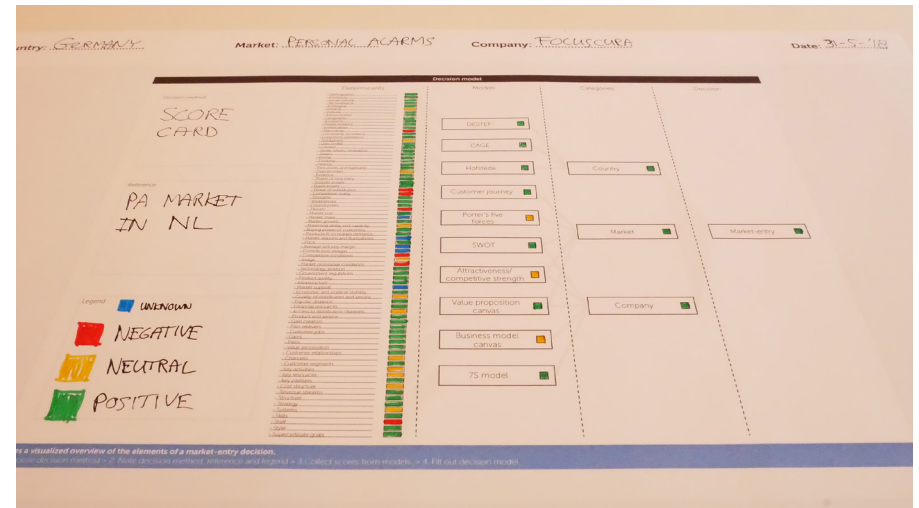


Fig. 43 - Filled out decision model for personal alarms market in Germany

stick to short conclusions, which helps decision-making. This would be bad for later referencing, but details should be stored in separate company reports. Secondly, the Hofstede model needs more room to state conclusions, and a legend for comparing. Thirdly, the cards were difficult to sort because the category and model are on other ends. Also, I tended to focus on the information on the card only, while it is recommended to look further for more relevant factors.

Limitations

Within the process of this project, it was inevitable that some of the researches were conducted before the decision aid design was finished. Therefore, some researches had a different focus than they might have following the decision aid. An assumption is made



that the conclusions of those researches are still valid and will not be affected when used in another research context.

Also, the details and considerations of this case study remain underexposed here, due to a limited project time frame. For this reason, the study must be seen as experimental and empirical.

Furthermore, like said earlier, some research results were still missing and discussions did not take place.



Conclusion

The case study has been successfully executed and delivered a result. I was able to easily make a structured and validated market-entry decision, using the decision aid. This provides validation that the design goal has been met. Even though the research was not complete, with the decision aid I gave a positive advice for making a market-entry in the German personal alarms market.



6. Conclusion



“When something is important enough, you do it even if the odds are not in your favor”

- Elon Musk

Introduction

In about two years from now, Mrs. de Vries will move to Kleve in Germany. She decided it was time for an adventure, so she will go live close to Frau Muller in an apartment. She is sure that by then, her FocusCura cAlarm can be just transferred to her new home, where she can enjoy it for a very long time.

A thing that will not take a long time anymore, is this report. It is time to wrap it up.

The assignment of this thesis had two goals:

Develop a decision aid which supports FocusCura to structure their internationalization decision-making process. Apply the decision aid to a market-entry decision for the German personal alarms market.

I stated three research questions to achieve that goal of the assignment:

1. What are the internationalization models FocusCura needs to use to make a market-entry decision?
2. How can MCDA decision-making support a market-entry decision?
3. What criteria are there for a decision aid tool?

The research provided answers to all the questions, of which the knowledge was then implemented into a decision aid design that indeed structures and validates FocusCura's market-entry decision. The application to the German personal alarms market could be executed, which resulted in a positive market-entry advice.



Discussion

This part discusses the relevance of the research findings.

Internationalization

First, within the field of internationalization there are many articles focusing on specific parts of the internationalization process. For example, about a company's entry-mode. Only some books focus on the market-entry decision, of which all approach it as a market screening process. My angle of approach was a bit different, because of the slightly different research question. Instead of looking at multiple markets to compare, the research question focused on deciding for one particular market. I made an assumption that even though the angle is different, the content should be similar. Others could have different reasoning. Also, I first determined the internationalization process most relevant to FocusCura, in which I incorporated a combination of the found screening methods, instead of taking the screening processes of the books as starting point. You could question if that is the right way around. Moreover, there are probably more determinants than I found in the review, but I assumed these cover most of them. More determinants can probably be found and different models can be used to validate the decision even better. For this situation I found indications in the fact that the market-entry decision can at least be more structured and validated based on the case study, so this study has sufficed. Even more, the design could in theory cope with 'updates' easily by exchanging the model frames on the canvas and making extra cards.

Decision-making

MCDA, one of the most widely used decision-making methods was chosen as decision method. The notoriety made it easy to implement, but might have given a narrow view on the field of decision-making. Though even large statistical bureaus use MCDA, a more valid method might be overlooked. The way the decision model works, shows no large downsides or missed parts, so it would not have made sense to go look for other decision methods.

Form

The form decisions were completely motivated by the three people of the BDD of FocusCura. By using only their preferences, the form scope narrowed to their experience, instead of getting very creative and original. This was also due to the relatively complex content of the design. Doing it this way, a relevant design for them has been delivered, though. If the composition of the department changes, the preferences might change, and thus the design could. More logically would be that information will be transferred, and new employees learn how to work with it.



Limitations

This part points out the research limitations.

Added value of research

The research borrows from well researched fields as internationalization and decision-making, to which no completely new contributions are made. The added value comes from configuring the aspects internationalization and decision-making into a pragmatic approach for a single company. Even though the research was focused on providing a fitting solution to FocusCura's problem, it could be possible to generalize the solution to fit other companies as well. This could add a practical approach to the existing market screening literature.

Theory reflection

The focus was on turning internationalization and decision-making literature into something concrete and usable. In both fields I used models commonly used in business practices. Though empirically proven useful, their value can be questioned. Also, their relations to each other in categories is mostly following reasoning, and is not solidly proven to be lead to the right market-entry decision. It is hard to prove that the decision taken based on the design is actually the right decision. This should be proven by entering multiple markets based on the design, and see if the decisions were right. Furthermore, there might be more relevant models available that fell out of my scope. Multiple use cases could provide a proof-of-

concept for this, but this could not be replicated within this project.

Method reflection

Much ground has been covered with literature and documents, but there are always limitations to that. For instance, the information could be too generalized, or the models might not be valid within in this day and age, and within this eHealth market.

In the generative researches, being both facilitator and researcher there is a chance of slight bias towards a result. Also, even though closely analyzed, information could have been easily misinterpreted.

For the German case study, only a few end-users, non-users and one healthcare organization were researched. Though this gave clear indications and insights, it is questionably scientific enough to claim its validity. Also, most of the field researches for the case study were done before the final design was finished, due to earlier opportunities. This caused some missing information because of a slightly different focus. In the ideal situation, the final design was finished before the start of the case study, and multiple different organizations and user segments would be investigated.

Usability reflection

The design is made to work for the present company, with their present work structures. Though the design can be easily adjusted, it might lose its use value when for instance the strategy changes, the team changes or the Lumen process is not followed. Also, if the form criteria of the BDD changes, the form of the decision aid design changes. I have now researched one group of people in one company. The criteria depend on my current research scope. It



would be good to increase the number of companies and people, to see if the market-entry canvas is the best form. If the criteria changes, it could be that another design form from the concept development scores better and should be used.

Scope

Increasing complexity of the problem made it necessary to scope the research. I did not start with a green field, for instance I started of with the Lighthouse strategy as scope. There might have been a better strategy available to build the decision aid tool on. Also, because of scoping to a solution for a single company in the eHealth business, the research could have missed an opportunity to be relevant in other markets as well.



Recommendations

These are the recommendations for the BDD of FocusCura, following the limitation of this research project, and subjects where additional research can be conducted, based on this report.

Business development

- Develop the decision aid further according to wishes. Add/remove models from the canvas and decision model when they do or do not work for the company.
- Apply for multiple countries and markets to really see differences and find the most valuable to invest in.
- Research the other phases of the Lumen process.
- Commit to the structured approach, even though it costs more time.
- Build an online tool for the researches, so information does not get lost.
- Do more research with other organizations for foundation of findings and possibility to make a general applicable canvas, which could improve company status.

Additional research

- Does it really work and can the design be improved.
- Investigate if, and what the impact is of using a different internationalization process with this model.
- Does the design function when there is little information available
- More use cases and document results to see if the design works in the long term.

- Because of the Lighthouse Strategy, I built a tool for market development, but the other factors in the Ansoff matrix are also important. These are worth investigating too. For instance, following a product development strategy, the internationalization opportunities could be greater.



Personal reflection

The graduation project has been a long and challenging journey. I can compare it to a challenge I did exactly three years ago: a 100km rowing marathon.

Even though I had never been in a rowing boat before, I felt positive I could get myself (and the other seven people in the boat) to successfully complete it. At the start, motivation is high to begin. Getting the team together to commit is like finding a Thomas-assignment-fit with FocusCura. It takes some convincing and steering, but right away you need to feel a match, like I had with the company. We took off quickly. Too quickly, it was. Getting the assignment approved seemed to be more difficult than imagined.

I was too focused on getting an assignment that FocusCura wanted, that it started to look a lot like I was going for an MBA. The assignment was too widely focused and there was too little design. I think because I always like to look at large problems through business goggles, I left my fancy design goggles at home. And also seeing mostly people with business goggles at the company, made me forget for a while I even had design goggles! (Metaphorically speaking of course, my eyes are fine) It took too long for me to realize this, and this could have saved a lot of time and trouble.

The first months of the project felt a bit like getting into the training schedule for rowing. You know you should be working out, and you think you know how an ergometer works, but in reality you are not doing the workout that is best for the result. For me, this workout was my widely focused Germany research.

After I got to know FocusCura, I wanted to get to know the German personal alarms market, the first months. I was going to advise the company on starting there, so this was my priority! It turned out I was doing it the wrong way around. I should have started with researching the main goal of the assignment: designing a decision aid. Because I first started with researching Germany, this was a bit unfocused. I tried to find all information that could be relevant within the field of personal alarms, instead of looking at the determinants I discovered later in the process. Despite this, I managed to get information from a wide variety of people. In a focus group session, interviews, meetings, a congress and even having three native Germans doing interviews for me. They were all very willing to help and share their knowledge and experiences for nothing more than helping out. That was great fun!

Tip: Do not get too informal too quickly with Germans. After a meeting with a new contact in Germany, we went for lunch in a Bavarian restaurant. Being a Friday I could persuade him for a beer. After this, the atmosphere got more jolly and I promised him I would send a picture from a Sinterklaas party I had that night. Later that week, I remembered my promise and sent a thank you mail, with a picture attached of me in a full Sinterklaas outfit. I never got a reply.

Like I forced myself to learn how to row, I forced myself to do some things I did not get to do much during the master. For instance, I had never facilitated a generative session before, I had never been very good at doing theoretical research and I had never been final editor for reports in group projects before. These things in particular drew a lot of time and attention, but are skills I feel I have improved in. Especially creative facilitation is a skill I think is very valuable, that



I needed to learn myself (with help from books and my mentor). It was scary to do, but the results were very rewarding.

For the trainings in the water, it was hard to get eight people, a steersman and a coach together. When eventually in the boat, finding the rhythm was also hard to do. The people needed are a bit like the pieces of information I needed to collect for the decision aid. The rhythm was putting all the information into a smooth storyline. It was very hard to find the pieces of information I needed and compose it into a whole. Abstract terms, like models and processes, needed to become tangible elements of the design. This meticulous juggling with words was not something I liked to do, and I do not think I have a talent for it. Most of the time I tend to forget the goal when complexity increases. What I did like to do is trying to visualize it, but in a report, this alone does not do the trick, unfortunately. Overall, I am satisfied with how the story came to be, and with the substantial content.

Getting close to the date of the rowing marathon, you cannot wait to get started. The last weeks you really build up to deliver on that moment. It would have been a shame if the date got moved down again and again, three years ago. This happened in this graduation project. Fairly early, I wanted to plan a green light meeting, not really knowing what was expected from me. About three times, the date got postponed before I really knew what the criteria were exactly. This was very disappointing at some points. I learned to get over this by not thinking too far ahead, and focus on the immediate tasks. I also know better now that I really need to manage the expectations of myself better. Assumption is the mother of all f*** ups.

When the day came, I was totally prepared to go. I knew the

moments I had been slacking in the trainings could make it harder, but I felt confident I could do it. The green light presentation was the same. I knew the flaws, but was positive they could be overcome to achieve the end result. It is a race against yourself that gets harder, until you become the master. With the end near, I feel a sprint coming that will end in flowers.

Looking back three years, there was a large feeling of euphoria and pride completing the rowing marathon in nine hours and three minutes. I have the same feeling now, completing this report in nine months minus three days, and thus finishing my study. I am sure this feeling of accomplishment will cure the graduation blisters and muscle pain very soon, and will boost me towards a next challenge!

Some more takeaways:

- Everything is a one-man-job, you get out what you put in.
- Doing a project alone takes about eight times as long as doing a project with a team of four.
- Planning a four-way meeting is difficult. Start with the busiest person and work your way up.
- Keep the stakeholders involved by regularly updating. This will improve understanding between one another.
- Changing working environment every now and then boosts creativity.
- Working with people, having appointments and going to events gives me energy. Doing 'administrative' or repetitive work costs a lot of energy, but is easier having a tight deadline.
- Having ideas of the end-product in an early stage makes things tangible and helps to keep focus.
- Do not underestimate incubation periods of ideas. Take time to process them. Do other stuff sometimes.



Graduation journey

You can find the past months in details in Fig. XXX: the graduation journey. Here you see what I did, thought, how I felt (the smileys)

to show emotional state), what the pain points and highlights were, what opportunities I should have seen in retrospect and the evidence for that.



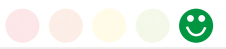
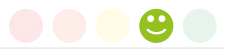

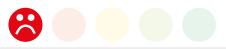


	User profile	Context	Goals, values, motivation				
	 <ul style="list-style-type: none"> - Thomas van Duijn - 25 years old - Student Strategic Product Design - Lives in Rotterdam - Likes sports (football, cycling, skiing) - Has a good sense for bad humor 	<ul style="list-style-type: none"> - Open, friendly personality - Motivated and creative - Loses focus when getting too deep in a problem 	<p>Thomas is at the end of his career as a student at the TU Delft. His top priority now is to finish on a positive note with a good grade for his graduation project. Therefore, he does not have much spare time left now to socialize with his friends and family, while enjoying a craft beer. There is always time to watch a game of his favorite football team Feyenoord, though.</p> <p>His main goal is graduating. During graduation, he wants to apply his knowledge, but also learn things that have not come up during the study. He values experience, transparency and dedication while doing so. His motivation comes mainly from having a tough time finishing his bachelor, but finally finding his way with a well chosen master. He wants to show he can do it, even though people have doubted him before.</p>				
Stages	Preparation	Kick-off	First phase	Halfway there	Green light focus	Pre-green light	Post-green light
Doing	<ul style="list-style-type: none"> - Finding a fitting assignment - Writing motivation letters - Updating CV - Placing LinkedIn message - Finding supervisory team 	<ul style="list-style-type: none"> - Getting to know FocusCura - Preparing for the start - Refining the assignment 	<ul style="list-style-type: none"> - Rewriting the assignment - Making an internal analysis - Researching end-user context - Starting with report 	<ul style="list-style-type: none"> - Doing research in Germany - Reporting - Having decision aid session and brainstorm 	<ul style="list-style-type: none"> - Restructuring report - Processing feedback - Refocus to decision aid - Researching decision aid 	<ul style="list-style-type: none"> - Processing report feedback - Concluding research - Designing solution 	<ul style="list-style-type: none"> - Finishing design - Testing with users - Concluding report - Reporting case study Germany
Thinking	<ul style="list-style-type: none"> - What kind of assignment? - Am I interesting enough for companies? - What supervisory team would I want? 	<ul style="list-style-type: none"> - Going for a good grade - How can I best organize the project? - How can I best manage the expectations? 	<ul style="list-style-type: none"> - What should be the focus? - Need to get the user involved - How can I structure the report? 	<ul style="list-style-type: none"> - Interesting data Germany - How can I best structure the research outcomes? - How can I find the user wishes? 	<ul style="list-style-type: none"> - What is needed for finishing? - I should have researched the decision aid before Germany - What is the actual problem? - How do I get to the solution? 	<ul style="list-style-type: none"> - What to finish for green light? - How can I make a relevant design? - Almost there 	<ul style="list-style-type: none"> - How can I make sure everything is done in 28 days? - Sprint to the end
Feeling	<ul style="list-style-type: none"> - Motivated - Uncertain 	<ul style="list-style-type: none"> - Excited - Determined 	<ul style="list-style-type: none"> - Motivated - Searching 	<ul style="list-style-type: none"> - Searching - Wandering 	<ul style="list-style-type: none"> - Desperate - Strained 	<ul style="list-style-type: none"> - Determined - Sparked 	<ul style="list-style-type: none"> - Focussed - Sick 
Pain points and highlights	<ul style="list-style-type: none"> - Rejections from companies - Unknown to the process - Meeting FocusCura - Getting commitment supervisory team and FocusCura 	<ul style="list-style-type: none"> - Positive energy from the supervisory team 	<ul style="list-style-type: none"> - Focus difficult to find - Long internal analysis - Interesting meetings - Successful session with BDD - Research overview image 	<ul style="list-style-type: none"> - Still struggling with focus - Much info but not structured - Reporting costs a lot of time - Successful sessions 	<ul style="list-style-type: none"> - Delays of deadline - Energy consuming process of restructuring - Found focus and structure 	<ul style="list-style-type: none"> - The amount of work still to be done - Getting creative with the design - Setting the graduation date 	<ul style="list-style-type: none"> - Negative feedback on parts of the design - Sudden health issue - Pride in the result
Opportunities	<ul style="list-style-type: none"> - Working with inspiring people - Getting a narrow assignment 	<ul style="list-style-type: none"> - Setting joint goals - Receiving tips for the project 	<ul style="list-style-type: none"> - Asking more help for focus - Having a new, tight planning - Planning more feedback moments 	<ul style="list-style-type: none"> - Starting to report early - Knowing individual work takes a lot longer than with a group - Getting more out of the graduation bubble 	<ul style="list-style-type: none"> - Sticking close to the goal - Having a healthy work-life balance - Trying to find the complete story first 	<ul style="list-style-type: none"> - Prioritizing work to be done - Alternating designing with writing - Detailing the design and also the context 	<ul style="list-style-type: none"> - Leaving room in planning to cope with unforeseen things - Making fast decisions
Evidence	<ul style="list-style-type: none"> - Having the supervisory team I wanted and an interesting assignment 	<ul style="list-style-type: none"> - Having had a good meeting 	<ul style="list-style-type: none"> - Hard to discover the goal - Not having much concrete on paper - Getting clear outcomes from session 	<ul style="list-style-type: none"> - Overestimation of individual work in a certain timeframe - Overthinking of next actions - Useful session outcomes 	<ul style="list-style-type: none"> - Pieces fell together when the story was made - Long days for a longer period did not benefit the work - Doing the project backwards 	<ul style="list-style-type: none"> - Most of the design got done in a couple of days - Being in either a designing or a writing mode 	<ul style="list-style-type: none"> - Did not have much time for points on the i - Tried to do a lot of iterations of the design

Fig. XXX - Graduation journey

That's all folks.





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