The future roadmap for an artificial intelligent eye tracking platform.

expoze

The future roadmap for an artificial intelligent eye tracking platform.
Master thesis for Strategic Product Design

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Acknowledgments

Dear reader,

Here I present you my master thesis for Strategic Product Design at the TU Delft. For the past six months I have been working on behalf of Alpha.One for their new product expoze.io. I am thankful for this opportunity and the support from the support they gave me in order to get insights for my report, hereby thank you Daan.

This project has been a quite a challenge, my stress levels really got tested in a year where disease was the main topic. Due to corona almost all my time spent on my thesis was from home. Where normally I would gather myself with like-minded individuals to inspire each other and help each other, this was something that really lacked in this design process.

I would like to thank my chair and mentor, Jeroen Coelen and Jo van Engelen for their weekly support, which made up a little for the lack of peers to discuss my project with. I appreciate the time and effort made to help me and inspire me to look at things differently.

Next to them I would like to thank my family for their continued support throughout my study time. I appreciate the trust they have had in me since I started Industrial Design Engineering.

In addition I would like to thank my friends at the CPT for letting me write my thesis in their living room for three weeks when the walls of my room were closing in on me.

Thanks to my housemates, current and previous, for their support and discussions surrounding my thesis. Finally thank you to my girlfriend for keeping me sane during my thesis.

Enjoy reading about my project,

Seerp

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Executive summary

This thesis was performed in assignment of Alpha.One for their new eye tracking prediction platform expoze.io. The project started of with the brief; What does the future of expoze.io hold? This indicates the need for a future vision. In order to create a future vision the company purpose must first be researched, the reason why they exist. The purpose of the company is often related to the customer needs, therefore it is important to understand the subjective value that the product offers to the customer. Therefore before the preliminary research the research questions proposed were;

What does the future roadmap of expoze.io look like?
• What is the future vision for the predictive eye tracking platform expoze.io?
• What is the purpose of expoze.io?
• What is the customer value of expoze.io?
• What are market gaps / differentiating factors in the market?

The preliminary research revealed that for the roadmap to succeed a process integrating the roadmap should be designed. This process should also fit the company as it is still a startup, therefore it must be time, effort and cost efficient. Another insight was that there needs to be a shift to a more human oriented mindset within the company. These insights led to the addition of the following research questions.

What does the future roadmap of expoze.io look like?
• How can the roadmap assist in adapting the product to be more Human?
How could the roadmap be best adopted into the operation of the expoze.io team? (process)
• How to build an innovation process that fits a small startup team?
        cost, time, effort efficient
• How to create a shift to a more human oriented mindset in this process?
• How to make sure that ideas selected fit the needs of the customers?

Through customer interviews it became evident that the subjective customer value that expoze.io brings to the customer is confidence. Through eye tracking analysis the customer gains confidence in their advertisements and if they will perform in the market as they would like it to perform. It also brings confidence in presenting their analysis to their bosses or clients. This in turn makes the purpose of expoze.io "bringing confidence to marketeers".

By accompanying the purpose with the insights from competitor analysis, customer research, trend analysis and market research the future vision could be created. Through brainstorming the following vision was proposed; "Bringing the brains to the art of marketing".
This vision was tested through a workshop with the employees at Alpha.One. The workshop also ensured the involvement of the people working at Alpha.One in the creation of the roadmap, it also facilitated communication about everyone's ideas about the future path of the company. The vision was chosen by the most people and is therefore implemented into the roadmap.

The roadmap was based on the vision that was created accompanied by the insights from the research to fill in the steps that need to be taken in order to reach that future. The core strategy of the roadmap is to create confidence by facilitating deeper insights through the platform.

In order for the roadmap to succeed an innovation process to support roadmapping was designed. This innovation process will also facilitate the shift towards a more human mindset by incorporating the customer in the ideation and validation of ideas. The innovation process revolves around three meetings on the following topics; strategy, ideas and planning. For every meeting a process is designed that interacts with the roadmap and makes sure that ideas added are actual customer needs and will create an impact for the customer.

1 Introduction

The project brief will be introduced and the first research questions will be proposed. These research questions will be redefined after preliminary research

Project brief

This graduation project is performed for the master Strategic Product Design at the faculty of Industrial Design Engineering at the Technical University Delft. The project is in collaboration with the neuromarketing company Alpha.One, one of the few Dutch neuromarketing companies. Alpha.One brings marketing advice based on measuring biological data, with which it advices their customers. Since a year the company also includes a startup called expoze.io. This startup has created an eye tracking prediction platform, with the use of artificial intelligence it creates eye tracking heatmaps. This is a more scalable concept than neuromarketing consultancy.

Alpha.One is looking to switch to a more scalable solution with expoze.io, putting more effort into building this platform. Scalable solutions offer a better business plan as the amount of customers is not linked to the amount of employees of the company, which makes expoze.io an interesting neuromarketing investment.

This startup is quite young, it has moved from beta to first public product in June of 2020. The freedom that is present in young startups gives room for fast innovation, but this can also cause some chaos. The future plan is unknown, so the people do not know what they are working towards.
Despite this, the expoze.io team wants to look at what the future opportunities for the expoze.io platform might be. This will be important to gain sustainable competitive advantage, it will also mean that development will be done according to a plan, because there will be a goal to reach.

The initial brief was outlined as follows:
• What does the future of expoze.io hold?

In order to answer the question of what the future holds it is most important to understand what the future of the company might be. Research will need to be conducted in order to understand the customers, the market, competitors and future trends. Creating an understanding of potential market gaps and opportunities will be important to creating a vision for the future. The outcome of this research will lead to a future vision. Next will be explained what a future vision is, how this relates to a company purpose and customer value and why this will all be gathered in a roadmap.

(Future) vision
The future vision is central in defining what the future of a company will look like. Therefore we will explore what defines a future vision. Brătianu (2008, p.20) defines the future vision as; an idealistic projection of the company in an undefined future, in a mature and successful position. The purpose and the vision strongly are related, the vision is a projection of the purpose of the company in the future. (Collins & Porras, 1996, p. 20)

The vision is also a strong integrator (Bratianu et al., 2011, p. 12). People that share the same future vision for their organization will try to create the best solutions to make that future happen. A vision therefore integrates knowledge from all individual employees and uses this as a driving force to increase the organizations intellectual potential (Collins & Porras, 1996, p. 20). Mirvis (2010, p. 317) also states that a vision is a motivational driver. This indicates that the vision should connect with the employees and should energize them to make the potential future vision happen. Workshops are very important to make sure this happens, this will be explained further in the "roadmapping challenges" chapter and the methods section, where workshops will be further explained.

In the detailing of a vision it provides an intellectual framework for company strategy. It defines a strategic direction and presents a conceptual map of how a company moves from its current reality to a desired future state. (Mirvis et al., 2010, p. 316). This is often referred to as a roadmap. Roadmapping will be explained after the purpose and customer value.

Purpose
To find the future vision, first the purpose must be formed. The purpose of the company is often referred to as the mission statement, as the mission statement is defined as the purpose of the company (Mirvis et al., 2010, p. 316). Therefore to make it more obvious what this is about in this report it will be referred to as the purpose. In the following report it is proposed that the mission or purpose statement clearly states "the foundational reason the organization exists" (Cady et al., 2011, p. 70). In a for profit company the statement often centers on issues dealing with quality, service, customers and shareholders (Cady et al., 2011, p. 76). Brătianu & Bălănescu (2008, p.21) defined the mission statement in other words; "Mission reflects the way in which vision can be transformed into a tangible existence for the company. In other words, a company exists because it must create value for consumers and satisfy their needs".
The latent value of the customer is strongly linked with the purpose of the company, because it would not exist without the customer. The product needs to create value for the customer in order for them to want to use it. Therefore the customer value has to be found.

"An effective purpose reflects people's idealistic motivations for doing the company's work. It doesn't just describe the organization's output or target customers; it captures the soul of the organization" (Collins & Porras, 1996, p. 68).

Customer value

Customer value seems like quite a vague term, associated with multiple meanings. The two most often used meanings are "value of the customer" and "value for the customer". The first explains the business value that the customer represents for the company. The second definition, the one used in this thesis, is the perceived value that the product generates for the customer (Komssi et al., 2013, p. 46).
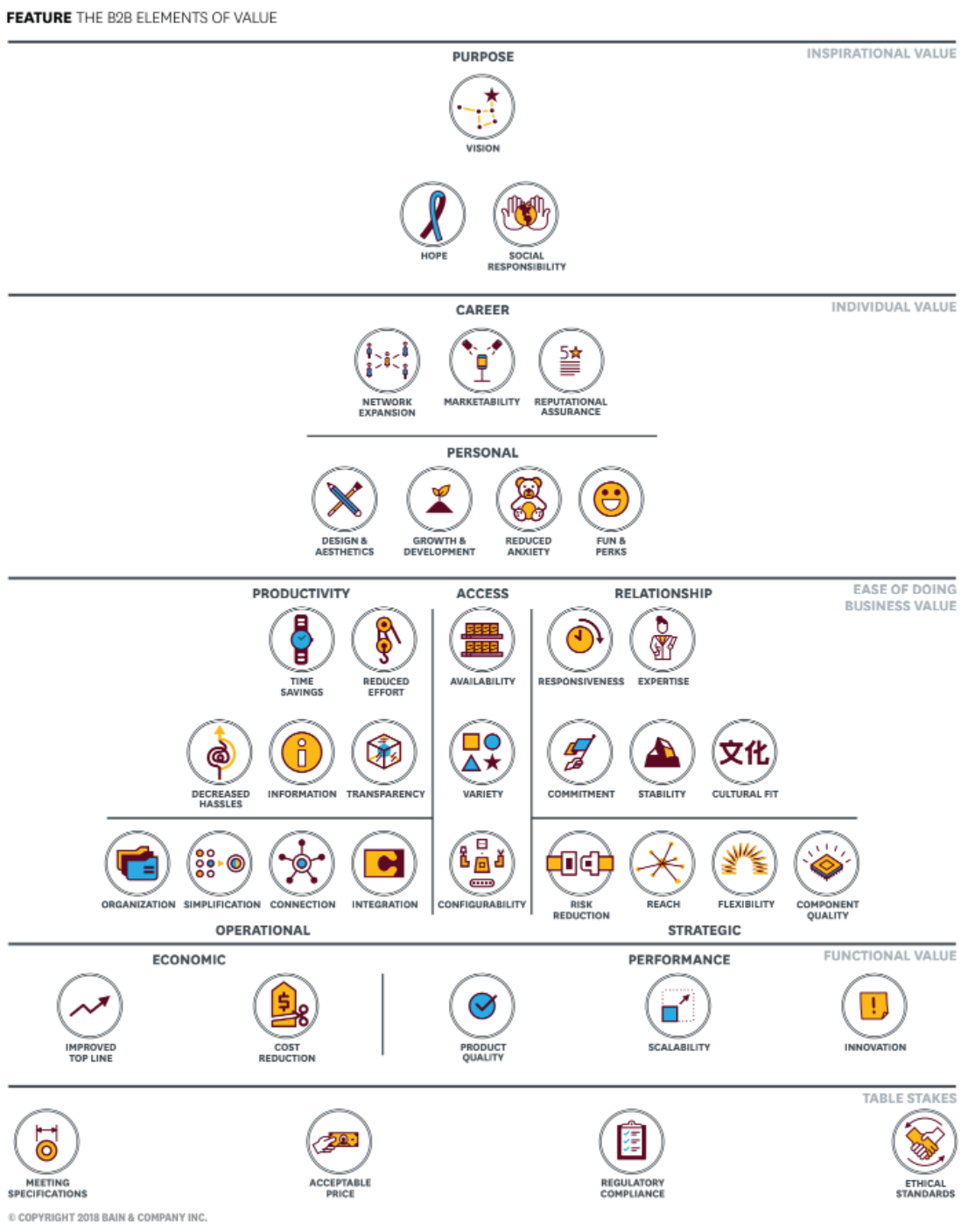

Figure 1. B2B elements of value (Almquist et al., 2018, p. 9)

This customer value represents the reason why the customer uses the product, if the product benefits the user he will use it and in turn find it worthy of monetary value. If this customer value is increased this will increase the monetary value that the customer thinks it is worth. In a sustainable business you first create value for the customer and secondly extract some of that customer value in the form of profit, creating value for the firm (Kumar & Reinartz, 2016, p. 36).

From a customer's perspective, customer value is what they "get" (benefits) relative to what they have to "give up" (costs or sacrifices) (Zeitham 1988). The business to business elements of value (Almquist et al., 2018, p. 7), as presented in Figure 1 address these benefits more in depth. They have sorted these values in a pyramid, more objective values are presented at the base and the more subjective values at the top of the pyramid. This model is based on the hierarchy of needs that the psychologist Abraham Maslow first described in 1943. Needs range from basic (food & rest) to complex (self-esteem & altruism). These subjective values could also be described as latent values, as they are more difficult to find.

As is described above, an effective purpose captures the soul of the organization. This will not be described by the functional values you solve for the customer, but the more subjective values will capture this to more depth.

Therefore in this thesis it is necessary to find more latent values, as these reveal a deeper insights to why the customer uses the product and in turn will present the purpose of the company. Which will inspire the employees and create sustainable business.

1. Vision is the 'What:' the picture of the future we seek to create.
2. Purpose is the 'Why:' the organization's answer to why we exist.
(Mirvis et al., 2010, p. 317)

To sum up these three definitions, as shown the purpose is lead by the customer value, as the purpose of the company is to create value for a customer. The future vision is a projection of the purpose of the company in the future. This means that first the customer value needs to be determined in order to create a company purpose and from this purpose the future vision will be projected. The conceptual map to work towards this future will be explained next.

Roadmapping
Once the future vision is determined it is important to create steps to get to this desired future. This is where roadmapping will be used. The roadmap will essentially be the final product on which the employees can see the purpose, future vision, market gaps and customer value and most importantly the steps to get there. Roadmapping defines the strategy of the company over time.
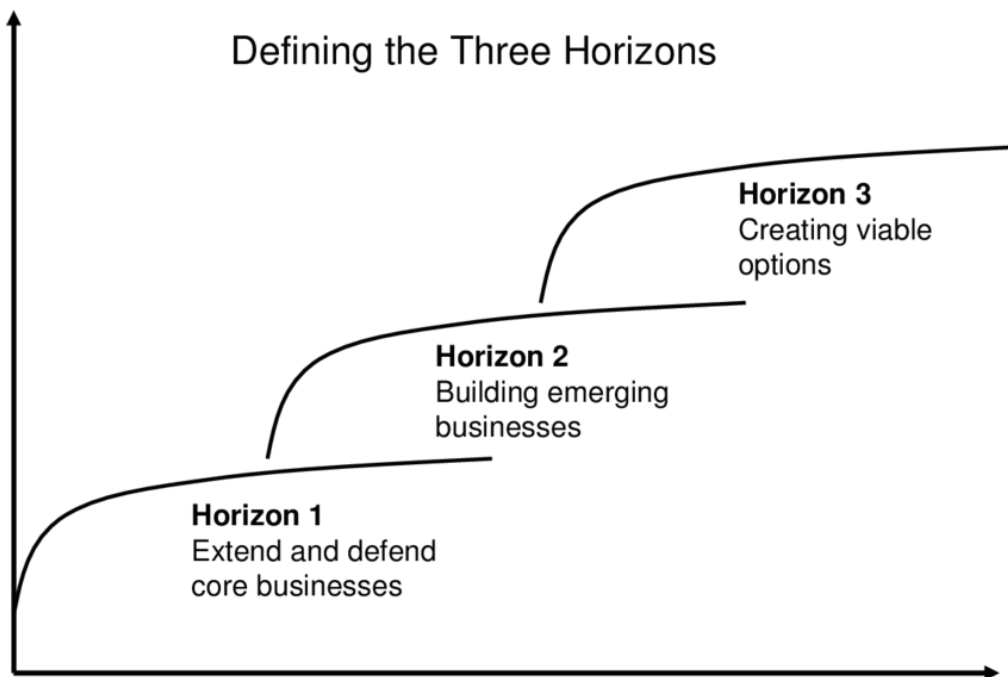

Figure 2. Three horizon model

This method lays the future out in three horizons based on the three horizon model, see Figure 2 (Baghai, 1999). The first horizon is generally defined as maintaining and strengthening the core business, but since expoze.io is basically a startup the first horizon will be defined as building the core business. The second horizon is to extend the core business and create new opportunities. The third horizon is based on taking advantage of disrupting opportunities.

A roadmap is based on market research, customer insights, SWOT analysis, input from employees, etc. (Phaal et al., 2008, p. 138). All the context that can be found to create a better understanding of the company and the future of the market will influence the future vision and in turn influence the roadmap to get to that vision. The roadmap aims to make the complex path that works towards the future vision more manageable. (Phaal et al., 2015, p.3)

The first stage of the roadmapping process aims to bring together 'outside-in' (market-pull) and 'inside-out' (technology-push) perspectives. "The development and synthesis of good quality commercial and technological intelligence is crucial, aligned with the business vision and purpose, as a prerequisite for identifying, understanding and appraising opportunities and threats in the external environment" (Phaal et al., 2008, p. 139).

The different layers, consisting of several sections such as market, product, and technology (Komssi et al., 2013, p. 49), will be mapped on time to create the roadmap, in this way the future visions can be reached. The layers consist of the key elements of focus, such as technology development / features / customer values / partners / trends. The layers interconnect to show how everything relates to each other. For example, certain technology development will come from certain trends and customer values.

Creating a roadmap is heavily based on communications between different segments of the company (Phaal et al., 2015, p.4), for example: design, marketing, research, technology. These departments all have a vision in their mind that is more focussed towards their departments, and these must fit the overall vision of the company. The roadmapping process aims to build consensus between the departments (Phaal et al., 2015, p.4), that is why workshops and meetings will be very important in the roadmapping process.

"A key benefit of roadmapping is the sharing of knowledge and the development of a common vision of where the company is going." (Phaal, Farrukh, & Probert, 2001, p. 17).

Preliminary research questions
Based on these important definitions that are related to future strategy the following research questions are proposed;

What does the future roadmap of expoze.io look like?
- What is the future vision for the predictive eye tracking platform expoze.io?
- What is the purpose of expoze.io?
- What is the customer value of expoze.io?
- What are market gaps / differentiating factors in the market?

Preliminary research will be conducted in order to make sure that the most applicable research questions have been proposed. Challenges of the company, product and roadmapping will be explored to find interesting opportunities. After the preliminary research the research questions will be redefined to adapt to the challenges that arise.

In this report some figures have been simplified and their detailed counterparts have been put in a confidential appendix. This is due to the company not wanting to give away detailed information to competitors. The authorised persons will be able to see this confidential appendix.

2 Preliminary research

The main reason for doing preliminary research is to get more immersed into the context of the project brief. It gives more context into if the problem that is presented is the right one to solve. In order to see potential problems with the brief interviews will be done with the product manager, CEO and both front- and back-end developers. The product will also be analysed for potential customer experience problems. The company itself will be analysed to learn their way of operating and discover potential problems.

Internal documents of expoze.io presentations to investors will be reviewed, also documents about strategy will be reviewed in order to create a clear view of the strategy of this new product.

Roadmapping literature will also be reviewed in order to specify any challenges with the roadmapping process that could have an effect on the company. Addressing these challenges could prevent potential problems with the roadmapping process for the company in the future.

But first neuromarketing and the technology behind the product will be discussed in order to get a better understanding of the product. This will help understand what ideas will be technologically viable and what future technology trends could fit within the platform.

Neuromarketing & eye-tracking

To first understand the problem statement proposed by Alpha.One it is important to know the context of the subject. Alpha.One is originally a neuromarketing company, meaning they research and analyse human behaviour for their clients and give them advice on how to improve their products or advertising campaigns.

The new product by Alpha.One is called expoze.io, expoze.io is an Artificial Intelligent (AI) Eye tracking platform, see Figure 3, that predicts eye tracking heatmaps. This means that no physical customer research has to be done, the AI can make the heatmap without doing any customer testing. The product will be further explained in the product section.
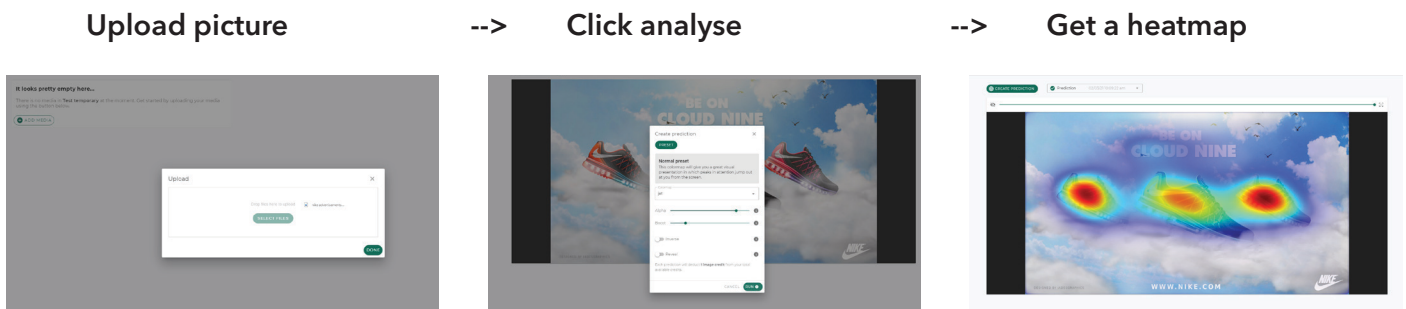
Upload picture   -->   **Click analyse**   -->   **Get a heatmap**

Figure 3. expoze.io platform

What is neuromarketing?

Alpha.one is a neuromarketing company. Neuromarketing is derived from neuroscience. Neuroscience practices links between many different fields of interest (biology, chemistry, medicine, computer science and psychology) and aims to explain the relationship between our brain and our behaviour (Mazurek, 2016).

The biggest sectors neuromarketing is used in are the following:
• Consumer behaviour research
• Testing advertisement campaigns
• Testing website design
• Analysing package design

The main technologies that are used to research the human brain and the relationship with behaviour can be seen in Figure 4. They are separated into internal measures, which mostly scan the brain and external measures which measure changes externally such as sweat from the skin or with a heart rate monitor.
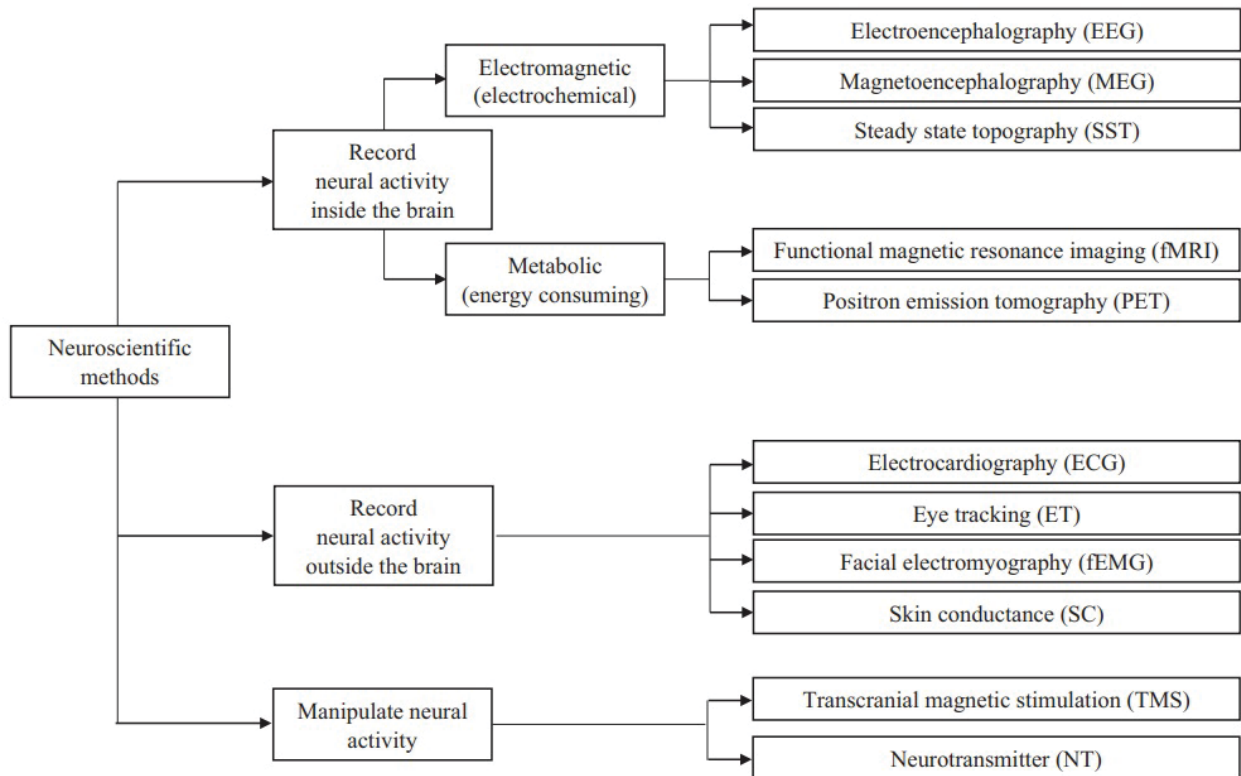
Figure 4. Common neuroscientific methods for neuromarketing (Lim, 2018)

The main technologies used by Alpha.One to do behavioural research are **EEG** and **eye tracking**, as is the standard in most neuromarketing companies. More about eye tracking will be explained below, as expoze.io is based on eye tracking studies and aims to replace them. The relation with EEG studies will also be explained as these studies compliment each other.

What is eye tracking?

Eyetracking is a technology used to understand where people are looking, where people look first, what they ignore and where they look most when presented a stimulus. Eye tracking nowadays is often performed by Infrared sensors, these sensors can track the pupil with great precision. These IR sensors come in lab formation or in mobile eyewear. The mobile eyewear makes it easier to do in-store eye tracking. Webcam solutions are also available, but these are less accurate, this is also based on the quality of the webcam used and the test setup (Genco, n.d.). In essence these solutions all do the same thing, track where people look.

The two types of data collected by eye tracking are fixations and saccades. Fixations are moments where the eye is relatively still and is taking in information, lasting around 200-500 milliseconds. The eye can only focus on a small part of the entire visual field in a single fixation, so it is necessary for the eyes to move frequently. Saccades are rapid eye movements, only lasting around 20 to 40 milliseconds. Together they can form a gaze path or a heatmap (Figure 5), these are used to communicate what the test subject has seen (Rayner, 1998). To generate a valid quantitative eye tracking study 20 subjects need to be tested (Nielsen Norman Group, 2009), which takes a lot of time.
Qualitative studies can also be performed, in this case 5 test subjects are required (Nielsen Norman Group, 2009), in these studies the subjects are required to talk out loud. With these studies deeper insights can be acquired.

Eye tracking as a neuromarketing tool is really intuitive, because people naturally look at what is grabbing their attention. Thus if you track eye movement in relation to a stimulus, you can measure saliency. Saliency is defined as; the quality of being particularly noticeable or important. This is important to understand what the expoze.io platform is most useful for. Expoze.io shows what is most noticeable in an image. This will be further explained in EEG & eye tracking the next page.
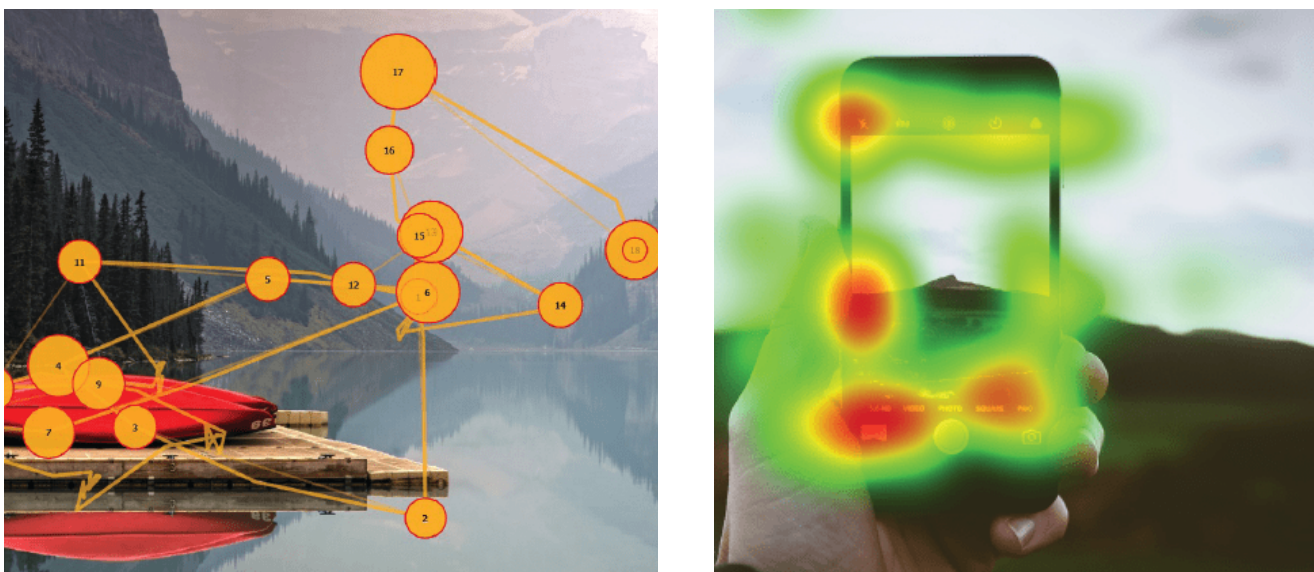

Figure 5. Left - The gaze path shows the fixations and saccades in succession and numbers these in order of flow.
Right - The heatmap shows the areas that were watched for the most time in a more red color. (Farnsworth, 2018)

Eye tracking & EEG

Alpha.One has now made eye tracking faster by removing the test subject from the cycle with expoze.io. This means eye tracking studies can be done quick and easy, but the downside is that EEG can not yet be replaced by AI. Also qualitative eye tracking studies can not be performed anymore as test subjects are needed for this. The expoze.io platform is only based on quantitative eye tracking, which makes the depth of the insights more shallow.

Most times in neuromarketing eye tracking and EEG are combined. When a certain spot or object has the attention of the consumer, the processing of it is enhanced. Although seeing does not reflect more attention or remembering (Dimpfel & Morys, 2014, p. 125), processing of an image and attention is related, this is an important distinction. By using EEG to track brain activity additionally to eye tracking, processing can be measured. This way saliency can be compared to processing, and thus attention can be measured.

Furthermore seeing is not necessarily liking (Husić-Mehmedović et al., 2017). In this research package design was tested using eye tracking, in this study viewing time of a certain brand of packaging was compared to the liking of the packaging. The viewing time and liking did not correlate, thus seeing is not necessarily liking. This is something the analysts of eye tracking studies tend to forget, because so much focus is on getting most attention and not on creating the best package design.

In conclusion

Why it is so important to make the distinction between saliency and attention is that expoze.io is a prediction tool that is just based on eye tracking, without EEG expoze.io is not able to measure attention, just saliency. In short, expoze.io shows what is most noticeable in an image, eg. what a person will see in the first 3 seconds, this is defined as saliency. It can do this without ever doing a study with test subjects. This shows the limitation the platform has when just the eye tracking is developed into an AI, but it also shows the potential the platform has if EEG could be developed into a predictive AI. This chapter also shows which other measures could be eventually turned into predictive AI, such as fMRI.
More about the product will be explained in the next chapter.

The product

In order to make sure the right research question is solved it is important to understand what the challenges with the current product are and where these challenges come from. Therefore some interviews with employees were conducted and the product in its current state was examined. Below the outcome of this is explained.

The new product coming from Alpha.One is expoze.io, an eye tracking tool. This tool is an artificial neural network trained tool, able to generate heatmaps without testing on actual people. Expoze.io is essentially a predictive model of visual salience. Advertisements with high salience are more likely to break through the clutter. For advertisements or products essential elements need to be salient to make sure people will see them. Improving the salience of a buy button on a website, or a call to action in an ad can make or break performance.

The tool is trained by actual human eye tracking data, based on studies with hundreds of people. This takes away errors that could come from small test groups. This tool has just entered the market and will have some real advantages over regular eye tracking, such as faster test times and cheaper tests. The tool can now perform an eye tracking test in seconds, compared to days in the past when testing on real people.

The algorithm

In this report we will not go into depth on the way the algorithm works, as this is not relevant to the strategy. A simple explanation of how the algorithm has been created is as follows.

The technology behind expoze.io is machine learning. Through machine learning the input, an advertisement, generates an output, a Salience map. Machine learning is when the algorithm transforming the input to the output is not a set of predefined rules designed by a programmer, but is automatically derived from a large set of training data, hence "machine learning". In machine learning, the algorithm that sits between input and output is an artificial neural network.

The machine learning algorithm in expoze.io was created in a process called supervised learning. It uses a large set of training data for which the target output is defined by humans. The training data used were advertisements and the corresponding saliency map for this advertisement. At the start of the training cycle the algorithm will mostly produce wrong outputs(saliency maps). The algorithm then corrects for these errors during many training cycles in order to achieve mostly correct outputs.

Obtaining enough labeled training data is the bottleneck in developing algorithms for most applications. The ImageNet project, for instance, is a large, publicly available database containing over 14 million hand-labeled images. The training data used to train the expoze. io network in order to generate the salience prediction consists of ten thousand images. For each of the images the mean saliency of 50 individuals was defined as the output.

The expoze.io neural network did not start the training cycle without knowledge, it is pre-trained to recognize over 20,000 objects from the ImageNet database. Therefore, before the network is trained to generate salience predictions, it already holds a latent representation of object identity. During the training phase, the weights are modified to predict the target salience map from any given input. The importance of this will be shown at a later stage. It can correctly predict that for any pixel that it has a higher salience than any other pixel 87% of the time.

The model is now only trained on natural images and advertisements, not on websites. The neural net for websites will be developed around june 2021. This limits the potential customer base for expoze.io for the coming year.

The prediction algorithm would be hard to copy because the algorithm needs to be trained for half a year, based on interview with the back-end developer. This makes for an early entrants advantage in the market.
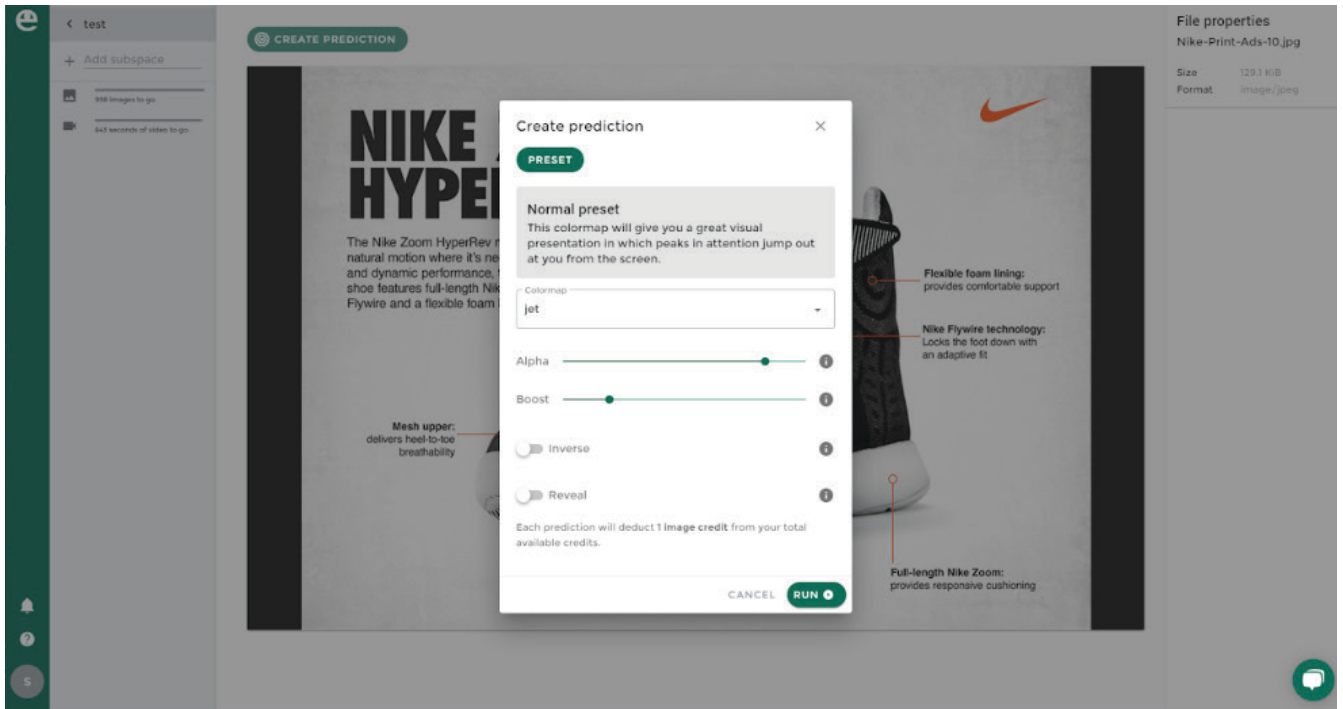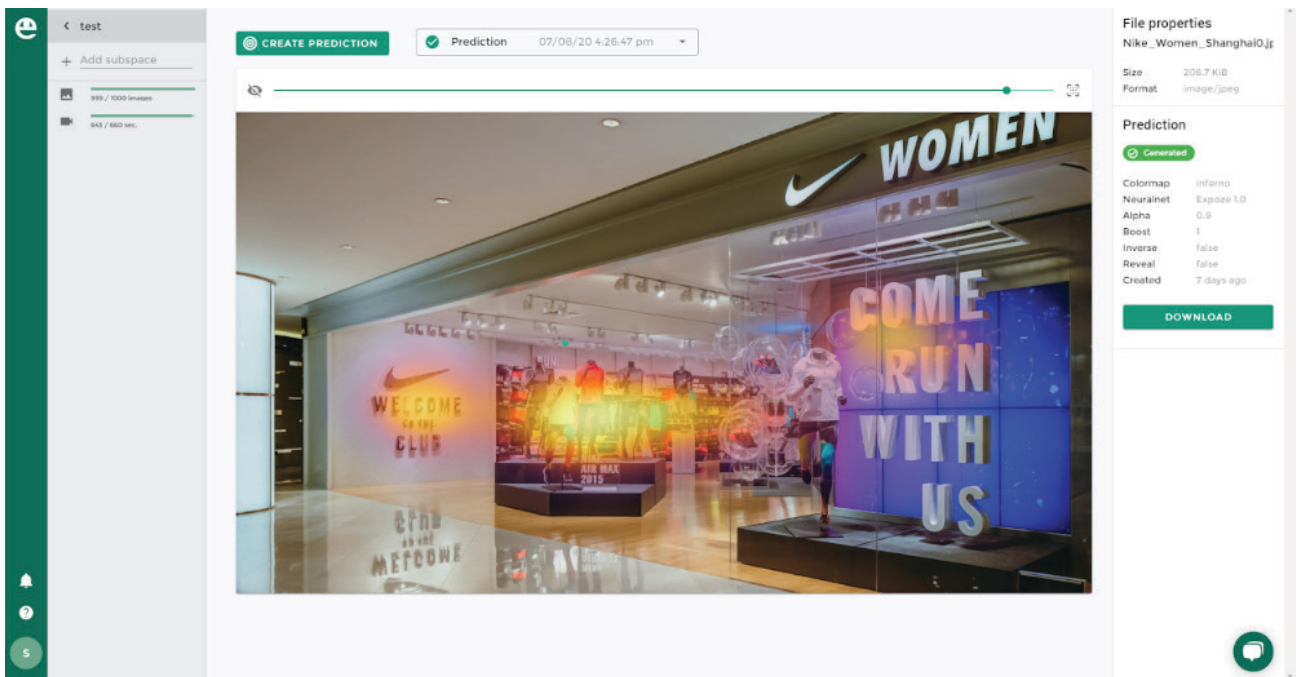
Figure 6. Creating a prediction menu

Figure 7. The outcome

The platform

The development of the product started in june of 2018 by building the beginnings of the neural net. The neural net was put into use as an MVP(Minimal Viable Product) in june of 2019 with a basic front end, in which beta users could input their advertisement and get a heatmap in return.
By testing with their beta customers the algorithm was further improved and a product with a working user interface was launched in june 2020, before this it was already in the testing phase with the beta customers.

The platform is a website based application on which the user can upload their photos or videos and create an eye tracking prediction. Once logged in the user can see some workspaces, in these workspaces the files are managed. File management is something that is being optimized, as there are not many options for managing the files (sorting on date, file size, deleting, etc.). Once an image is uploaded you can create a prediction, to create a prediction a customer has to go through an options screen see Figure 6. The outcome of the prediction is a heatmap that visualizes saliency. The red areas are more visual salient, see Figure 7.

The options screen the customer has to go through to create a prediction is not yet that user centric, as seen in Figure 6. To create a prediction the user has to go through many settings that, to most people, are not easy to understand. The names of the colormaps do not give people an indication of what the map will look like, neither is there a preview of what the outcome will look like. Alpha and boost are vague terms that do not give an indication of what will happen.

An easy fix to create a more easy to understand product is to move many of the options to a later stage, after a simple analysis is performed and the outcome can be tweaked based on these options if the user desires to do so.
When talking with the developers the conclusion was that the back end does not operate in that way, thus it can not work in this order. The easier option is to create explanations on the options given. Here it shows that the company lacks the viewpoint of the customer, this will be elaborated later in the company part.

Next to that, the button on top "preset" is actually a drop down menu, something that it does not indicate visually. The fix to this is quite easy but it has not been fixed in the six months of my thesis. This might be the result of the company lacking a designer or at least the viewpoint of the customer, this will also be elaborated on further in the company section.
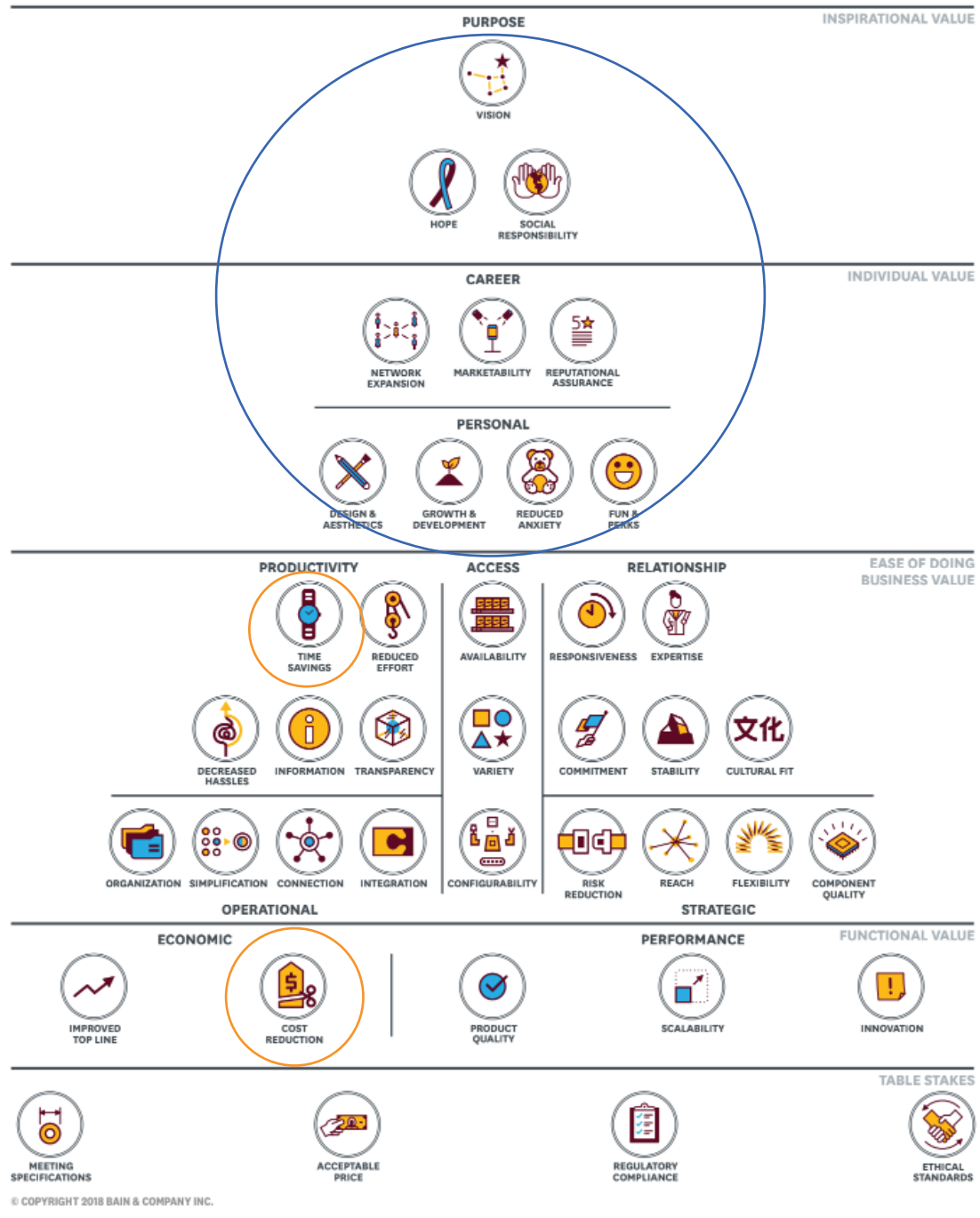
Figure 8. B2B elements of value

Customer value

The company knows well what the objective customer value is of their product, represented in orange in Figure 8. The objective values compared to regular eye tracking are that it is faster and cheaper, because the test subjects are eliminated from the process. These values are currently mostly used in the marketing material, as shown in Figure 9 and Figure 10.
The company still lacks the knowledge of what the more subjective or latent value is that they bring to the customer, indicated by the blue circle. The latent value is, as was explained before, a crucial part in creating a purpose for a sustainable business. Through interviews with the product manager and back-end developer these more subjective values are still not well understood and are something that would also be interesting for them to find out.

Figure 9. expoze.io website

Figure 10. LinkedIn advertisement

Focussing on objective values will not bring long term competitive advantage. In order to create a better understanding of the customer more top level values need to be understood. Why do people use this product, in what way does it help them on the individual level or the inspirational level, how does it help them reach their goal? If these values are understood, long term customer value can be created. Understanding this value and purpose of the product and company will be crucial in creating a future roadmap. Customer interviews will be crucial to find these values.

In conclusion
Machine learning is for automation and prediction, eye tracking is not the only thing that can be replaced in neuromarketing, but it is the first thing. Creating more neuromarketing prediction analyses in the future could therefore be possible. Training neural networks is something that takes about half a year and therefore is good for competitive advantage.

More importantly, the platform still has issues with the customer experience, as the user friendliness is not yet optimized. The company also lacks knowledge on the subjective value delivered to the customer. Based on the conclusion, that the customer experience is not optimized and the subjective value is not known, interviews will be conducted in order to identify the pains with the product and the subjective value. Which will be important to define the purpose of the company.

The Company

In order to create a roadmap it is important to understand the structure of the company and how it operates. It is also important to know if the company already has strategies in place and to know their points of views. From interviews with the employees the following was concluded.

Structure between Alpha.One and expoze.io

Alpha.One is the neuromarketing company, underneath is the expoze.io team, which has the focus to build the platform. The management is intertwined between the two companies, see Figure 11.

Alpha.one by itself is a neuromarketing company, mainly focussed on EEG, fMRI and eye tracking. Till now they used only real human participants to test marketing material. The company also consults their clients on how they should improve their materials. The company tests and improves; commercials, TV programs, brand strategy, creative concepts, packaging, in-store & usability.

Alpha.one is currently in scale-up phase, founded in 2014 by Roeland Dietvorst & Martijn Bakker. Since july of this year Roeland has left the company.
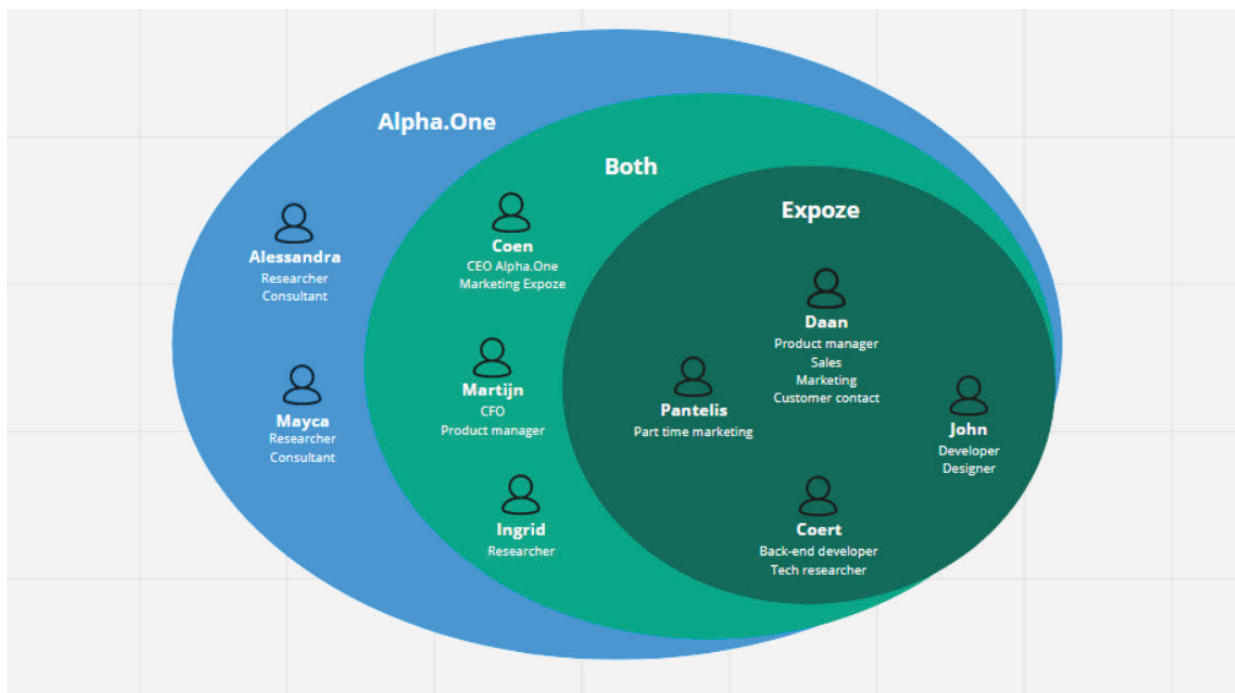

Figure 11. Company structure

Strategy, Vision and Purpose

Through an interview with the CEO of Alpha.One it became clear the was no documentation on strategy, this includes the lack of a company purpose or vision statement. No documentation of this sort could either be found on the common cloud drives. The CEO had strategy in his mind, but this was not made evident in documentation. The strategy that the CEO talked about can be see in confidential appendix A

This strategy is interesting and something that could be used when developing the future vision. The strategy framed by the CEO lacks some detail and does not look far into the future. The downside of this is that the strategy is mostly in the minds of the people and are not shared for inspirational purposes so the employees can work towards this goal. Without this it could cause confusion as the people have no common goal.

Product development Process

Through an interview with the product manager about the roadmap and sprint planning it became evident that the company did not have a documented plan, neither for the short term or the long term. Sprint planning was done from sprint to sprint, not based on any quarterly planning.
The development process that is used is a scrum process but simplified. New insights that get mentioned by customers will be put on the backlog in the form of customer stories. The product manager and developer then discuss which stories have the most priority and the stories are planned in the sprint accordingly. This planning is not based on a bigger plan such as a roadmap, but mostly on the product manager and developers personal views and some customer references. This is something that would have to change when a roadmap will be used. Planning of sprints should be derived from the long term roadmap as to work towards a goal.

The agile process normally consists of rating a story on the time it takes for a developer to complete this story, in this team it not done like this because they only have one developer and thus would not benefit the process in terms of time.

The ideas for the sprint do not come from a roadmap but from a Jira backlog where customer stories are defined. This creates difficulties with planning according to a more long term plan. It also creates potential planning of features that only one customer would want, as this customer story will not be validated with other customers. This could make the product not scalable and might make the product less easy to use for the other customers.

Planning without a plan does not work and will result in a chaotic product development cycle. Therefore it is important that a long term roadmap is in place on which a short term roadmap can be derived. Next to that for the company it is important to create more structure in the planning of the sprints, with planning more based on the roadmap and validated customer input.

Since the product was launched the designer was let go. The designer was hired to create the UI, after this was done he was let go, "as there was not much work for him anymore". This was the view of the management of the company. Which shows their view on the value of the customer experience of the product as less important. The product interface has not been optimized with user feedback, which is critically important to create a product that people love. Afterwards a new researcher was hired indicating their more technical views.

Technology focus

The website platform currently is developed by one developer, John. He works on the design and development of the touch point with the customers. Coert is developing the back end of the product, the algorithm and how the images are processed and delivered to the platform.

Meanwhile multiple projects are being worked on for future development. Coert, Ingrid and Alessandra are working on future development of technologies, for them three interns are hired to help develop these technologies. This means a lot of the company's resources are into technology development, while little effort is put into product experience as this is only part of the job of the developer.

Overview of projects:
- EEG prediction
- Improving algorithm (Food & Sexual drive)
- Brand tracking
- Website & UI algorithm

The company has a real focus on creating technology and a mindset that there is only competitive advantage if the technology is more accurate and the platform delivers more features than other platforms and if this is created, customers will come (As Martijn said during a meeting). This shows how technology focussed the mindset in the company is. The demand for these features are not tested, but the projects are already worked on. This could create a form of feature creep. Growth can also come by creating a better customer experience than competitors, creating features that better suit the needs of their customers.

In conclusion,
The company is working on the product without a long term plan, as this plan is not documented anywhere in the company. It is working on hiring more researchers to look into creating more technological features, before the base product has been made user friendly. It is important to put out an MVP quickly and then iterate to create a better product, but already putting most resources on the long term future while not having a stable basis might create an adverse effect. Customers currently invested in the product do not have the best customer experience and it will take longer to achieve a great customer experience as the efforts are put into creating future technology. This could mean that customers will leave before this future is reached because of a bad customer experience, this is something that should be avoided. The focus is on creating technology, not creating a human product. This is where a shift in mindset and in process should help the company.
The product is being developed by a technical team, without much input from a designer to help with the customer viewpoint. This leads to a product which is difficult to understand and thus harder to use.

Roadmapping challenges

In order to create a roadmap that will be used and updated by the company it is important to understand common challenges with the roadmapping process. As the thesis not only is about generating the roadmap but also about nurturing the roadmap. These challenges will later be compared to the challenges the company faces and will help formulate problem statements.

Keeping the roadmap alive

One of the main challenges for companies is to keep the roadmap alive, as depicted in a survey with 2000 UK manufacturing firms about the main pain points of roadmapping. Keeping the roadmapping process 'alive' on an ongoing basis (50%), starting up the TRM (Technology Roadmap) process (30%), and developing a robust TRM process (20%) were the main challenges in these firms (Phaal, Farrukh, & Probert, 2001, p. 3). This is supported by a different study (Yoon et al., 2007, p. 51) which says that many companies, especially medium and small companies, still have difficulties in implementing and sustaining roadmapping. This is due to a number of factors, mainly the time, cost and effort associated with maintaining what can be a complex process.

As the purpose of the project is a roadmap that will actually be used and is not just for inspiration, these pain points will be really important for creating a usable roadmap. A big opportunity therefore is to create a roadmapping process which is low on time, cost and effort.

Involving people

"Future visioning often implies leadership, especially when it comes to shifting the vision from the stages of imagination and creation, to the realization. … If only one person takes sole responsibility for future visioning directing the course of change, it is not just creativity that may get lost – the team's commitment to the vision may dwindle if participants do not take personal pride in pursuing the vision." (Simonse, 2017, p. 88) Involving people in the roadmap creation is also a key part of keeping the roadmap process alive and making sure people feel a connection with the roadmap.

Emerging strategy

Keeping the roadmap alive is not just a challenge for the people in order to use the roadmap, it is also important for the strategy to remain relevant. The roadmap, as it will be delivered, will just be the intended strategy, but along the way new opportunities and thus strategy will arise. This will create the Emerging strategy (Mintzberg & Waters, 1985, p. 258). Including emerging strategy is very important to adapt to the market, if a company sticks to their intended strategy it might fail to adapt and the company will fail. For example Nokia failed to step in the opportunity of the smartphone market and since has paid the price for it. "the full value of roadmapping can be gained only if the information that it contains is current and kept up-to-date as events unfold." (Phaal, Farrukh, & Probert, 2001, p. 14)

Short and long term connection
In a paper about roadmapping problems in practice (Komssi et al., 2013, p. 54) two software product companies were researched. Both these companies recognized the challenge when making strategy based decisions for product development. "The comparison between long- and short-term requirements was perceived as difficult". This problem is also seen in the expoze.io team, as discussed in the company section. Therefore a great opportunity would be to integrate the short-term roadmap with the long-term roadmap in the roadmapping process.

Feature driven mindset
This study also showed one of the challenges was an overly feature-driven mindset, which ended in a roadmap that focussed on the prioritization of low level software features. In more mainstream terms this is most often called feature creep. As the team of expoze.io mainly consists of technical people this is something to look out for. This is especially true since there is no roadmap and most decisions are made on what the customer demands, which are often mostly features.

Prioritising customer requirements
In a study by Suomalainen (2011, p. 971) it was found that prioritizing customer requirements was considered a continuous problem and a challenge in the roadmapping process. In this study it was also said that prioritizing features is difficult and time-consuming. As the features are directly related to customer requirements this both makes sense. As said above prioritization should not end up with prioritization of low level software features, so this is a challenge to be solved.

To create a roadmap a future vision is needed as a dot on the horizon to work towards. The insights from research and customer input will be used to create the vision and the roadmap. An important part of the roadmap is that the team feels that they are part of the creation, otherwise the implementation of the roadmap will not be that straightforward. Input from the people working at Alpha.One is already needed as the strategy is mostly in their heads and not on paper, this will involve them in the strategy. Another opportunity is to facilitate an ideation session on the vision creation.

Redefining research questions

After doing preliminary research surrounding the problem statement of: *What does the future roadmap of expoze.io look like?* Some new opportunities and challenges have arisen. These opportunities will be converted to research questions to make sure the project and initial problem statement have a better chance to succeed and be solved.

Innovation process
In order for the roadmap to be succeed it will have to be used, the use of the roadmap depends on the process surrounding it. As described in the last chapter, keeping the roadmap alive, starting up the process and developing a robust process are the main challenges. A structured innovation process, based on written down strategy, is missing in the expoze.io team and the Alpha.One team in general. Therefore it is most important to create an innovation process that involves the roadmap.
As explained in the company section the innovation process mainly consists of really short term decisions, based on their own assumptions. The team uses a simple scrum process, which is mainly based on short term findings. Roadmapping is long term strategy while scrum is short term, connection between long term and short term was also seen as a roadmapping challenge. Therefore it is important to create an innovation process that incorporates the long term roadmap and connects this with short term development.
Making short term decisions based on long term goals is therefore also a great opportunity to create a sustainable business and a challenge to solve within the innovation process.

A key benefit of roadmapping is the sharing of knowledge. This is something that lacks in Alpha.One in terms of process. The company has to talk about their knowledge and vision about the future in order to create a vision that aligns well between the teams and is relevant. This is an opportunity for the expoze.io team to take on. Communications between teams are there, but there are no scheduled strategy meetings, this is something that is quite important for the roadmap to succeed. This is where creating an innovation process will be a big opportunity.

A big challenge in roadmapping is keeping the roadmap alive, and making sure that the roadmap is something easily adaptable. As the roadmap needs to adjust for new knowledge and market gaps. It is a big opportunity to create a process in which the roadmap will be used and updated with emerging strategy. An intended strategy here is important, but since the company is in a startup phase it will be also important to adapt the strategy and not be stuck with this vision and strategy for the next 5 years. This is because the market can change and the company needs to adapt for this change, new opportunities may arise along the way. Therefore it is important to create a process in which the company communicates with each other, brings in their knowledge and insights to look at viable strategies. A big challenge in keeping the roadmap alive is to create a roadmapping process which is low on time, cost and effort. This is especially relevant since the team of expoze.io is so small.

These lead to the second research question;
How could the roadmap be adopted into the operation of the expoze.io team? (process)
- How to build an innovation process that fits a small startup team? cost, time, effort efficient
- How to make sure the team interacts with the roadmap?

The team is originally a behaviour consultancy team, a team which does research and analysis on the outcomes of experiments and gives advice towards their clients. The nature of this team means that when it comes to expoze.io is that the team is really technology oriented. As their focus was on building good experiments, it now is about building a good product which can replicate those experiments. The company is also business oriented, but not so much human/client oriented. The innovation mainly is pushed by technology and less through customer needs. This is where a shift needs to happen in the expoze.io team in order to improve their innovation process. The balance for this shift will be explained next.
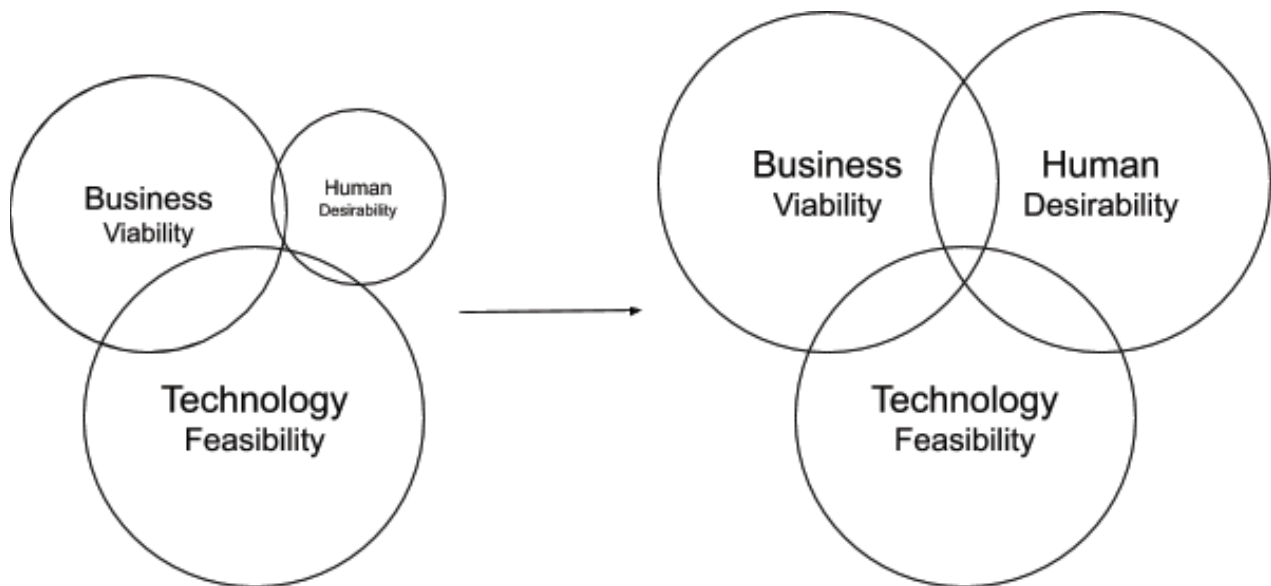
Figure 12. The shift in the three pillars of Industrial Design Engineering

Business human technology

The three pillars of Industrial Design Engineering are Business, Human and Technology, as mentioned in the Thesis manual of Strategic Product Design. The project should integrate these pillars, as the manual says. This trifecta has been popularised by IDEO(Brown, 2009) with their three circles of innovation; feasibility, viability and desirability. In the popular literature often referred to as the "three lenses of innovation" or the "sweet spot of innovation". It is called the sweet spot of innovation as there should be a balance between these three pillars in order to create innovation that has impact.

These three circles are a valuable part of innovation and must all be considered. These three circles can be most easily explained as follows.

- Desirable = People want it
  What's the unique value proposition? Do people want this product or service? Does it make sense for them?
- Feasible = Company can actually make it
  Can we build a sustainable business? What has to be true for this business to work? What are the costs? How will you pay for it?
- Viable = Company makes money
  Does this work? Is it functionally possible in the foreseeable future?

If a product does not fit one of the three pillars it is destined to fail. Alpha.One with expoze.io has mainly focussed on the technology pillar, as that is their background, integrating it with a viable business model. But by putting so much effort in the technology pillar, the human pillar has been neglected, as can be seen by the user experience of the product. Next to that the designer was let go and a researcher was hired, putting even more focus on technology. This is where the shift needs to happen, represented in Figure 12, creating a balance between these pillars. To achieve this the company needs to put more attention on the human aspect.

For both the main research questions this creates new sub questions, as following;
•   How can the roadmap assist in adapting the product to be more Human?
•   How to create a shift to a more human oriented mindset trough an innovation process?
•   How to make sure that ideas selected for the roadmap fit the needs of the customers?

From the opportunities found in the immersion section, the initial research question has been revised and the following research questions are proposed:

What is the future vision for the predictive eye tracking platform expoze.io?
•   What is the purpose of expoze.io?
•   What is the latent customer value of expoze.io?
•   What are market gaps / differentiating factors in the market?
•   How to make sure the team interacts with the roadmap?
•   How can the roadmap assist in adapting the product to be more Human?

How could the roadmap be best adopted into the operation of the expoze.io team? (process)
•   How to build an innovation process that fits a small startup team?
                cost, time, effort efficient
•   How to create a shift to a more human oriented mindset in this process?
•   How to make sure that ideas selected fit the needs of the customers?

The preliminary research gave some insights into the company and challenges with roadmapping. Through these insights it became evident that the roadmap should go together with a process, as the process within Alpha.One is not that structured. Next to that the roadmapping method comes with challenges of maintaining an active roadmapping process, this is needed for adaptive strategy and creating short term development based on long term goals.
Next to that technology focus is an issue with the company, this became clear trough lacking customer experience and the absence of a designer, while hiring a researcher. Therefore an opportunity presents itself to create a shift to a more human mindset for the company within the solution that will be generated.

In the next section will be explained what methods will be used to answer the research questions, after that research will be conducted.

3 Methods

In this chapter the methods that are used throughout the process will be explained. There will be explained why these methods are use to answer the questions proposed.

Methods

In order to create a relevant roadmap several areas must be researched. These areas are internal and external analysis. The external analysis contains customer, competitor, trends and Porter's five forces analysis. Further in the research interviews and workshops are also used. Below will be explained what these methods are and why they are used to answer the research questions. "However, the workshop is not the only component, and it needs to be integrated into the wider process, in terms of other activities such as market research, interviews, surveys and analysis." (Phaal et al., 2003, p. 367) The methods used in this study are recommended by Phaal for the roadmapping process. Surveys are not performed as interviews with customers will provide more in depth information.

Product roadmaps require a good understanding of markets and applications to define the product in terms of customer requirements.(Groenveld, 2007, p. 55). Therefore it is wise to do an external analysis and interview customers in order to have a good view of the customer needs and thus the value the product should bring in the future.

Desk research

Desk research is performed to create understanding in several different areas. Mainly to understand the company and how it relates to the market. In order to create a valid strategy the position of the company compared to the market must be understood. Therefore it is important to understand the strengths and weaknesses of the company, which will be analysed through a SWOT analysis. Further internal analysis is already conducted in the immersion phase. Interviews will also be performed in order to understand the value of the product better, more explanation on that further on.

Customer analysis

To understand the market in which expoze.io will be competing better, several analyses will be performed. Customer analysis will be performed in order to understand what customers are the most interesting target market for expoze.io, this will be supplemented by doing non-customer interviews. As expoze.io is currently still targeting a very wide audience and has not chosen their target market this will be important for the future strategy. Some audiences might work better for their product or business model, while other customers will not see value in the product.

Competitor analysis

Competitor analysis is performed in order to understand the position of expoze.io better in comparison to their competitors. In the competitor analysis also the indirect competitors will be mapped in order to create a more holistic view of the eye tracking market. "Sustainable competitive advantage comes from operational effectiveness (doing what your competitors do, but better) or strategic positioning (delivering unique value to customers by doing things differently than your competitors)." (Porter, 2001, p. 68). This shows the importance of researching your competitors in order to create a roadmap, because the main reason to create a roadmap is to create sustainable competitive advantage.

Porter's five forces

Porter's five forces analysis will incorporate and add to the competitor analysis. Porter's five forces consist of customer, supplier, potential entrants and substitute products which describe the industry rivalry. "The extended rivalry that results from all five forces defines an industry's structure and shapes the nature of competitive interaction within an industry." (Porter, 2008, p. 25). The outcome will show the intensity of the competitive rivalry for now and in the future. Customers and substitute products are already analysed before the five forces, but in this analysis their influence will be described. Suppliers, which in this case could encompass strategic relations, will influence the competing power of the company. Potential entrants of the market are really important to identify as the company is an early entrant into this market and it is not yet saturated.

Marketing trends

Trends are an important part of predicting a future, which is essential when creating a future vision. In order to create a strategy that fits the future market and the company trend analysis will be performed. "A future vision holds imaginative, and dreams about the future. It can only take root through leaps of inspiration, which are sometimes based on observed trends and identified opportunities, and sometimes on personal inspiration or intuition."(Simonse, 2017, p.78)

From the marketing trends and the other research some opportunities will arise. These opportunities and insights will create inspiration in order to create a future vision. The insights and opportunities will be shared in a workshop that will create the future vision. The workshop will be explained later on.

Short literature study

A short literature study on eye tracking studies and technological advancement will also be conducted. This will be done in order to understand the limitations of the technology and the application. Secondly it will be important to understand how consumers make decisions and the limits there are in understanding human choice behaviour. It will also show where research is currently performed and what are interesting future technologies and studies in marketing analysis. To create a future vision it is important to understand the limits of the technology in order to not create a fantasy future.

Interviews

Interviews are conducted with clients to get a better understanding of the customer needs and thus the value that expoze.io creates for them. Understanding this value is important, because the customer value can be a long term value, for which the product can adapt or even different products can be developed. The interviews will be performed after the initial research, this is in order to go into the interview with good knowledge about the context. This extra knowledge helps create questions and makes sure that questions that could easily be answered by desk research will not be presented towards the customer.
To find the customer value an analysis will be conducted after the interviews.

Use cases of qualitative interviews (Virginia Tech University, 2018):
- Attributes
- Behavior
- Preferences
- Feelings
- Attitudes
- Opinions
- Knowledge

Interviews here are used to understand the attitude towards the product better, why do they use the product. How do they feel when using the product. What are their behaviors when using the product, do they use the product as intended?

Workshop

Roadmapping approaches can differ, but the use of workshops is a key feature, due to communication and social benefits. Workshops build consensus about the key issues of interest and concern(Phaal et al., 2015). The Workshop that will be held in this thesis will bring together the knowledge found in the research phase with the knowledge of the employees, in order to create a vision of the future that supports the common view.

Multiple workshops are often used to create the roadmap, but this is with big corporates with many employees and a lot of disconnection between different areas of expertise. In these workshops cross-functional teams are set up for the creation of the roadmap. In expoze.io there is some misalignment but the teams are still quite small and speak often, but rarely about strategy, this is where change needs to happen. Therefore a workshop is still performed, but not a series of workshops. As there are also time restraints this time would be better used to optimize the innovation process in order for there to be more communication about strategy in the future.

4 Research

Internal research is already performed during the preliminary research phase, this was in order to understand the product and the company, the outcomes have helped construct relevant research questions. The insights gained from this research will also be used in the SWOT analysis which will be at the end of this chapter. Customer analysis, competitor analysis and marketing trend research will be performed in this chapter. The insights gained will be arranged in the Porter's five forces and SWOT analysis. Afterwards customer interviews will be performed. The outcomes of the research and customer interviews will create a basis for a company workshop.

Customer analysis

Customer analysis is performed in order to find out what categories expoze.io sees as their potential customers and to find their ideal customer. In order to create the best product market fit, as targeting towards segments that have no need for the product could be a waste of marketing budget. What kind of companies does their current customer base consist of and why are they interested in the product? This is a question to find out what the value of expoze.io is. To find out the value expoze.io has for the customer interviews have been conducted, these interviews can be found in chapter five. In that chapter customers are interviewed to see why they use the product. But first are explained what the target market of expoze.io is and what the actual customer base of expoze.io looks like.

The target market of expoze.io, as described in a marketing presentation of expoze.io, are as following. The companies are separated between doing marketing inhouse or consultancies doing marketing activities for other companies.

Inhouse
- Large corporates
- Small/medium sized companies
- Startups

Consultancy
- Neuromarketing consultancy
- Small/medium sized creative agency
- Freelance creative

The target market of expoze.io is quite a broad target audience. A broad audience has been chosen for the start of the product, to make sure to not leave out any potential customers. Some of these target audiences are better suited than others and should require the focus of the company. To find out if there is already a preference within the current customer base a table categorizing the customer base is made, see Figure 13.

Some of the categories are under performing, especially the smaller businesses and freelancers. Behavioural change consultancies are quite similar to neuromarketing companies, so this type of company is not that much behind the rest. These companies are quite similar in a way in that they already use conventional eye tracking technology in order to analyse human behaviour. To find out why certain companies do not use the product non-customer interviews were conducted.

Category	Paying	in trial	In pipeline	Paying users
Neuromarketing company	2		1	2
Behavioural change consultancy	1	1		1
Marketing middle man	4	1	2	4
Big corporate	5	1		4
Creative agency	1	1	1	1
Small/ medium enterprise	1		2	1
Freelance creator				0

Figure 13. Customer segments (The table with company names can be found in confidential appendix B)

Non customer interviews

The main reason for the non customer interviews is to see why they are not using expoze.
io at the moment. Do they not use it because they do not know it exists, or do they not use it
because the use does not suit them. Another interesting part of interviewing non customers is
seeing what kind of tools they use at the moment, maybe there are some tools that they use
that are a substitute for expoze.io. The non customers were found through Linkedin, searching
for titles as marketing manager. Non customers were interviewed with a semi structured
interview method. The questions proposed were as following:
- How do you conduct your daily operations?
- What tools for analysis do you use in this?
  - What is the goal with these tools (per tool)
    - Predictive analysis
    - Post analysis
- Do you know of others you don't use?
  - Why do you not use this?
- Have you heard of eye tracking / neuromarketing?
- Have you heard of AI generated eye tracking?
  - Why do you not use this?

Outcome

The current customer base of expoze.io only has a limited number of small to medium
businesses, from these interviews it is evident why this is. In small businesses the optimisation
that can be done is still quite big, thus the primary action to take is to spend more time on
optimizing search keywords and A/B testing some advertisements through Facebook/Google
analytics. Eye tracking becomes more useful once the advertisements are viewed by millions
of people and the small optimisation creates a bigger impact. Below are some examples of
this being mentioned in the interviews.
This is also really interesting for the value proposition and the price that can be asked for
expoze.io. If you can easily a/b test the effectiveness by just putting it in the market and this is
cheaper than subscribing to expoze.io, then it is not interesting for marketeers.

Non customer 1
"The bigger the volume, the more you can get out of it. That is why I would see it as more
interesting for clients that have more budget, more clicks.. then those optimizations can have a
big result.
Let's say the AI optimizes by 2 percent, then for a small customer this means maybe 2 more
clicks per month, but for a big customer this could be a million clicks per month. "

Non customer 2
"Zoofy at this moment is too small for this tool, it becomes more interesting when we have
more data, more advertisements. You can imagine when if you conversion rates, on your ads or
on the web , goes up with 1 percent and you have millions in traffic then you are talking about
big money you can earn with it"
"At the moment we go international, and thus have those millions in traffic, it would become
really interesting, it actually becomes a must to do"

Non customer 3
I don't usually recommend usabilityhub, because it is more expensive than actually testing in facebook ads.

In conclusion
The expoze.io product is less interesting for smaller businesses as the impact gained is significantly less than when used for big viewing numbers. The target market of expoze.io therefore can be reduced and marketed more specifically towards big corporations, or middle man and consultancies that help those big corporations with their optimizations. In order to understand the value the product brings towards these companies, customer interviews will be conducted.

Competitor analysis

In this chapter competitor analysis is performed in order to create a better understanding of the competitive landscape. This is important in order to see where market gaps are and thus where expoze.io can distinguish themselves from competition. This landscape consists of close competitors but also indirect competition. Indirect competition can create the same value for the customer but present this in a different way, it is important to find these competitors in order to understand what users want. The competition will also be analysed in functionality. What are certain features that competitors have and expoze.io does not? Why do users want these features? Those are important questions to answer.

The competition of Alpha.One can be separated into a few categories, from direct to indirect competitors to replacement competition for the expoze.io platform, see Figure 14 for the companies.

Direct competition
1. AI eye tracking solutions
These companies are direct competitors of the expoze.io platform, they use AI powered eye tracking for faster analysis.

Indirect competition
2. Eye tracking solutions
The expoze.io platform will be an eye tracking tool, but way different than the following. The following competitors have eye tracking solutions which will actually be tested on real people. Most are infrared eye tracking systems or wearable glasses.

3. Neuromarketing analysis
These companies do generally the same thing as Alpha.One, they use brain imaging and eye tracking to analyse marketing material, on the basis of this they provide suggestions on how to improve the material.

Replacement competition
4. Direct replacement competition
Platforms that create similar marketing analysis tools, but not through human eye tracking. Here the competitors use; click heatmaps, emotion AI and immersion measurements.

5. Indirect replacement competition
If the job to be done is: analyse the advertisement/website to improve the efficiency, then there are a lot of other competitors and competing technologies in order to achieve this goal. As mentioned before in customer analysis, small to medium sized companies use Google/ Facebook analytics in order to optimize their advertisements.

The replacement competition will be explained below on what this product is and why it is replacement competition for expoze.io. The replacement competition is categorized into pre- and post-testing, as expoze.io is used to pre-test advertisements. Post testing is used mainly to analyse once the advertisement or website is already online and presented towards the customers.

Figure 14. Competitive landscape

Pre testing
Usability hub
With this tool you can check quickly what people think, you get fast feedback from real people on how they perceive your website. They are also a probable customer for expoze.io, as it will improve their product.

Surveys & live testing
Use a survey on a test user base before finalizing the advertisement. Live testing is used to ask the consumer directly what their opinion is or let them judge multiple advertisements and see which they like best. These are tests that most companies can perform in house.

Post testing
A/B analytics testing
This is an easy way to see if one advertisement is more efficient than another one. This can be done inhouse easily and cheaply. The numbers are easy to interpret, the one that converts more people is the better ad. This method is used after making the advertisement and testing it on actual consumers, while eye tracking is performed before launching an ad campaign, thus these methods can be used simultaneously.

Google Search Console
Helps to make your website better in order to rank higher in the search engine (SEO optimization). Only for improving websites (in order to be higher on the list), not advertisements.

Click Heatmaps
These tools generate click heatmaps, where does the user interact with your website and how often is something clicked. These can be analysed in depth per consumer. In an interview with someone working at GrowthTribe during non-customer interviews, he explained that he does not recommend this to companies as it takes way too much effort and time to go through all the data.

Analysis of direct competitors

As explained in the methods section, sustainable competitive advantage comes from operational effectiveness (doing what your competitors do, but better) (Porter, 2001, p. 68). Therefore it is important to understand in what way expoze.io differs from the competition. Where does expoze.io lack, but also where does it stand out in terms of the competition. Where it stands out compared to competition could mean competitive advantage, if this is something that is hard for the competition to imitate this is sustainable competitive advantage. It is also interesting to look at reviews of the customers of competitors in order to see what their weakness is and to make sure this weakness will not be developed in expoze.io.

Name	Eyequant	3M VAS	Feng-Gui	Neurons inc.	Attention Insight	VisualEyes	Expoze.io
Price	€499 (1m)	$49 (1m) $588	$99 (1m) $67annual $200	$50 $125 $167	$0 $48 $320	$0 $17 $42,5 custom	$20 $30 $400
Webpages	Y	Y	Y	Y	Y	Y	N
Advertisements	N	Y	Y	Y	N	N	Y
Photographs	N	Y	Y	Y	N	N	Y
Heatmapping	Y	Y	Y	Y	Y	Y	Y
Video	N	N	N	Y	N	N	Y
Customer service	Y	Y	Y	Y	Y	Y	Y
IAT algorithm	N	N	N	N	N	N	N
EEG algorithm	N	N	N	N	N	N	N
Backed by Neuromarketing company	N	N	N	Y	N	N	Y
Partnerships	CalTech University of Osnabrueck, Germany.			Aalborg University's Copenhagen			RSM

Figure 15. Competitive feature analysis

Eyequant is one of the biggest companies in the field of predictive eye tracking. expoze.io differs from Eyequant as their main focus is on UI optimization, while expoze.io focusses on advertising. expoze.io will also get in the UI optimization market, in this case the key difference of expoze.io being able to handle video could create an advantage. Creating video for certain web usage scenarios could help to create a more natural and dynamic scenario, like scrolling through a web page or application. This helps the algorithm to view the content as people would view it.

Expoze.io is also only one of two companies that is based on a neuromarketing company, see Figure 15, this means that they have great knowledge on human behaviour. Means that they could create insights that could go deeper than just a heatmap, but create more insights about why people look at images a certain way.

Customer reviews of competitors

By analysing reviews of customers the positives and negatives of their products become visible. Some of these aspects can also reflect expoze.io, as the product is very similar. By looking at what customers think are good aspects of competing products, these aspects can be implemented in expoze.io. The negative aspects expoze.io could improve on in order to gain competitive advantage.
The customer reviews can be seen in Figure 16. (G2, n.d.)

Positive aspects
- Able to make quick well grounded choices
- Qualified consultant support
- Page clutter score is useful

Negative aspects
- Interpretation not that easy for everybody
- More guidance in what to aim for as a designer. (how to set your ROI, 3 W's).
- Not sure what excitingness scores tells
- Not being able to test a webpage for different kind of screens (horizontal, vertical, tablet, pc, etc).
- Recording customer behaviour does not tell the full story; misses subjective explanation why the behaviour occurred. (include user experience reports)
- Problems recording interactive websites.

Result interpretation and clarification

As found in reviews of Eyequant, users miss some support in interpreting the results. This is where the positive aspect of qualified consultant support comes from. People need more guidance in understanding the results of the heatmap, why do people look at a certain spot? As there is almost no guidance in interpreting results which makes it hard to distill concrete improvements to apply to the customers' design. Commonly these are complexity expressed in a percentage (the amount of different aspect going on like, shape, colour, contrast, etc.) and salience expressed in a percentage (the amount of 'attention' shared; the lower, the more attention is spread), and scores on several visual elements like colour intensity, edges, intensity, faces, red-green, and blue-yellow balances.

expoze.io is lacking these extra interpretation results. But as seen in reviews, not every score that they present is seen as useful by customers. The excitingness score from Eyequant does not tell the consumer something useful. This means that there is a gap to create interesting scores or insights that help the customer interpret the results better. As said before, expoze.io has the expertise of Alpha.One to do so.

Next to that Eyequant also has a youtube channel with many advising videos on how to use their tool and how people can optimize their design. Titles of the videos are: How to use eye tracking data to capture attention & Designing for principles of eye-flow movement. These are all webinars that suggest that their customers do not have the knowledge to interpret the eye tracking data. This is extra evidence that these types of products give the consumer difficulty with creating actionable results.

★★★★★ Jul 25, 2017

"EyeQuant makes eye-tracking affordable and integrated in an iterative design process"

What do you like best?

The fact that in only a few seconds and at a very affordable cost, I can get an eye-tracking heatmap of one of my mock-up or a real-page on my website.

Because it's so easy, fast and cheap, I can include heat map analysis at every step of our design process, in a very iterative way, allowing us to make quicker and better design decision.

What do you dislike?

It's not always easy to interpret a heatmap correctly, and to know what to aim for as a product designer. The customer success team at EyeQuant is very available and provide free training sessions which are very useful though.

Recommendations to others considering the product:

The free demo offered by Eye-Quant already provides you with great insights about your current product, they share the heatmaps of your product with you, which is great to test if this is something that could benefit you in your design process.

What problems are you solving with the product? What benefits have you realized?

We already use mouse-tracking software to generate heatmaps of our live website. With Eye-Quant, we can add eye-tracking heatmaps to our analysis, but more importantly, we can test designs before they're live and get results in seconds.

★★★★★ Jul 24, 2017

"Great tool with great benefits"

What do you like best?

The Perception Analysis and their 3 W's Methodology (What/Why/What Next) is great to show great value to our clients.

What do you dislike?

The tool is great but it would be very helpful if they have some industry benchmarkings too.

What problems are you solving with the product? What benefits have you realized?

We can scale several analysis very easily

★★★★☆ Jul 24, 2017

"Great tool for checking instant attention and clarity of your webpage"

What do you like best?

The page Clutter score is really useful, especially for benchmarking against competitors.

What do you dislike?

I wouldn't say I dislike it, but I'm not really sure on what the Excitingness scoring is telling me!

Figure 16. Competitor customer reviews (G2A)

Features of competitors

Competitors are mostly further developed as they have been longer on the market. The features that expoze.io lacks and could develop in the future are listed below. Some competitors also use metrics in order to create easier analysis for their customer. These metrics are often scores that are calculated by the raw data of the heatmap, see Figure 17.

Metrics:
Eyequant: Scores on visual clarity & excitingness
VisualEyes: Clarity score
Feng-gui: Aesthetic report - Colorful / Clear / balanced Scores
Neurovision: Cognitive demand & clarity score

Clarity scores are mostly based on the distribution of the heatmap. If the heatmap shows that the user would look at a particular spot, the clarity score is high. If the heatmap is all over the image, thus not a clear red spot, the clarity score will lower.
This is something that can mostly be concluded from viewing the heatmap, thus it is interesting why this should be scored. The value for the customer of these scores can be found through customer interviews and therefore this question will be addressed in that chapter.

Features:
- Gazeplot
- Hot spots area selection, check time spent
- Regions of interest (automatic)
- Perception map, showing what is seen and what not
- A/B testing two designs (comparison)
- Contrast checker
- Scroll heatmaps for website
- Eyequant has a browser plugin to directly analyse the site
- Viewing times (3 secs vs 5 secs vs 10 secs) comparison

Listed above are features that are missing from expoze.io which the competition has on their platforms. These features can be developed in the short term, but in order to not create feature creep it is important to understand which of the features are most important to the customer. This is also important to understand priority for development. This can be found through customer interviews.

WWF AD - Deforestation
JPG | 01/01/2014 |

Complexity:

Visual 12,24% Saliency 3,5

Area Distribution:

Neutral	89%
Static	8%
Low	2%
High	1%

Color Load & Brightness:

Red	82%
Green	83%
Blue	73%

72,9

Design Metrics	Perception Map	Attention Map	Hot Spots	Regions of Inter

Clarity Score — 43/100
How clean & clear does your design look? Lower scores indicate too much clutter.

Excitingness Score — 42/100
How exciting & stimulating does your design look? Lower scores mean a calmer design.

Show clarity map

0:19 / 0:27

Cognitive Demand — 9.47%

Clarity — 79.82%

Cognitive Demand ● Clarity

Show advanced scores

Tags

Figure 17. Competitor product metrics

In conclusion

A big threat for expoze.io could be coming from Facebook and Google. These companies have a lot of data on marketing through their respective advertising platforms. These platforms could create predictive AI based on their data to test ad effectiveness.

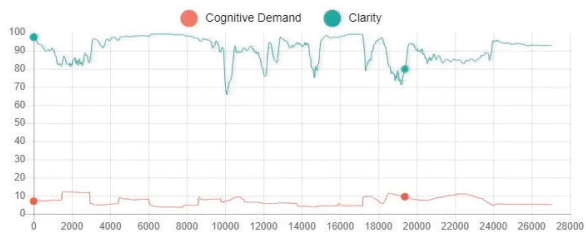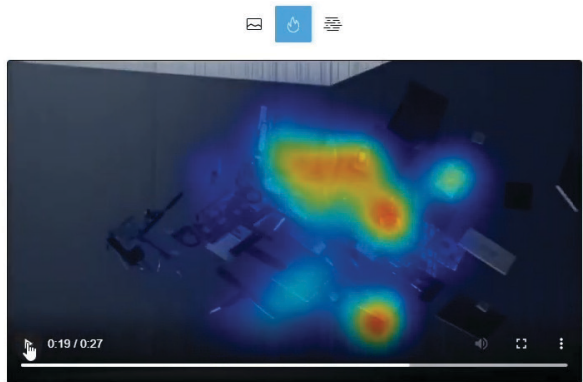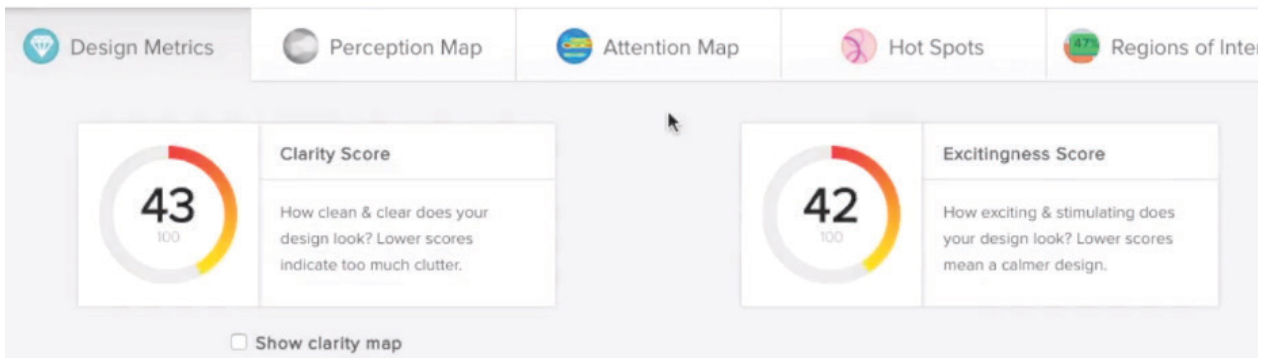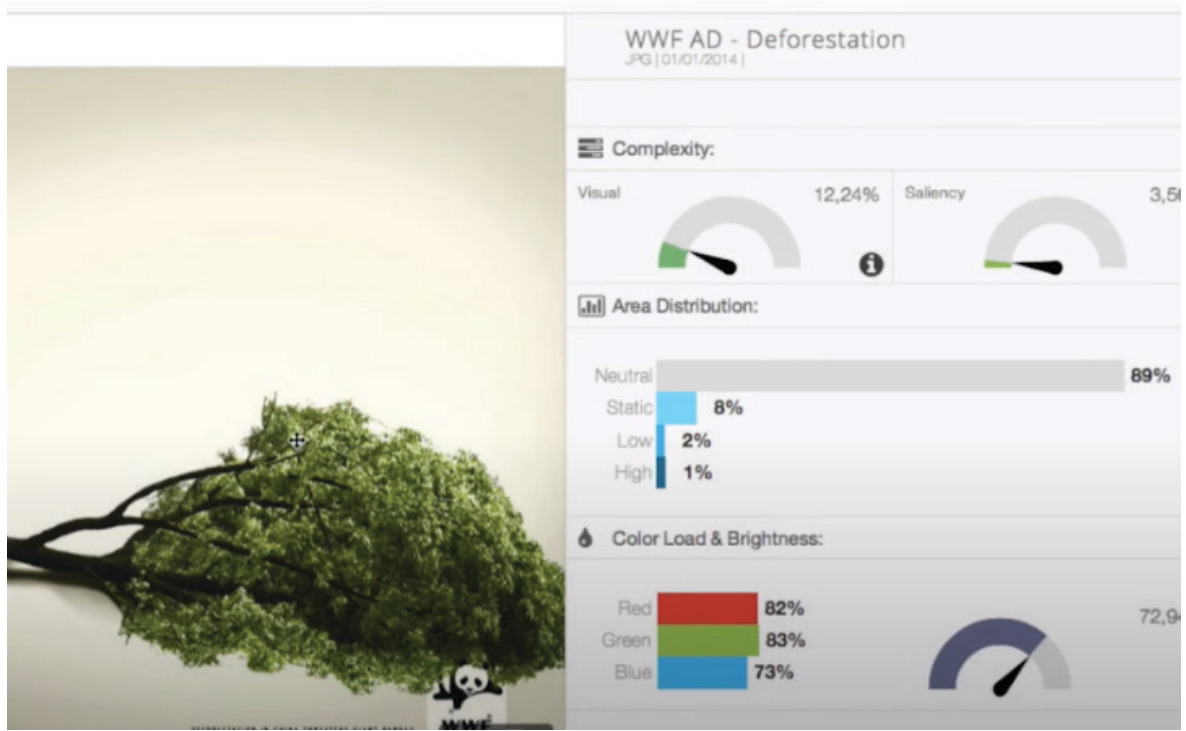The competitive landscape is not saturated yet there are few companies with similar product and those are also small to medium sized businesses. That does not mean that new entrants could just take over because of the development time of the neural network, this means they will have to invest a big amount of time in order to enter the market.

Creating video for certain web usage scenarios could help to create a more natural and dynamic scenario, like scrolling through a web page or application. This helps the algorithm to view the content as people would view it.

expoze.io is also only one of two companies that is based on a neuromarketing company, this means that they have great knowledge on human behaviour. Meaning that they could create insights that could go deeper than just a heatmap and create deeper insights about why people look at images a certain way.

Metrics are used in order to give the customer easier analysis of the heatmap. Some of these scores like excitingness scores are not that valuable for the user. Clarity scores can also be easily understood by just looking at the heatmap, still the customer finds value from these scores.To understand what the value of these scores are for the customer some questions about this will be presented in the customer interviews. The outcome can be found in the customer interviews chapter.

For the interviews it is also interesting to find out how often the missing features of expoze. io (that competitors have) are mentioned in order to understand which is found as most important by current customers. This will be used to create an ordering for a short term roadmap.

Marketing trends

Marketing trends were researched in order to understand how the market will be changing in the future. The trends researched are trends that can be seen in the context of marketing and technology that could support marketing. It is important for expoze.io to fit into this future market and if necessary adapt its course for certain changes in the market.

Content marketing / Video Marketing
Video marketing is one of, if not the, most important marketing trend today and likely for the next 5-10 years, see Figure 18. Video marketing is the most easily digestible media type for customers to get information. Video will become more important, but it is also expensive to make. This means there is a big opportunity for predictive analysis to make sure it will perform. (Hubspot, n.d.)
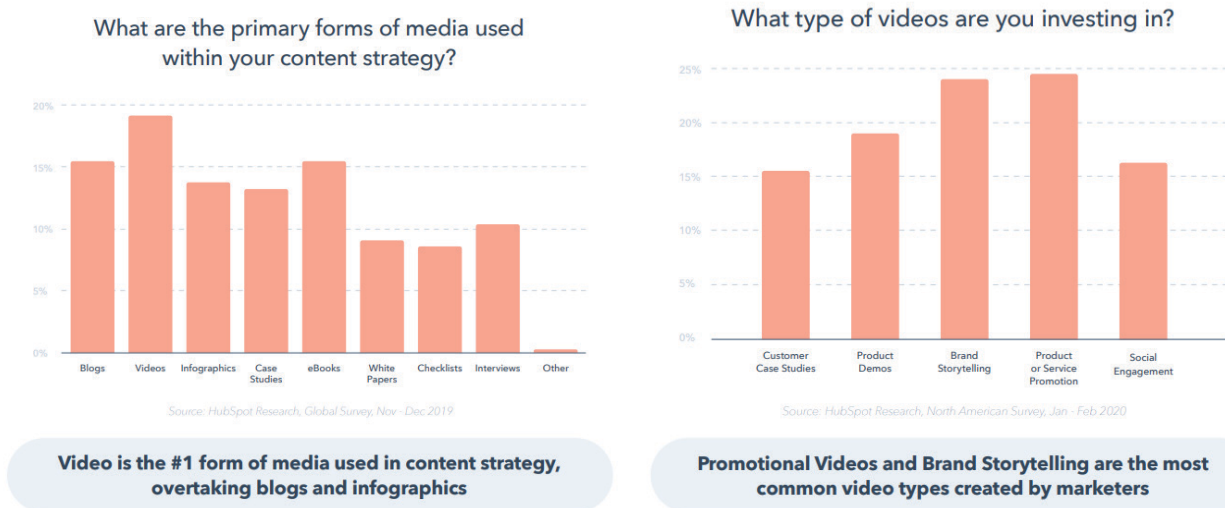
Figure 18. Marketing trends (Hubspot, n.d.)

Image recognition
Vision AI by google let's an algorithm learn by visuals. This way a company can train its own model to recognize and name certain visual features. This is an AI that could be incorporated into the expoze.io platform in order to recognize visual elements and give contextual insights.

AI-Based Automation
There is a great increase in the number of businesses using AI-powered technology and automation to assist their marketing efforts. The main way marketing views AI is that AI could make sense of big data, in this way giving insights about the huge amount of data which they could not before(Brenner, 2020). It is important to understand that when most marketing people think about Artificial Intelligence in combination with marketing that they think of big data. Artificial intelligence is not that well known in the marketing community for the prediction, which is what expoze.io is used for. It makes for the product category of expoze.io to be less known and not even being mentioned in most future of marketing trends.

Privacy

Privacy in marketing has been a public concern with marketing in the last few years, with new cookie laws and GDPR law. Facebook knows a lot about a person's preferences and they have been challenged in court in America on this matter. Personal privacy could shift two ways in the future, people get more concerned about privacy and there will be more laws concerning data and privacy. The other way it could go is that people do not care for their privacy as long as the products are free to use. In China this is already happening, privacy is already been compromised, as the government uses facial scanning technology to track their citizens. This does not mean that privacy will also be compromised in Europe. Privacy can be a huge factor in the future of marketing.

"We're seeing a social shift in the long term effects of privacy…. As billions more in venture investing targets our personal data for resale in a multitude of ways, people are starting to more deeply question their growing lack of data privacy and control. " as said by Andrew Hawn owner of MetaForesight(Meehan, 2019).

If privacy gets more important, other types of marketing analytics and advertising targeting could become prohibited for invading privacy. Expoze.io does not deal with privacy issues as the analysis is done through an AI and no personal information is necessary. Meaning that if this shift happens, expoze.io could have a big advantage in the marketing analysis market.

Generative AI

Generative AI is able to create new visuals based on the trained model. AI can already create human faces of people that do not actually exist, as seen on thispersondoesnotexist.com. Next to that solutions already exist for generative creative AI, take RunwayML as an example. Through this platform a user can ask for a painting that fits certain characteristics that the user wants, then the AI will generate a never seen before piece of art. Generative AI can mean that, once it is well established what works in an advertisement and what does not work, that the generative AI can make an advertisement that fits to those criteria. In this way, creating an optimized advertisement that will perform well for human attention can be created.

Data driven marketing

Marketing is data driven nowadays, making marketing more measurable and more efficient, while it used to be the more creative branch of the company(Crum, 2020). Metrics mean marketers have become more accountable (Oxford College of Marketing, n.d.). Marketeers have responsibility to perform, this is why the data is being tracked on advertising performance. Marketeers now have more accountability on their advertising strategies performing, this will soon also be for creators. The maker of the creative content will get more accountability on their ad performing well. This is where expoze.io comes in, which is able to measure creative content on their salience.

Conclusion

Video marketing is the future of marketing, expoze.io has the means to pre-test videos before they are shown to potential customers. Next to that image recognition and generative AI could help create a more insightful platform in the further future. In the nearer future image recognition can help to give customised insights, while generative AI could create advertisements that are optimized for attention.

AI in marketing is generally known for big data analysis, but not for predictive marketing analysis. This shows that the product sector expoze.io is lacking attention, especially since they are not mentioned in many marketing trend watcher websites. Next to that data marketing is getting bigger and makes marketers more accountable for performing well, this creates opportunities for expoze.io.

Short literature study

In the literature research the main goal is to find out as much about neuromarketing and eye tracking as possible. What are still unknowns in neuromarketing, what can you conclude from results, what are trends, how does the consumer view neuromarketing, etc. This will help create a better understanding about the current state and the future of neuromarketing. Because some limitations of the technology can not be overcome, and thus an ideal future state might not be reachable.

Predicting buying decisions
The conclusion of reading many articles on neuromarketing is, there has been too little research to know the actual impact of marketing stimuli on buying behaviour. Also too little is still known about the effect of marketing stimuli on buying behaviour to know what brain response exactly indicates a person wants to buy something. Thus testing if someone wants to buy something is still not possible, but the steps in between might be, where someone his attention is. Still attention is not the full predictor, because even without paying conscious attention someones brain can still notice a stimulus and this can influence a decision, thus even unconscious "attention" is something to be measured. Also by just showing advertisements often, the consumer often has more preference for this product, this is called the mere exposure-effect (Lamme, 2011, p. 122)

This does not mean that marketing stimuli do not have an effect on buying behaviour. An increase in marketing spending mostly equals an increase in sales, otherwise companies would not do advertising. It means that the buying decision is quite complex and an exact formula of a good advertisement can not be given.

Time reduction
In research it also shows that time was a big aspect of commercial neuromarketings flaws. "More problematic when it comes to commercial neuromarketing is the fact that, practically-speaking, the time-frame for conducting neuroimaging research often falls well outside of the tight deadlines that those working in the fields of marketing and product development typically have to operate within.(Spence, 2016, p. 286). Human behaviour studies require a lot of time, but with this predictive technology this problem will be solved. But this will only be if every test can be replaced with predictive AI, because the process will take as long as the longest test involved.

Good for black-white questions, less suited for gray area questions.
A big downside explained by Spence (2016, p.287) is that neuroimaging can provide a clear answer to black and white questions, but it is less well suited in discriminating between shades of gray questions. While these are the questions that the marketing manager wants the answers to.
This shows that more tests on the platform would be better, getting more information from EEG data and eye tracking can give more in-depth information.

Trained persona not suitable for every country
Most participants in psychological research are from specific countries, these are called WEIRD—that is, Western, educated, industrialized, rich, and democratic. Worse still, it has been estimated that somewhere in the region of 95% of all psychology research is conducted on North American psychology undergraduates (Jones, 2010, p.1627). This is also something to keep in mind for expoze.io, what is the data that is put in to train the AI based on? Because this will influence the outcome and application.

A lot of research, finally delivering actionable guidelines
Research is starting to create generalisable neuroscience insights for marketing. For example ;that people do not like products as much when they point toward them or point downward (Shen et al., 2015, p. 26), or that people seem to engage more with those packages or products that appear to be smiling at them (Salgado-Montejo et al., 2015, p. 771). These product insights could be automated in the expoze.io platform. When recognizing packages in an advertisement, these tips could show up in the platform.

Audio
There is also scope to use the growing neuroscience understanding of sound symbolism and naming in order to enhance one's product offering (Argo et al., 2010, p. 97). Audio can also stimulate the brain of a potential consumer in order to create a memory, this was often used in advertisements as product jingles. Although nowadays not a lot of research exists towards the effect of audio advertising, this could change in the future, creating possible interesting audio measures that could be implemented on the platform.

Neuroforecasting with NAcc response
Neuroforecasting is an example in which the brain response does not align with the subjects talking. In a study by Tong (2020) a groups NAcc response was a better predictor of marketing performance than the subjects self-reported ratings, with 67% respectively to 53% alignment with the winning project funding. In this study it showed that NAcc activity was a better predictor of project funding than people's conscious statements. This is also why it is so important to do neuromarketing research in comparison to just doing interviews with customers, as the conscious statement does not always align with their instincts. This study could also form a basis of more research into customer choice prediction

In conclusion,
Predicting buying behaviour is quite difficult as the decision making process is really complex. In the future more inisghts about what influences buying behaviour will be discovered, creating a deeper insight in this decision process. Although the decision making process will probably never be fully understood, the prediction of this process will become better over time. Artificial intelligence will help with this understanding in the future. More actionable guidelines therefore are emerging, creating more knowledge for marketers, expoze.io could make this more accessible and easy to understand.

Porters' five forces

Porter's five forces analysis was used to create an understanding of the industry and its weaknesses and strengths. The input of the five forces was mainly from the research done before. The insights gained will give a better understanding on how the market will evolve in the coming years due to forces that create competitive rivalry.

Threat of new entrants
In the market there are already a small amount of competitors in the same business. expoze.io has just started so it has a small market size compared to for example Eyequant. The threat of actual new entrants entering the market is low to medium, this is because the AI training models first need to be made, which takes a long time by itself. Afterwards these models have to be trained, the training of the data takes a few months. This causes new entrants to at least take a while before entering the market. For the training of the models a big amount of data is needed, about 10 million data points, data from eye tracking studies compared to their respective advertisements. The source of this information is Coert from Alpha.One who made the algorithms for expoze.io. The algorithm that expoze.io is built on is not patented, but this can still be applied for. One of the reasons it is not yet patented is because it would be hard to replicate.
There will definitely be new market entrants as the market is not anywhere near being saturated, but in this market there is a big advantage for first movers, as they have had more time to refine their algorithm.

This makes the threat of new entrants low to medium, the biggest threat is actually that of big tech companies. Google, Facebook and Alibaba are big threats for expoze.io, these platforms control a lot of the advertisements on the internet. This means they also have a lot of data from these ads, these are already used on their advertisement analytics platforms. These companies could start a bottom-up approach to create an algorithm to fulfill the same need.
If these companies start to invest in research on click through rate prediction it will undermine the value expoze.io offers. Alibaba has already started investing, seeing from papers being published with their company name(Zhou et al., 2018, p. 1059). The big tech companies have a lot of advertisements uploaded on their platform and respectively know the click through rate for these advertisements, meaning if it is possible for them to create a click through rate(CTR) prediction algorithm, because they have the data for it. Click through rate prediction is essentially what every company wants, testing how well your ad performs before spending any money on it. This will be a big threat for the long term future of expoze.io.

Threat of substitutes

The substitution of eye tracking is almost not possible, if you as a company want to know if people see your message, this is almost the only way. Some other ways are showing people and then doing surveys if the message was actually seen, but this is way more time and cost intensive than AI eye tracking.

The other substitution is actual eye tracking studies performed on real people. This is something that especially bigger companies still hang on to, because the idea of no people actually seeing it but still getting an eye tracking result does not compute with them (quote from an interview with a client). Big corporates also have the money to do an actual eye tracking study and this way getting a 100% correct study compared to spending less and getting a 90% correct study.

If we look at more generic product substitutes for pretesting advertisements (no post analysis) we can see Usabilityhub as a threat, this is a website where companies can upload their advertisements and get them tested by real people.

Another substitute for customers of medium to small businesses is doing quick A/B testing of their advertisements on Google or Facebook analytics. This also gives them a form of testing which is the better ad.

Buyer power

The buying power is currently medium to high. The product offered is at a low price compared to competition. Although the switching costs for the buyer is really low, there are not many others to go to yet, decreasing the buyers power. The switching costs contain the time that they are invested in, meaning the kind of subscription they bought, but if the subscription is near its end then there is no switching cost in terms of money and time. Although the older advertisements that have been tested are on the platform, these can easily be batch downloaded. After this the customer has their performed tests and could move on to a different platform.

One way to make the switching cost higher is to integrate the platform more into the customers' way of operating and into their marketing analysis programs. This is something to look into to decrease the buyer power.

The purpose of the platform is to get a big amount of consumers without having to spend time on each customer individually, thus the platform can grow the customer base almost unlimited, this is also something that decreases the buyer power. This is not something reached yet, as the amount of customers is currently about ten.

To increase switching cost it could be interesting to make custom algorithms trained on the advertisements of certain companies, for bigger clients. Once these companies have a custom algorithm the switching cost will increase because the company does not want to lose their personal algorithm.

Supplier power

For the general market supplier power is low, the companies do not need regular suppliers, but they do need expertise. Research partnerships are thus very valuable, because in a sort of way they supply data to build the algorithm.

For expoze.io most of the expertise comes from one employee that generates the whole algorithm and is the only one who understands how it works, giving him a lot of bargaining power within the company.

Another supplier for cloud data is Google, in order to have the platform work, expoze.io needs to work on their servers. They set the price for the use of their servers, for now a discount is provided, as the company is small. The price will increase and this creates bargaining power for Google, as the product will not operate without their servers.

The only other supplier is Rotterdam School of Management (RSM) which Alpha.One has a research partnership with in the field of consumer neuroscience. This gives Alpha.One a lot of expertise in the field of neuroscience, but it is also a relationship that needs to be maintained.

Competitive rivalry

There still are not a lot of competitors in the industry, see Competitors chapter. The competition is currently mainly on who is creating the most accurate algorithm compared to real eye tracking. Brand positioning is still not a big deal as the innovative product is interesting on its own. expoze.io is competitively priced as can be seen in the competitor analysis.

Between other competitors it is seen that they copy metrics like Visual complexity from each other, trying to get their platform up to date with the most features. The rivalry may result in a feature war of which platform has the most features.

In Conclusion,

Big tech is a big threat for the future. They could create click through rate prediction from a bottom up approach. In this way they can predict how well an advertisement would perform. In order to stay away from becoming similar to those companies in the future a different value proposition than ctr prediction would be wise. One way of doing this is to distinguish themselves as being the company with deeper insights than just click through rate, the product that explains why it gets this click through rate.

Another thing to look out for in the future is the supplier power of Google and not letting this increase too much, especially if they could become a competitor in the future.

Switching costs is also an issue that could get improved, this could be done by creating personalized algorithms that work best for the advertising that particular company makes. In this way increasing the switching costs for those companies, while adding extra value.

SWOT analysis

Everything learned before will be put in a swot analysis, easily showing the company's weak spots and where they can improve. This essentially is a more detailed list of the outcomes of the preliminary research and the research in this chapter combined. The SWOT analysis shows the strength, weakness, opportunities and threats revolving the company.

Strengths
- Strong AI machine learning model which is really accurate and hard to replicate
- Built by Neuromarketing company
- Partnership with RSM (Rotterdam school of management) field of consumer neuroscience
- Early entrants in the market (for AI models very important)
- Big networks with existing clients from Alpha.One
- (looking for investments)
- Almost the only one that can do video analysis.

Weaknesses
- Only small amount of customers
- Still limited features
- Small development team
- Only has one algorithm for advertisements, not for websites. (probably also not applicable outside western countries)
- No designer / user experience expert

Opportunities
- Replacing eye tracking market
- Big chance in creating useful metrics
- Getting the product out there, generally companies don't know about the product category.
- Creating a better landing page & marketing that fits better with the value proposition of the consumer
- Eventually EEG engagement & EEG emotion prediction
- (investments to expand the team)
- Corona crisis, cannot test on real people, thus next best option.

Threats
- Big tech companies could make CTR prediction AI in the future.
- Competitors that grow faster than expoze.io
- Clients see more value in quick A/B ad testing through Google/Facebook analytics

Strengths

By interviewing the expert of the algorithm that is at the base of expoze.io, he made it clear that the algorithm is quite difficult to replicate. Even if the algorithm was replicated it would take around half a year to train the algorithm to a workable level. This means that the technology is a real point of strength for expoze.io. It is difficult to replicate and the time to market for potential competitors is quite long. Not to mention that the more the algorithm is trained the better it will perform, thus early market entrants have a real advantage here. Expoze.io is built by Alpha.One, which has great knowledge on neuromarketing. The team has a lot of expertise on human behaviour, this makes them capable of creating new measures that can tell what makes advertisements effective. This quality is strengthened by the partnership with Rotterdam school of management, Erasmus university. Currently expoze.io is one of two companies that can do video eye tracking prediction.

Weaknesses

The weakness of the company currently is their small team, this is mostly due to it still being in the starting phase of the company. Due to this they lack features compared to their competitors, it also takes quite a long time to develop these features with a small team. The focus therefore has been on an advertisement algorithm and not a website algorithm, because most of the clients of Alpha.One were in that business.
The small amount of customers that expoze.io has means that the customer input that leads towards the development of the product has to be carefully examined. Some ideas might not scale with a potential user base, but the ideas can not yet be quantitatively tested on their customers, but this can be done in the near future.

Opportunities

The competition has created metrics that are not always as useful for the analysis of an advertisement. The metrics could give more insights on how the advertisement will perform and why it will perform in this way. It could even go a step further and give advice on how the advertisement could perform better.
The expoze.io team does not have a clear sight on the customer value that the product brings, this is something that shines through on the website and the advertisements from expoze.io. They do not communicate a clear value that the platform brings.
For the short term the corona crisis brings a big opportunity for the company, as user testing can not be performed. The prediction platform expoze.io is therefore a great alternative solution to get customer insight.

Threats

A big threat to the company are big tech companies that already have data analytics on advertisements, these companies could very well enter the market of predictive marketing analytics. To enter this market, based on an interview with the neural network expert Coert, they would make an AI that is bottom up based. Big tech companies have a lot of data about Click through rate (CTR) of advertisements. Based on this data they could create predictive AI that tells how well an advertisement would perform. Some customers of expoze.io their goal could be to just want to know how well an advertisement will perform, but not necessarily know where people look at the advertisement, in this case it would be a great threat.
From interviewing non-customers it became evident that for some companies it has more value to do quick A/B testing of an advertisement on Google or Facebook analytics. This is because prices are low and results come back quick. This way of testing only doesn't show you why a certain advertisement is not working, only if it is working and to what degree of success. Meaning the opportunity for expoze.io is to give more in depth information into why certain ads are working or not.

Research insights

During the research some interesting insights have been found that will guide the future vision of the company. The insights are gathered below and will form a basis for the customer interviews that will be conducted and for the future vision workshop. These insights will be used to inspire the employees to think about their potential future.

Big tech is a big threat
Big tech companies already have a lot of data on advertising. This data could be used to create click through rate prediction in a bottom up approach. In this way companies could pre-test their advertisement before launching. A possible way for expoze.io to distinguish from these companies in the future is to create deeper insights, asking more questions about why an advertisement performs or not. This also aligns with other research insights.

Neuromarketing as USP
expoze.io is also only one of two companies in the AI eye tracking market that is based on a neuromarketing company, this means that they have great knowledge on human behaviour. For them this could be the distinguishing factor of their competition, the knowledge about why commercials perform.
From the analysis of eye tracking technology it was concluded that eye tracking does not come to its full potential without the use of EEG. In combination a lot more can be said about the results. Alpha.One understands this and is already putting in efforts to use EEG in order to create emotion analysis results. Once emotion can be analysed from EEG this could also be trained into a predictive algorithm, enabling deeper insights.

Result interpretation
From competitor analysis it was concluded that their customers have trouble interpreting the heatmap and take great value in the support of qualified consultants that the competitor offers.
In many of the competitors platforms metrics are used in order to give the customer easier analysis of the heatmap. Some of these scores like excitingness scores are not that valuable for the user. Clarity scores can also be easily understood by just looking at the heatmap, still the customer finds value from these scores. To understand what the value of these scores are for the customer some questions about this will be presented in the customer interviews.

Product category is quite unknown
While the product is already quite futuristic some trend research was performed. In this trend research it became apparent that the product category of AI eye tracking prediction is not well known, as it was not mentioned in any trend watching website. The best known application for AI in marketing is the application for big data, in which AI can make sense of the big amount of data gathered online. It is therefore necessary to make the product category more well known in the marketing scene to gain visibility and improve the sales.

Video analysis currently is USP

Video analysis is a USP compared to most of their competitors.Video analysis could even help to evaluate more natural scenarios. Creating video for certain web usage scenarios could help to create a more natural and dynamic scenario, like scrolling through a web page or application. This helps the algorithm to view the content as people would view it.

Less interesting for small businesses

The expoze.io product is less interesting for smaller businesses as the impact gained is significantly less than when used for big viewing numbers. Big corporates have big audiences, improving sales by 1% through advertising optimization is a big deal for their sales volume. The target market of expoze.io therefore can be reduced and marketed more specifically towards big corporations, or the middle man and consultancies that help those big corporations with their optimizations. In order to understand the value the product brings towards these companies, customer interviews will be conducted.

These insights will further be used in the workshop to stimulate creativity and open up minds to look at the product differently. The insights will also be used in order to create the future vision and to fill in the steps towards this future vision with the roadmap.

5 Generating

Customer interviews and vision workshop are used to generate ideas for the roadmap. The customer interviews are used to understand the customer better and find the customer value of expoze.io, which in turn will be of great importance for creating the company purpose. The workshop will be used to test the future vision with the company and make sure there is discussion involving their opinions about the future of the company.

Customer interviews

To gain a better understanding of the value of the product interviews were conducted with customers. Through analysing the interviews a more latent value can be found. The interviews will also review what is the interest with metrics in competing products. The interviews will give insights on what will be the most important improvements and help build the future roadmap.

Customers
The customers that have been interviewed were from different company categories in order to make sure that every category was represented, see Figure 19.

Category	Interviewed
Neuromarketing company	2
Behavioural change consultancy	2
Marketing middle man	1
Big corporate	1

Figure 19. Customer interviews by segment (The exact list can be seen in confidential appendix C)

The goal of the interviews is to get a better understanding of their full customer journey. This journey begins with how they found the product, in order to understand better how they became clients.

To find the latent value it is important to understand what goal the user tries to achieve with the product that they chose. The product is the means to reach this goal, therefore giving a better understanding of the value of the product.
To understand what the deciding factor is between different options for the customer it is important to understand if they researched different options and why they chose expoze.io. To get a better understanding who to market towards it is also interesting to understand who in the company makes the decision on what tools to buy.

If they have used competing products it is interesting to understand what they think of the metrics that are used by the competitors and what the value of those metrics are to them. If these metrics really provide value, then it might be interesting to incorporate them in expoze. io.
In order to understand the application and use of the product the full use journey is of interest. Does the person who analyses the heatmap discuss it with someone else, maybe their boss?

To get answers to all these different topics an interview guide was set up, which can be viewed in appendix A. Customers were interviewed with a semi structured interview method.

Analysis

After the interviews were conducted analysis was performed. The converstation was recorded and rewatched, in order to make best use of the time, only the quotes that were coded were actually transcribed. The transcribed codes can be found in confidential appendix D. The codes were categorized to make sense of the connections. Afterwards the codes were labeled and grouped, the outcome of this can be seen below. This process is based on grounded theory, see Figure 20, but shortened in order to fit into the project timeframe.
Initial coding was applied by transcribing initial quotes and creating general categories, these categories can be found below. Afterwards these categories were sub categorized into core categories. These categories were analysed and the outcome is the customer value. Normally the thought process is written down step by step through memoing, this has not been done in this research as the research was quite short. The thought process is explained for the customer value part.
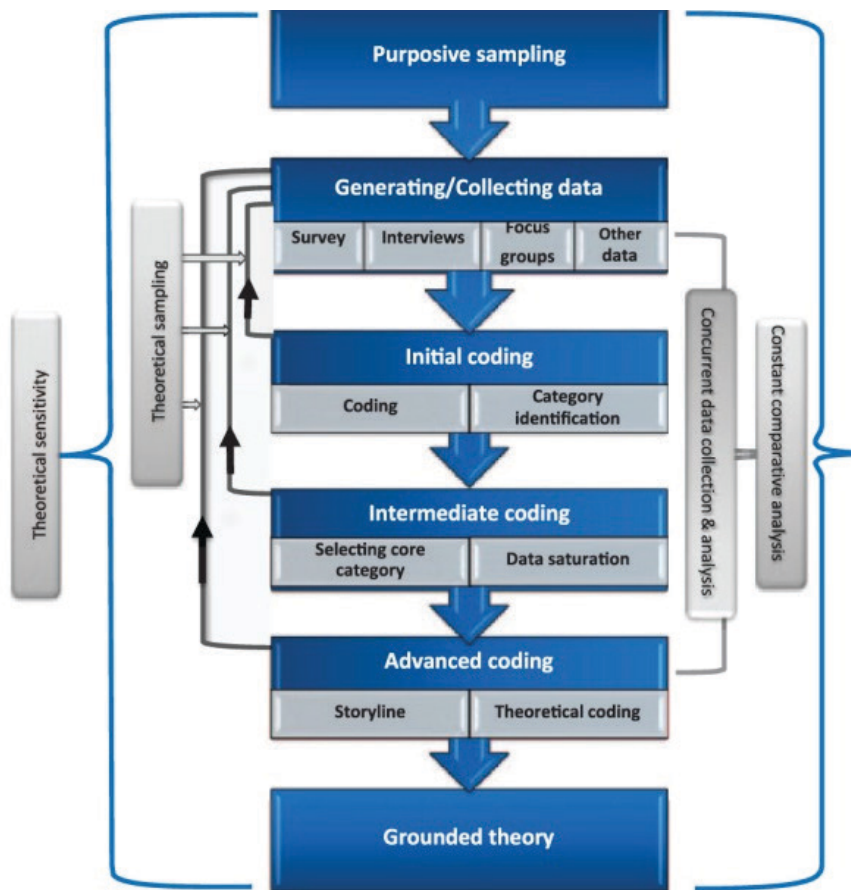

Figure 20. Grounded Theory

Initial coding

The interviews were analysed by reviewing the interviews, labelling interesting quotes with their timestamps, so these can be found back in the recorded interview. After this all quotes were divided in general categories, which can be seen in Figure 21, these were as following:

- Buying decisions
- Value
- Features
- Bugs & updates
- Interpretation & knowledge

Knowledge represents the knowledge gap for using the product.
Bugs & updates represent the short term roadmap, on which decision of prioritisation can be made of what to fix first.
Features represent the medium term roadmap, on basis of which decisions can be made of what features are really wanted by the customers and thus on which higher prioritisation can be made. This will also be based on the Value proposition that will be determined.
Value represents the long term roadmap, what is the value that customers get from using this product. These outcomes can also be used in marketing communication as the value proposition can be made with this.

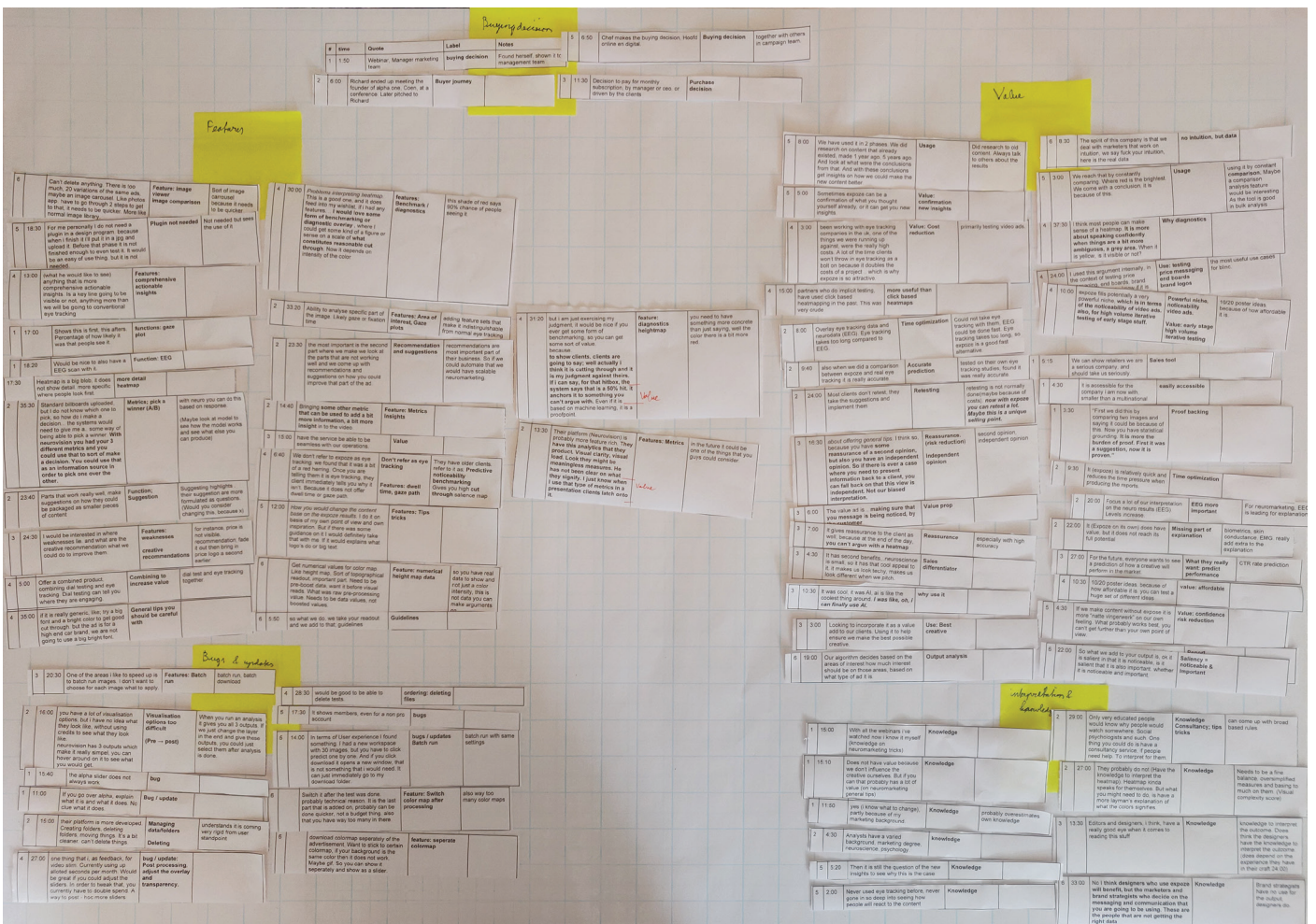These general categories were subdivided into smaller core categories, these will be explained on the following pages.
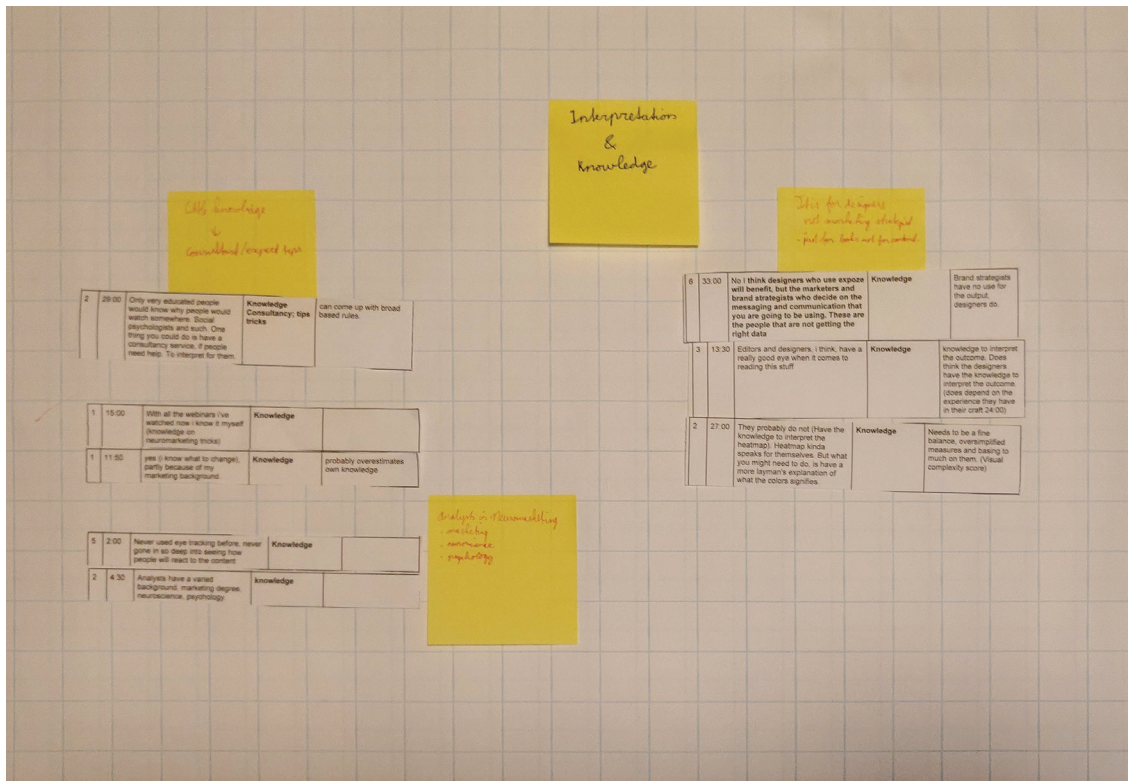

Figure 21. Category identification

Figure 22. Core categories within general category Knowledge

Knowledge

By looking at the insights about knowledge, see Figure 22, we can see that the opinions are divided if people have the knowledge to interpret the heatmap and to know what to change based on the results. Overall the behavioural scientist had a lot of confidence in designers to interpret this, because they have a "really good eye" for it, this is because of their education that already teaches them importance of color and hierarchy in design.

Another opinion by a neuroscientist is that most people don't have enough knowledge and a consultancy service could be helpful to help them interpret the outcome. This is something that could be interesting in the further future, because most adoption in the first part will be from people that already have some experience with eye tracking and want to replace the current more expensive eye tracking solution.

Another interesting thought that backs up claims that marketers find A/B testing more easy is the quote of a customer;

 "The brand strategists who decide messaging and communication that you are going to use, these are the people not getting the right data."

Meaning these marketers do not have that much use for expoze.io, the messaging and communication will not be validated, just if the message is salient (is it noticed?). They can test their messaging and communication easily with A/B testing, keeping design the same while changing the message. This comment tells that expoze.io currently is not giving much in depth information, just the saliency data. It also tells that sometimes quick A/B testing of advertisements could give deeper insights that actually give data about the message that is presented to the customer.

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The analysis of the outcomes of Bugs & Updates and Features can be found in confidential appendix E. Below the most interesting quotes that will relate to the purpose will be discussed.

Features

One important thing learned from the research was that competitors often use metrics. The interesting thing about metrics is that the main reason why the customer wants these is to have something to show a client. The more secondary reason is to have more insights, this is well represented by the first quote. Everything nowadays has to be data based, consultants their opinion gets less significant, people trust data. Some quotes from the clients that indicate these reasons:

Quote 1:
*"They (a competitor) have analytics, visual clarity, visual load. Look, they **might be meaningless** measures. I just know when I use that type of metric in a presentation **clients latch onto it.**"*

Quote 2:
Clients are going to say: well actually i think it is cutting through. It is my judgment against theirs. If I can say, for that hitbox, the system says that is a 50 % hit. It anchors it to something you can't argue with." .. " *It is more about **speaking confidently** when things are a bit more ambiguous, a gray area."*
This was an argument for height maps and area of interest, in these you have the real data, which a client cannot argue with.

On recommendations
Quote 3:
*"Because you have some **reassurance** of a second opinion, but you also have an **independent opinion**. So if there ever is a case where you need to present information back to a client, you can fall back on that this view is independent. Not our biased interpretation. "*

The value of these insights thus are for reassurance and speaking more confidently. This is something very important for consultancies, but it also has an impact on a person in a big corporate, they have to show the results to their boss. It takes away most of the accountability from the person and gives some to the platform.

For consultants it is not mostly about accountability but having backup, having the reassurance of an independent party that you can rely on.
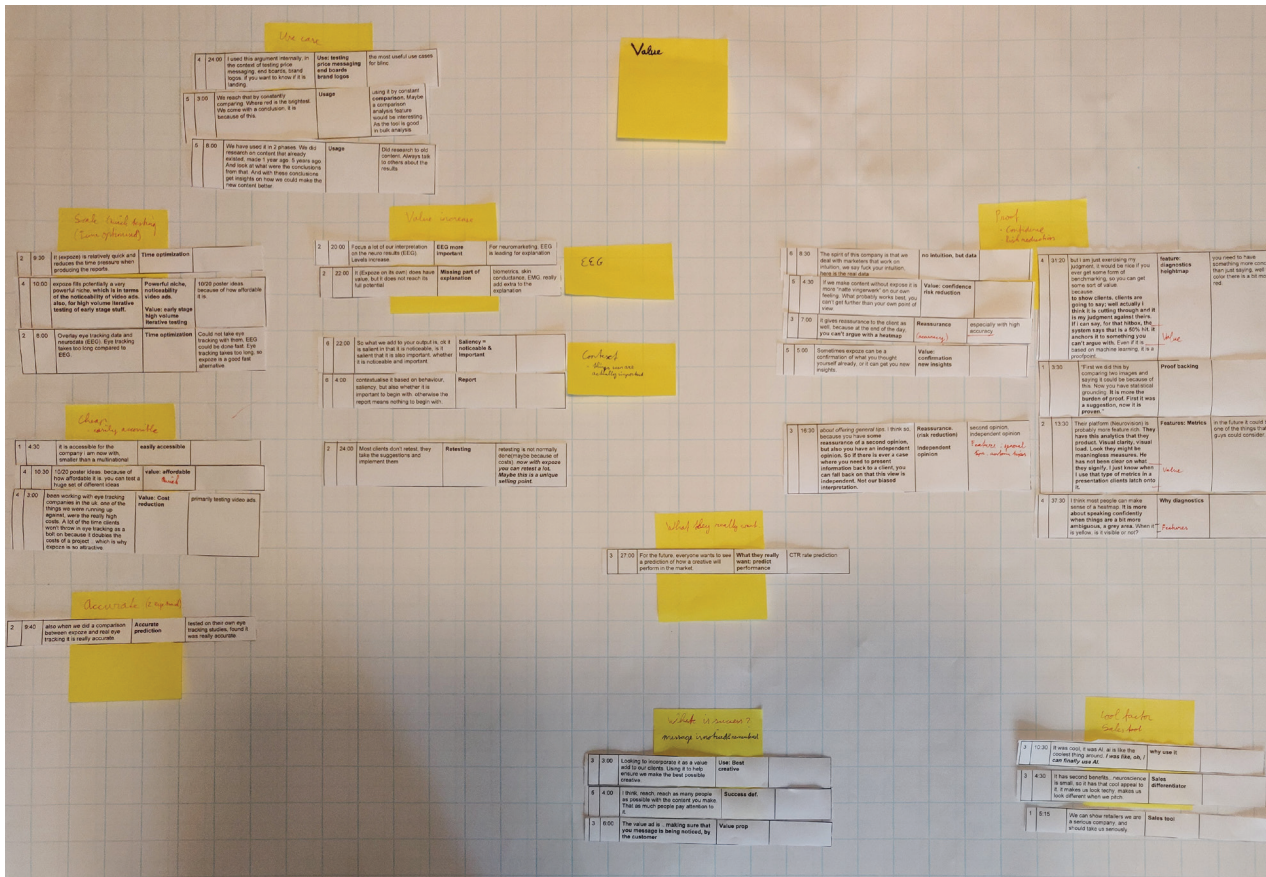
Figure 23. Core categories within general category Values

Values

In this category the codes that were connected to the customer value were sub categorized, see Figure 23. The sub categories are listed below. The most important value were the quotes in the category proof, as this connects with the values that the features mentioned before will bring. This shows a more latent value of the product than values that have been obvious from the start, such as that it is quick and cheap.

- Proof (9)
    - Confidence
    - Risk reduction
- Quick (3)
- Cheap (3)
- Value increase by
    - EEG
    - Context based analysis
- Accurate
- Cool factor (sales tool)

Quotes about proof:
*"If we make content **without expoze.io** it is more **guesswork** on our own feeling."*

"We deal with marketers that work on intuition, we say **f*ck your intuition, here is the real data**."

*"It gives **reassurance** to the client as well, because at the end of the day, **you can't argue with a heatmap**"*

*"Now you have statistical grounding it is more the burden of proof. **First it was a suggestion, now it is proven."***

These quotes that talk about the value of expoze.io connect with explanation of why certain features were requested, as mentioned before. These features give them more confidence because it gives data that can't be argued with. expoze.io already gives a heatmap, which is something that can not be argued with and this creates value for the customer. These statements give insights into what is really the latent value of expoze.io. This value is more about **confidence, reassurance and backup.**

Looking at the b2b elements of value as presented before, the product helps at the individual value of **reduced anxiety**, the product gives them more confidence to speak about their analyses and it gives them data as reassurance and backup. For the consultancies it also helps in the ease of doing business, it gives some risk reduction, because the clients will argue back less, thus less risk of a bad experience with your consultancy.
Accountability is less on them, but more on expoze.io. This is something that needs to be considered carefully, because expoze.io does not want to get blamed by consultancies if their advice does not give great outcomes.

The product also helps consultancies with **marketability** as this is a tool that can distinguish them from the competition, they can use it as a sales tool towards their customers.

"it has that cool appeal to it. It makes us look techy, it makes us look different when we pitch."

"We can show retailers we are a serious company, and they should take us seriously."

The more obvious productivity values are **reduced effort,** because you don't need real people to conduct eye tracking studies on, which also takes ages to set up and complete. Meaning it also comes with **time savings.** This all results in the economic value of **cost reduction.** These values were already quite obvious from the start, but are now confirmed to be contributing factors in the purchase decision of the product.

In conclusion
The most interesting finding of the interviews is the latent customer value of the platform giving them reduced accountability. What they analyse is not just their opinion, it is backed by a heatmap. This in turn gives them more confidence to present their opinion, because they are being backed up by an independent party. This again gives them more confidence in their analysis, but also gives more confidence in the advertisement. Therefore the subjective customer value of the product for the customer is **confidence.** Through confidence the customer reaches reduced anxiety, a B2B element of value.

Creating this customer value is the purpose of the company, giving confidence. Next to that the main target of the customer is to make marketing efforts more effective, therefore the confidence need to exist in the marketeers. It is important to mention who the company is bringing confidence to, in order to further press the human shift that the company needs. Through this purpose the employees of the company will look more through the eyes of the customer.

The purpose of the company:
Bringing confidence to marketeers

If the marketeers gain more confidence from expoze.io the value of the product for the consumer will rise. In turn the product will generate more sales, as the customer sees more value in the platform. This is why bringing confidence to marketeers is the purpose of the company, improving this in any way will increase customer satisfaction and sales.

Generating the vision

The vision was generated by brainstorming with the research insights and the purpose that was generated before.

Insights leading to vision
The basis for the vision lies in the purpose that is generated in the previous chapter: Bringing confidence to marketeers. This is because the vision is a projection of the purpose in the future.

An outcome of the research was that customers struggle with analysing the outcome, see competitor analysis. Alpha.one has the scientific expertise in neuromarketing in order to create insights based on neuromarketing data, as they do with the consultancy. Therefore creating more interesting analyses for expoze.io, that will create easier insights for customers, will become important for the company to solve. These easier insights and better understanding of their marketing material will lead to more confidence in their material.

The company has a background with science expertise in neuromarketing with Alpha.One, unlike other competitors that have made similar products. But the main differentiating factor from Facebook/Google in the future is the brain data that expoze.io will be able to collect through Alpha.One. They will be able to use science in a bottom up approach, but not the brains for a top down approach to understand advertising effectiveness.

In the marketing trends analysis it stated that data driven marketing is causing marketeers to become more accountable for the effectiveness of advertisements. They need to be able to explain to their superiors why something is or is not effective.

Another consideration was the strategy that the CEO of Alpha.One told in the interview. Alpha.One being a supporting company for expoze.io. This idea can not only be viewed financially for the initial startup phase, but it could also extend into the future. The Alpha.One company can gather data that will be turned into AI prediction software.

Eye tracking on its own does not come to its full potential. Through eye tracking only salience can be predicted but not attention. With the addition of EEG measurements the attention of the consumer can be revealed. This will create deeper insights and offer more value than competitors.

This all leads to the vision, which will be further explained on the next page, the brainstorm that led to this vision can be viewed in appendix B.

Vision

"Bringing the brains to the art of marketing"

Further explanation

The art of marketing represents the time that marketing did not have accountability, as it was an art which is not measurable. Marketing has always been a bit abstract, some marketing campaigns seem to work while others do not.
But the trend in marketing is that marketeers and designers are getting more accountable and want to make sure that what they create will perform, this is where expoze.io helps them to have confidence in their creations.

Bringing **the brains** to this art of marketing represents the confidence that this will create in the future. If everything about how the brain perceives advertisements can be turned into prediction AI then the marketeers will be full of confidence. In this ideal future for marketeers it is fully understood what leads to effective advertisements. This could be done by creating predictive AI for EEG or fMRI in order to bring deeper insights to the customer as this would create more confidence, while their competitors cannot do this because they don't have the data. This essentially is bringing the brains into artificial intelligence prediction platforms. It thus also refers to the proverbial meaning of bringing a smarter way to marketing.

That is why bringing the brains was chosen instead of bringing science to the art of marketing, as every competitor can bring science to the market but not the brains.

This vision will be tested in the workshop session in order to understand if this fits the views of the company. The workshop is also for the people working at expoze.io to start thinking about the future and being able to participate in creating this future.

Vision workshop

The future vision workshop gives an opportunity for all people of the company to share their ideas and for other people to understand the outlook of someone else. The workshop also gives the company a feeling of having a part in the process of building the roadmap, which is important in order for the roadmap to be put to use in the future. Communication about the further future is also not often shared within the company, so this is a step into a new innovation process which will be discussed in the Deliver phase. The goal of this workshop is to test the future vision that has been created before. If the vision is not supported by the company the vision chosen by the most people will be used and further developed.

The workshop

Goal of the workshop:
Having everybody share their ideas and test the future vision. Making sure there is common ground between everybody in the company.

The workshop was held via Miro, an online whiteboarding tool, because of the coronavirus. Online meetings are not great for having intense discussions, especially not with eight people, therefore the following was done for everyone to get their ideas across. For every question the participants had 2 minutes to think of ideas and afterwards 30 seconds to explain their most interesting idea. This way everybody from the CEO to a new employee had their ideas heard. This creates a more general understanding about what every person thinks about the future and it takes a first step towards a shared understanding of the future vision.

The workshop was built in three parts:

1. **Purpose**
- What do we do for our customer? (Will get more functional answers)
- What is the value for the customer? (More feelings and emotional answers)
2. **Presenting & probing**
- Confidence & reinforcement
-     What would expoze.io look like in the future based on these values?
- First consultancies, then big corporates (no small business)
-     What qualities / features / needs are important if the platform would just be for consultancies?
-     What qualities / features / needs are important if the platform would just be for big corporates?
- Facebook and Google could create an AI that predicts the CTR (click through rate)
-     How will expoze.io differentiate itself from Google / Facebook in the future?
3. **Visioning**
- What is a vision? With examples
- What is your future vision for expoze.io

See figure 24 for the workshop

The first part of the workshop is meant to dump the ideas and preconceptions of what they do as a company into more functional aspects, this is to make sure their preconceptions of what they think they do are out so they can start to think more about delivering value instead of functions (because the team is really technologically focussed). After that start thinking about the values the product delivers to the customer. Something really important for a vision is to know what value you bring to the customer. This way you can still deliver the same value when innovating, but in a totally different way. (say the value is confidence for marketeers, this can also be delivered with getting them a neuromarketing diploma, thus giving the same value but in a different way)

The second part of the workshop was about bringing the insights of the research phase to a potential future. The insights of the research phase were used as a probe to start thinking differently about the product. This helps to think about potential futures in a different way than the participant already had in his head.

This all leads to the third part which was creating a future vision. The vision is a dot on the horizon to work towards and does not have to be specific, this is why there were some examples given of vision that represented this. Afterwards the participants would have 10 minutes to create their best vision statement. Afterwards the participants got three votes to vote on their favorite statement, this is to see if there is a global vision that supports most of the people's view of the future.
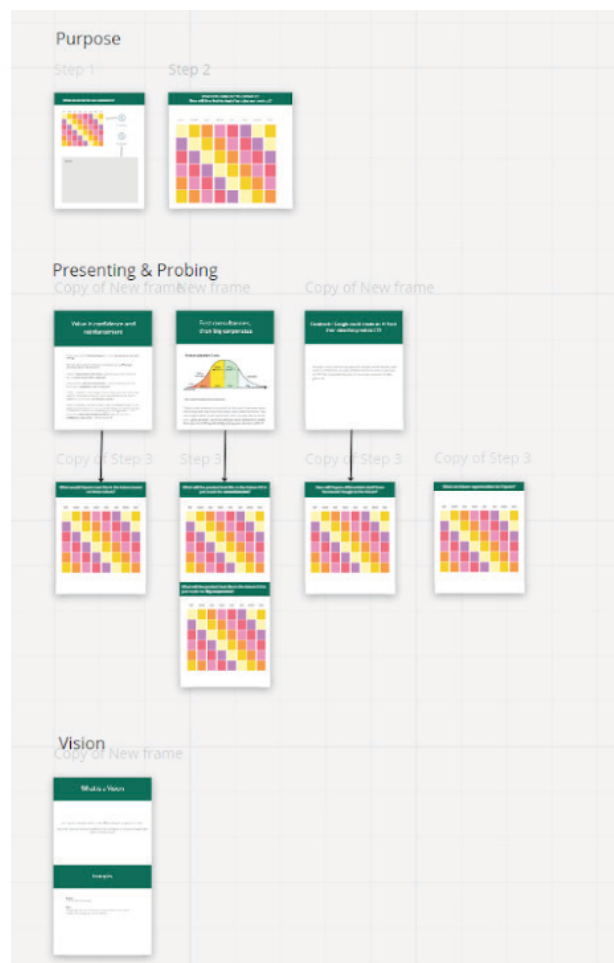

Figure 24. Future vision workshop

Outcomes

After the workshop was completed the sticky notes were grouped, this was not done during the workshop as this would take too much time. The grouping of the sticky notes gives a better view into the overlapping thoughts of the team. With the first two questions the purpose of the company was discussed. After this presenting & probing was done, there research insights were presented and the people were asked to give their input. The probes and outcomes can be found in confidential appendix F.

Figure 25. Purpose step 1

These are quite interesting outcomes, because it gives a connection to a deeper job to be done for the customer. Due to expoze.io the customer creates an understanding of what works and what does not work in advertisements, this can help him/her in the future to create a better advertisement. This better understanding also helps, just like metrics, to make a decision on what advertisement to put into the market. As said before, the platform gives confidence in making this decision.
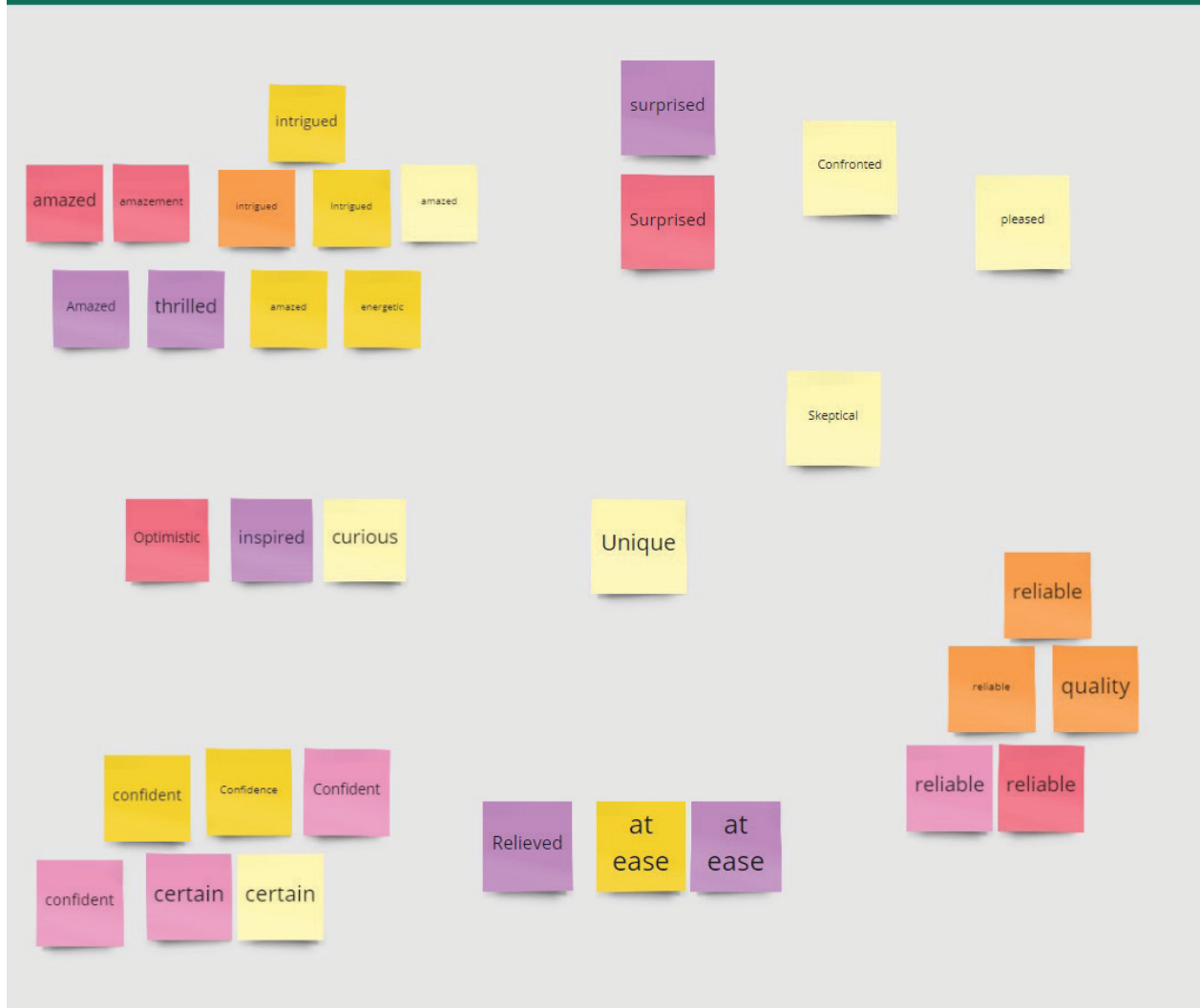
Figure 26. Purpose step 2

The value that the understanding and easier decision making brings to the customer are those of confidence and feeling at ease. As is already pointed out by the employees without being presented the outcomes of the interviews.

Confidence also depends on other feelings that are described. These feelings are of quality and reliability in the product, the product has to prove that the outcomes are valid to create a feeling of confidence. If the accuracy of the heatmap was 40%, the customers would not feel confident in the results.

The output of the platform can also create a feeling of being surprised or feeling confronted. The confrontational feeling is something delicate to keep in mind. For someone to have created an advertisement to hear it will not do well in terms of attention can be confrontational and create a negative feeling towards the product.
Other feelings like being amazed or curious is something that will wear off and is not future proof.

Figure 27. Probing; confidence as value (Removed for confidentiality, see
    Confidential appendix F)

A big thing everybody agrees on is that the insights need to be made easier to understand, this problem was already mentioned in the competitor analysis. This makes sure that somebody actually gets value out of the outcomes and can make decisions based on the outcome. A way to accomplish this is to create metrics, metrics help to create a decision based on a number. Another big step in creating more understanding is creating emotion prediction, as said in the research phase eye tracking in itself does not come to its full potential. Bringing in emotion prediction based on EEG will make sure the platform gets to its full potential and bring deeper insights into the ad analysis.

Figure 28. Probing; Facebook and Google as future threat (Removed for
    confidentiality, see Confidential appendix F)

The company here thinks that specific neural networks are something to distinguish themselves from competition, but this is not an easy scalable solution. In the future you would want a neural network that covers every type of marketing in all markets.

Where the company agrees with the research is that the company is science backed and should create more meaningful insights. The differentiating part between expoze.io and Facebook or Google is that expoze.io is more scientific (neuroscience) based, thus giving deeper insights instead of just showing a CTR. Just showing a CTR will not help you improve the advertisement in order to make a better ad. This is where expoze.io will have an advantage, giving the customer more understanding in what works and what doesn't. This could eventually lead to being able to generate ads or optimize ads based on what works automatically.

Daan

Supply clients with the tools they need to create their best possible ad, design, product.

Support clients in creating their best performing ad, platform, product or design by using state of the art technology in order to reduce cost, reduce time to market and drive business performance.

Pantelis

Help consumers understand how their attention and behavior works

Help clients get the most out of their consumers' attention

Make sure important/relevant messages don't get lost in all the noise.

Coert

Automated insights through validated and transparent behavior modeling

AI is here to help you make your best ad

Let the data drive your best ads

John

Show the true meaning.

Stop guesswork, start validating.

Coen

Help creatives make their best work

Get people to pay attention

Get the most out of your creative

Valentin

"Optimzed ads for specific needs"

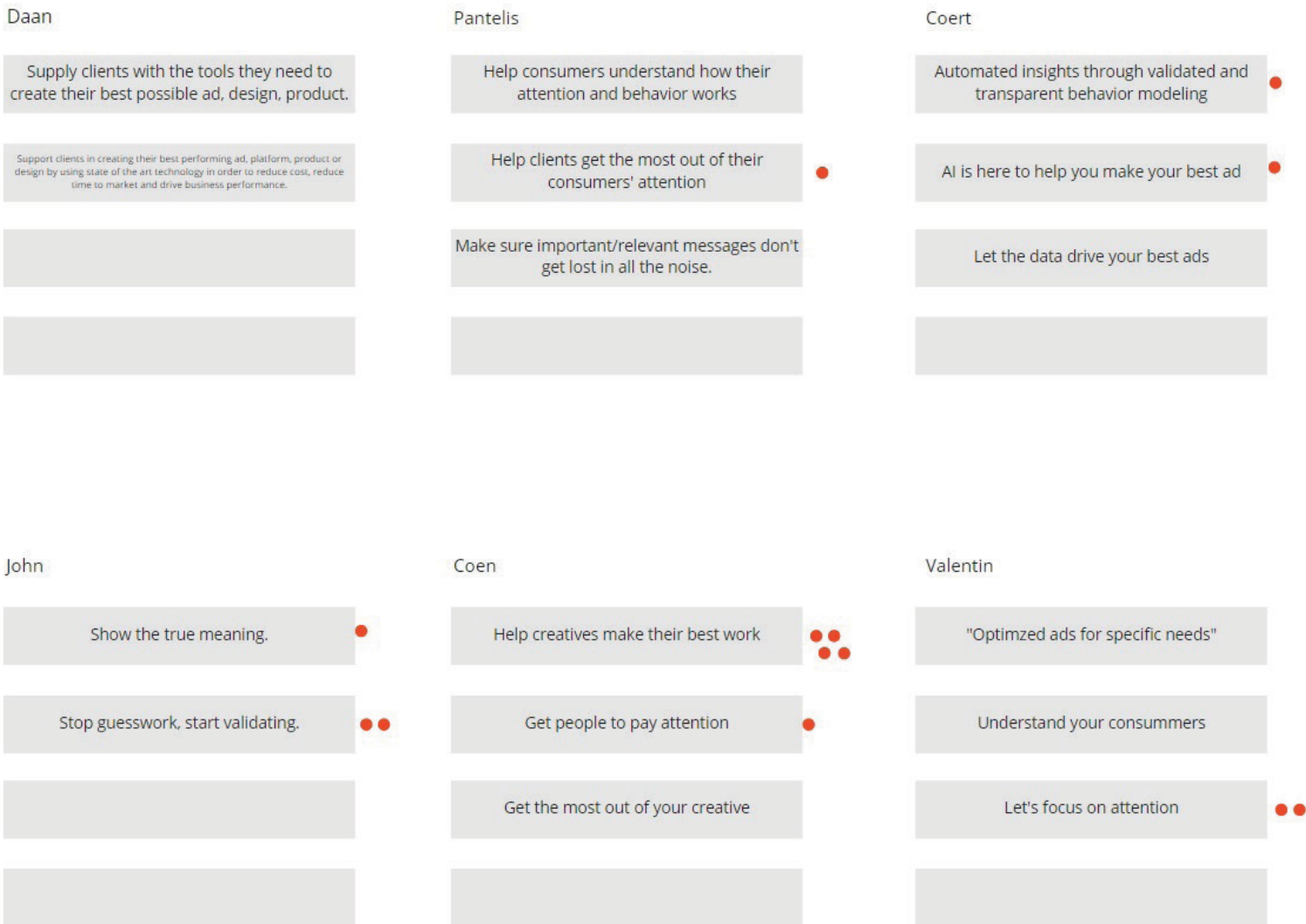Understand your consummers

Let's focus on attention

Figure 29. Vision Creation

Martijn

Be the best possible human response prediction platform

Move the world from opinions to measurability when it comes to design and conversion

Helping organisations to be in control on marketing spend

Lea

bringing light to visual attention

giving designers the tools to see/feel what their customers see on their ads

Seerp

Bringing the brains to the art of marketing

Marketing in not anymore about intuition, it is a science

Create the best ads straight from the brain

consultancy straight from the brain

Click to select me, then copy me!

Vision

What is interesting is about that half of the visions that were created, see figure 29, mostly focus on the technological aspects of the product. This confirms once more the technological focus within the company. For example: be the best possible human response prediction platform, it fully focusses on the product and not on the customer.

The vision that was developed was actually chosen by the people working at Alpha.One, thus the test is successful and the vision aligns with the views of the company.

In a close second the vision of Lea was chosen, bringing light to visual attention. This is an interesting vision, as this is something that came from the market research that this product category is relativity unknown with trend researcher. This will also be considered within the roadmapping process.

The vision that will be used for the roadmap:
"Bringing the brains to the art of marketing"

6 Deliver

In this chapter the actionable deliverables will be designed. These are the roadmap, consisting of a design roadmap which explains the strategy with an overview and a strategic roadmap which goes into details about the exact steps of the strategy. Next to that an innovation process will be designed that will fit a startup, this process will integrate with the roadmap and make sure the shift to a more human centered company will take place.

Roadmapping

In this chapter the roadmap is introduced and explained. The Roadmap is based on a three horizon approach, from short term to long term. These horizons and their steps will be explained as well. The roadmap will be displayed in two different forms, a design roadmap (see next page) and a strategic roadmap(confidential appendix H). The design roadmap will visually explain the strategy, while the strategic roadmap will show every step that needs to be taken in order to reach that vision.
Before the roadmap is introduced it is important to repeat the research questions that deals with this part and see which have been answered.

Research questions repeated
•   What is the purpose of expoze.io?
•   What is the latent customer value of expoze.io?
•   What are market gaps / differentiating factors in the market?
                How to make sure the team interacts with the roadmap?

The first three questions have been answered and are explained below. The last question is something that is a part of the roadmap, the company becoming more human, but this mainly follows from the process. The process will be presented in the next chapter.

The customer interviews and the workshop have answered two of the biggest components of the roadmap. The purpose of the company which arose from interviews with the customers in which the latent value was discovered. The use of expoze.io makes them feel more confident in their analysis, in their consultation and thus in their job. The customer value has been translated into the company purpose. As creating value for the customer is the purpose of the company. The second big component is the future vision, which sets the further horizons for the future of the company. The future vision has to align with the purpose of the company, to make sure it addresses this value. This vision was made during an interactive workshop to make sure the team had some say in the direction of the company.

Purpose: **Bringing confidence to marketers**
How?
Future vision: **Bringing the brains to the art of marketing**

Core strategy
The core strategy that is reflected in the purpose and vision is creating deeper insights, insights which give the customer a better understanding about creating effective advertising. What follows from this deeper insight is confidence. This core strategy follows from different insights. expoze.io is only one of two companies in the market that is based on a neuromarketing company, which means they have the knowledge to create interesting insights. Secondly this gives the advantage of being able to capture data within their neuromarketing company to train AI models on. In the future these deeper insights could also differentiate them from potential big competitors such as Google and Facebook, as these companies can only create CTR insights with their data.

Roadmap format

Making sure the team interacts with the roadmap is not something that will definitely happen, but the environment for this has to be created. An important part of this is that the roadmap will be integrated into their new innovation process, explained in the next chapter, in this way easily being able to update it. The intended strategy is what will be set out in this chapter with the roadmap, with the next chapter setting a basis for emerging strategy. The basis for being able to make emerging strategy viable is a roadmap that is adaptable. This is why the roadmap is not a PDF file, but it is an online whiteboard where it is easy to create change. It is also in this time of Corona and working at home a must to be able to easily collaborate online. The further process on how this change will be facilitated by an innovation process will be described in the next chapter.

Shown on the next page is the design roadmap, this is essentially a summary of the strategic roadmap that will be explained later. The design roadmap is made in order for everybody to understand the direction that the company will take.

The first step for that company is that it needs to gain more exposure for the product. During this step it is also important that the product gets easier to understand, including giving easier insights. In this step data will also be gathered in order to create new neural networks in the future.
Secondly deeper insights will be generated with emotion analysis, in the meanwhile creating automated insights based on the content of the picture.
This all will lead to understanding why certain advertisements work, by connecting their optimized advertisement to CTR data. Through generative AI advertisements can be made with the most efficient outcome. Effectively bringing the brains into the computer with AI, and making a science of what once was the art of marketing.

The steps of the roadmap will be explained in more detail after the design roadmap

expoze

Strategy

Strategy

Service

USP

Horizon 1

Bringing light to visual attention

This horizon focuses on creating more exposure for the product. Creating a more human and thus easier product, with understandable insights. In this horizon there will already be invested into the next horizons which will not yet benefit this horizon.
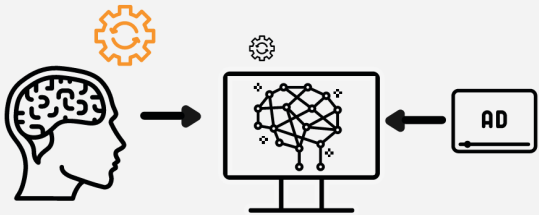
Analysis is mostly performed by the person

Value

**The details of the roadmap
the detailed roadmap can**

## Expoze.io

Alpha.One

Trends

Horizon 2

Show your emotions

This step is all about bringing the platform to its full potential and going towards the differentiating factor; creating deeper insight. Combining eye tracking with emotion data creating more interesting insights.
Through studies about marketing effectiveness new insights will be created which the platform can automatically give the customer for specific contexts.
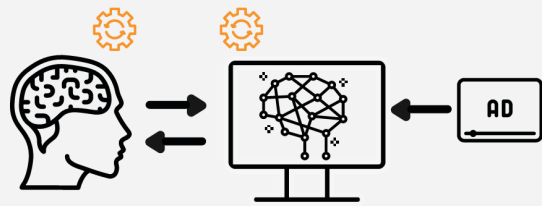
Analysis is a balance of person and AI. AI delivering deeper automated insights with emotion analysis.

Horizon 3

Bringing the brains to the art of marketing

Bringing the brains to the art of marketing is represented by the deeper insights that will be brought to the platform. Many different neurological tests will be turned into predictive AI.
Deeper insights can now be integrated within generative AI, the platform will analyse advertisements and optimize them for effectiveness.
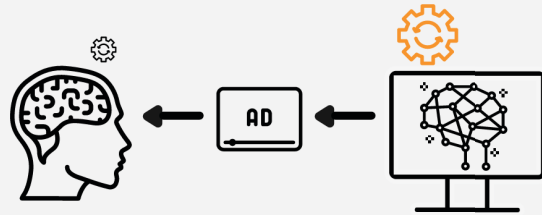
Analysis mostly done by AI, delivering an optimized advertisement for effectiveness.

o have been made blank for confidentiality,
be seen in confidential appendix G

Horizon 1: Bringing light to visual attention

This horizon focuses on creating more exposure for the product. Creating a more human and thus easier product, with understandable insights. In this horizon there will already be invested into the next horizons which will not yet benefit this horizon.

Exposure

This horizon is about getting known in the marketing world, there needs to be exposure for this product to reach clients. As was seen in the marketing trends research, this product category is not well known in the market now, but is also not seen as a future trend. Meaning that this attention needs to be created by the company itself.
This marketing campaign would start with the now known value of expoze.io, bringing confidence to marketeers. This would be incorporated in new advertising material, transferring the value easily tot potential customers.

More human

The second type of bringing light to visual attention is to make it more understandable, create insights that are easier to interpret and base decisions on. This would need to be researched, Ingrid who was recently hired came up with a thumb scrolling metric. In which an advertisement is rated on how easily it makes a person stop scrolling past it, as an advertisement would be placed in the Facebook or instagram app. It would be interesting to research if this is a measure that customers would find interesting and useful before this metric gets fully developed, which is something the technology focussed team of Alpha.One has a habit of doing.

For doing this it would be recommended to hire a designer who has knowledge in doing customer interviews. A designer would help in the transition for the company to gain more of the human aspect, which it is currently lacking. A benefit of this would also be that the designer can do customer testing and create a metric that benefits the customers in the best way possible and is easy to understand.
As this is a problem with the current product, as shown in the product part of the preliminary research section. To create a prediction the user has to go through a difficult to understand menu, which a designer could also contribute to making a better user experience.

Lead users

The more human aspect will also be reflected with an innovation process which focuses more on the customer. This will be explained further in the next chapter. A part of this process is to get more customer feedback. In order to do this, lead users will be contacted to give feedback every once in a while.

Metrics to automated insights

The metrics will form a basis for automated insights. Metrics are a first step towards creating deeper insight into why an advertisement works or not. In the second horizon automated insights are a key feature, explaining why certain elements in the picture will work or not. That means that in this horizon image recognition needs to be built into the product, in order to recognize elements in the picture that would increase or decrease performance. Next to that a database needs to be generated with generalized insights. Combining these two together and specialized feedback can be given.

Before this will be created, it would be tested if this function would benefit customers, this could easily be set up with a simple test. For the test a button would be created for expert insights in which a neuromarketing expert would help with interpreting the heatmap. If the test shows enough interest the feature can be further developed because it proves the need for specialized insights.

Setting up for the future
In this stage research is already being conducted on emotion analysis, this is done within Alpha.One. Emotion analysis would first be conducted with EEG tests on real people. If this is proven effective the company could start working on creating an AI for emotion prediction, which would be in the second horizon. In the first horizon it is thus of big importance to already start investing for the second horizon.

Horizon 2: Show your emotions

This step is all about bringing the platform to its full potential and going towards the differentiating factor; creating deeper insight. As was concluded from the eye tracking analysis, eye tracking on its own does not come to its full potential, but combine this with emotion data and it will create more interesting insights.

Emotion insights
Emotion analysis will finally bring eye tracking to its full potential on the platform. This can create deeper insights, but these insights are mostly created by experts. This would make it wise to do research on how to implement the emotion analysis before implementing it on the platform. Making sure customers can interpret the results of eye tracking in combination with emotion analysis. Therefore before the emotion analysis is fully developed into an AI, research into potential customer experience has to be started beforehand.

Automated insights
The insights that are generally applicable can be automated, giving the customer an unbiased opinion on what does not work and why. This will extend the basic functionality and will give value that is unique to expoze.io. An important part to make these plans happen is to already start collecting data and begin research on emotion analysis. As this will give a competitive advantage as it will take time for competitors to recreate this, as explained before in the SWOT analysis.

Click through rate
Gathering click through rate data in order to understand what advertisements work and which one do not work. This could be compared to the eye tracking and emotion data, which will first create better results for the platform. Secondly this could be the basis for automatically generating advertisements which perform well on click through rate.

Horizon 3: Bringing the brains to the art of marketing

Bringing the brains to the art of marketing is represented by the deeper insights that will be brought to the platform. As a neuromarketing company a lot of tests on actual consumers are performed, these tests can eventually turn into predictive AI and thus be brought to the platform. In order to do this a lot of data needs to be gathered, this will be an ongoing effort throughout the horizons by Alpha.One to maintain competitive advantage. This data will be needed to train an algorithm.

This horizon is quite far in the future and technologies mentioned are quite far from being realised, but by looking at current development of technology and combining these a potential future concept of the product can be described. The future concept aligns with the values that have been found and built on the concepts from earlier horizons. This future concept is not set in stone and will most likely be altered in the future, it is merely an inspiration and something to work towards.

Optimized advertisement generation
Once it is better understood what makes advertising efficient. The platform could create generative AI. In the first phase this AI would automatically optimise advertisements that are uploaded into the platform.
Generative AI would understand the elements that are in the picture due to image recognition which has been built in the second horizon, this will be used to shuffle the elements for the optimal performance. It could even change out elements that are proven to not work well and replace them with elements that will work.

In the second phase the AI would generate optimized advertisements from scratch. This AI would learn from the style of advertising the company has and generate new advertisements based on the personal style of the company. This could be further developed by the company into a concept vision, for this thesis the choice was not to do this in order to have time to create the innovation process. The innovation process would be more valuable to the company and the survival of the roadmap, this process will be explained next.

Innovation process

To make sure the roadmap will be used a process is designed. The process will help to keep the roadmapping activities alive and thus keep the roadmap updated. This process will also enable the shift towards a more human focussed company, where before the focus was mostly on technology.

Research questions repeated.
- How can the roadmap assist in adapting the product to be more Human?

How could the roadmap be adopted into the operation of the expoze.io team?
- How to build an innovation process that fits a small startup team?
    cost, time, effort efficient
- How to create a shift to a more human oriented mindset in this process?
- How to make sure that ideas selected fit the needs of the customers?

The delivery of the roadmap comes with an innovation process that will fit the process of the startup as it currently is. The people working on expoze.io at this moment do not have a lot of time, thus the process needs to be simple, not take too much effort and time. While still being able to make well balanced decisions on the strategy and what features to prioritize. The roadmap will be usable and the process will make sure that everything that will be on the roadmap has a more human focus.

Current state

No planned meetings for innovation
The team misses communication about strategy. There is no standard process for regularly communicating about the strategy of the company and the development of the product. This needs to be applied in order for the roadmap to succeed, but also for the company to succeed. Communicating about the strategy makes sure that the company does not blindly develop a product that does not fit the future. The biggest communication gaps within the company for innovation are in strategy, ideation and sprint planning. The roadmap is based on these three factors. The roadmap contains future strategy, this strategy needs to be updated when markets change or competitors enter the market. Ideation needs to happen to supply the roadmap with content, strategy drives what features will eventually be implemented. In order to actualize these ideas, the long term planning needs to be connected to the sprint planning, otherwise the strategy will not be put to use. For the strategy and ideation currently no planned meetings exist. For sprint planning a scheduled meeting does exist but the choice making is not a written down process, just the opinion of two people with no link to an established strategy. Therefore these three main components of innovation need to be included. The three topics also generally relate to the time horizons, sprint planning is short term. Ideation is for middle long term and strategy is for the long term. These three topics cover the whole roadmap and so these three topics must be addressed regularly.

Prioritizing ideas (tech mindset shift)
How to make sure that ideas selected fit the needs of the customers?
This problem came from the feature driven mindset that manifests in companies to prioritize low level software features. The second indication was that prioritising customer requirements was considered a continuous problem and a challenge in the roadmapping process.

So how can this be solved? The paper (Suomalainen et al., 2011, p. 960) that mentioned the second indication offered some solutions, these solutions can use informal and formal prioritisation methods.
"From the informal prioritisation method viewpoint, for example, Blotner (2004) suggests that initial feature prioritisation is done by the roadmapping team only using the identity information. This means that each feature is presented and input from all team members is gathered. Then the team attempts to agree on a spot for the product feature in the feature priority list. "
This is the method that is already partly used in the team, only the prioritisation is not done by input from all team members, but only two team members. This does not give a well thought out prioritisation. Even if the whole team gave their input they would still be missing a designers aspect (the human aspect) in the decision making. Next to that the input from the customer is missing within this method. Therefore this method will not work.

Quality function deployment (QFD) is also mentioned as a prioritisation solution. Here a matrix is developed with customer needs on the left side and features listed on the top side, in the matrix the alignment between the two is rated on how well the feature meets the needs. The use of this method is mostly before developing a roadmap and is thus not optimized for updating a roadmap and integrating features quickly. This process takes a lot of effort and time that the expoze.io team does not have. This matrix should be simplified but take the core ideas of this solution. It should contain the voice of the customer, product features and the amount of effort it takes to complete the feature. The voice of the customer is really important as the company needs a more human mindset. QFD could be used if the team grows and more time can be spent on the roadmapping process.

Innovation process solution

The innovation process will integrate several ideas in order to answer the research questions mentioned before. These ideas will help create a more human oriented mindset within the process of innovation and make sure the ideas fit with the customer needs. This will all be implemented in a process that is cost, time and effort efficient.

Prioritizing ideas

Prioritizing ideas is done through a prioritisation matrix, which resembles the QFD but in a simpler way. Product features are plotted on a matrix of impact versus effort. Voice of the customer is represented because of the link with the proof, this will be explained further on. Impact is a big indicator for the acceptance of the idea as this addresses the impact it has on the purpose of the company, which is increasing confidence. Impact is plotted against effort, the ideas with most impact versus the lowest effort to achieve this impact are winning ideas. These ideas can be implemented quickly. The ideas that are high impact but also high effort are ideas that still need to be considered on the roadmap. These ideas could be more interesting for the long term, as it takes more effort, but the impact it creates could be worth going through this effort.

Purpose

The purpose will be the main focus in the roadmapping process, as this has the customer value within it. Making sure that the attention is more towards the customer value will help advance the shift towards a more human centered process. The purpose will be used as a check in order for ideas to get selected for the roadmap.

Proof

Proof of the idea needs to be mentioned in order to ensure the customer needs are served. This proof will often come from customer interviews. Proof levels are presented from very low to very high, very low being a self convicted opinion and very high being traction from customers. Connecting ideas with proof will make sure that ideas that will be implemented will fit the customer needs, minimizing development of low level tech features that only one customer requests.

Lead customer interviews

The other aspect that will make sure a customer focus is ensured is to do customer validation. To ensure this will be done lead customers will be contacted. The lead customer base will exist out of 10 early customers, one of these customers will be interviewed every two weeks. This takes about 1 hour and is something that can still fit in the schedule of the team now. If the team grows this will eventually be done more often. In this way the customer only has an interview every 20 weeks, which also does not ask too much effort on their part. The insights of the interview can be gathered on the online whiteboard.

Quantitative customer check

Ideas that could look promising in someone's own opinion can have a low proof. Just because the ideas look promising does not mean they should be moved to the roadmap, as the judgement that the idea is good is just an assumption. This assumption therefore should be checked quantitatively with the customer base, increasing the proof status. As the proof of some ideas could be based on one customer, but this idea is not popular within the whole customer base and if this is developed it makes the platform less scalable.

Implementation with online roadmap

Short workshop session, essentially meetings about the following topics, which before have been explained as most important for the innovation process. Workshops are an important part of innovation, therefore the online canvas is essentially a short simple workshop that creates the opportunity for the participants to discuss the ideas and strategy.

Planned meetings with their respective "workshop process"

Planning the meetings with their respective topics and goals will make sure that the innovation process revolving the roadmap will be an ongoing process. It also ensures that communication will happen between the team members, something that is not always happening right now.

All these solutions are integrated in the process shown on the next page, see Figure 30. Everything starts with an insight, this insight can either come from an employee or through a customer. These insights either have to do with product ideas or strategy ideas. These insights are then discussed in meetings, these meetings will be discussed after the process flowchart.
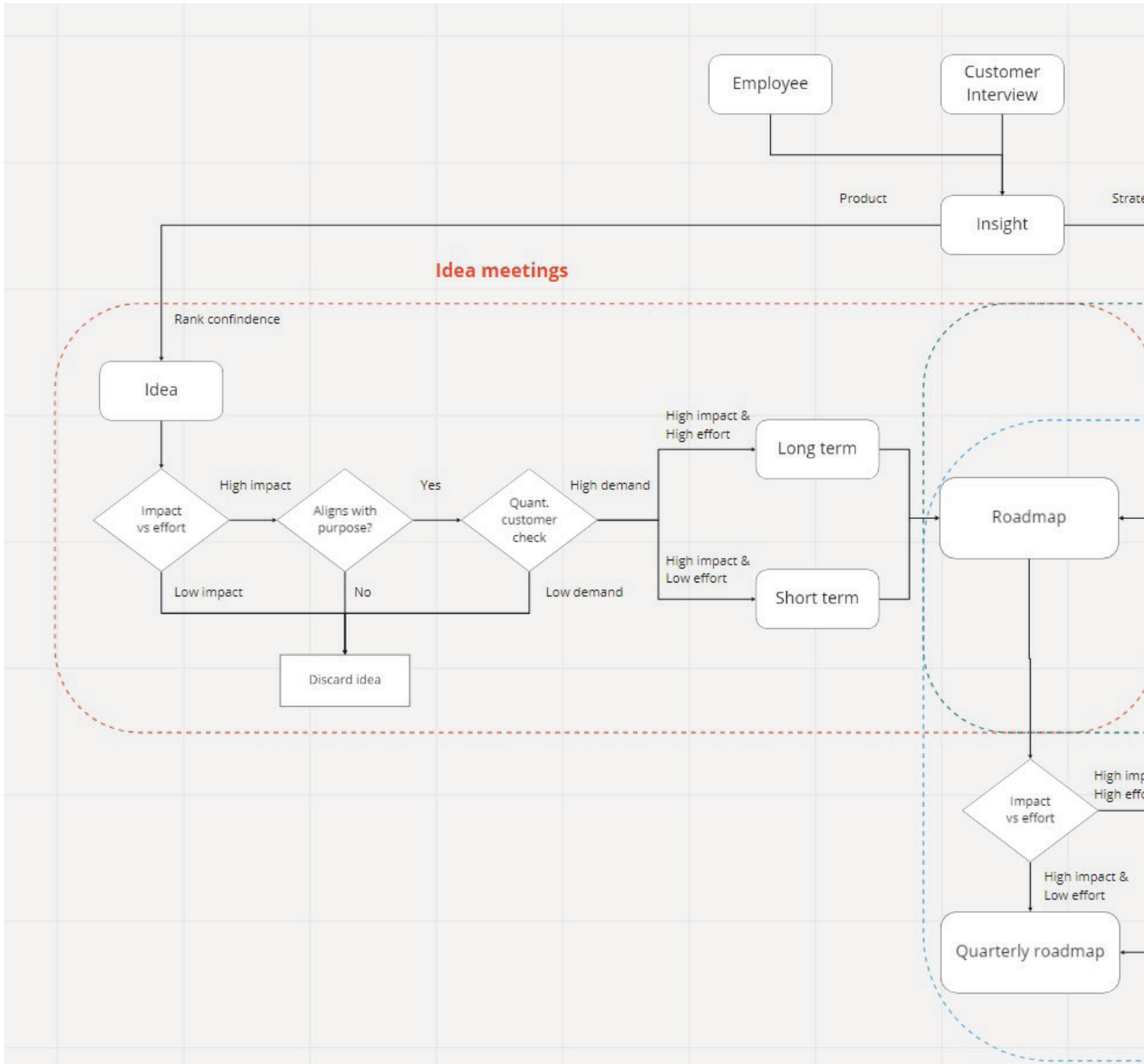
Figure 30. Flowchart of innovation process

...egy

Insight Backlog

Strategy
discussion

Planning meetings

Yes

Insights align
with purpose
& vision

No

More promising

Revise &
potentially
adjust vision

Less promising

Discard vision

...pact &
...ort

Discussion

Worth to
start
investing in?

No

Discard idea

Yes

109
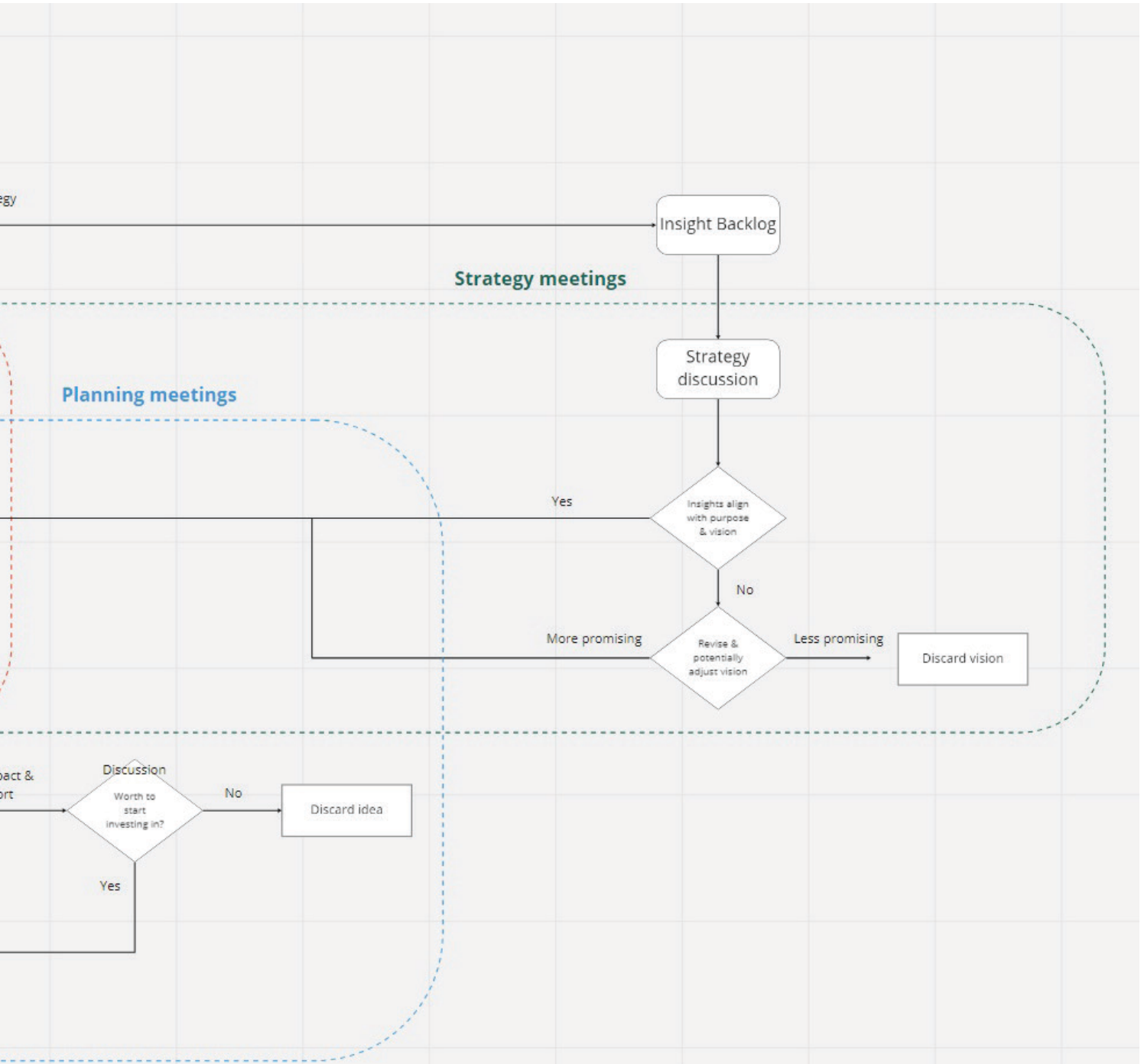
The process

From holistic view to application
The roadmap will be used for several different applications. A roadmap is a visualisation of the strategy. Strategy meetings, which will review the current strategy and look at new insights to adapt the strategy, will be crucial for the long term.
The roadmap will also have to be fed with new ideas as time goes along. The ideas will come from client, thus in this process a good selection process needs to be done in order for it to reach the roadmap.
The ideas that reach the roadmap have to be actually made, for this planning meetings will be held. In these meetings the planning for the coming three sprints will be done.
The process that revolves around these three meetings is presented on the previous page in a flowchart.

1. Strategy meetings
2. Idea meetings
3. Planning meetings

These meetings will be respectively held every:
1. 12 weeks
2. 8 weeks
3. 16 weeks

The idea meeting is held more often than the planning meeting, this is in order to make sense of the ideas that are generated and not lose the insights of where they came from. This way there is also enough time to potentially fill the roadmap with newly selected ideas, have them settle and discussed before planning the sprints.

Strategy meetings
Meetings concerning strategy and direction of the company need to be held once every 4 months, to look at the current state and if the direction the company is going still aligns with the vision. It also is important to look at new insights to see if this fits the current vision or it might be important to steer away from this path. These meetings still need to be tested with the company but the most important part is to plan the meetings to have regular discussion about the strategy.

1. Discuss insights & views
2. Do these views fit the purpose
3. Persist or Deviate on vision
4. Alter the roadmap

Idea meetings
The team has a tendency to overthink ideas from the start and to shoot them off and on the other hand implement ideas that they assume are good ideas. The process for these meetings helps to prevent this. Assumptions need to be proven by customer insights.
The important part of the meeting is getting people from all different teams (marketing, development, design, management) to get into a conversation and bring up new ideas. (Stompff, 2018). Innovation arises when multi disciplinary teams interact and build on each other. This meeting will make sure that happens.

1. Insight
2. Idea
3. Ranking confidence
4. Selection
5. Fits our purpose?
6. Roadmap

The ranking phase will make sure that the idea will not be shot down in the ideation phase, because later it can be filtered out. Ranking ideas on proof means that an idea that is only thought of as important by one employee can not reach the roadmap. This idea will have to be quantitatively checked by customers if the idea will bring them value. Different levels of evidence indicate different levels of confidence in ideas, see Figure 31.

After this ideas will be prioritised through comparing the impact vs the effort. This means how much will the idea impact the effect on the purpose of the company compared to the amount of effort it will cost to build this, see Figure 32. These frameworks both come from popular literature by Itamar Gilad, a former product manager at Microsoft and Google.
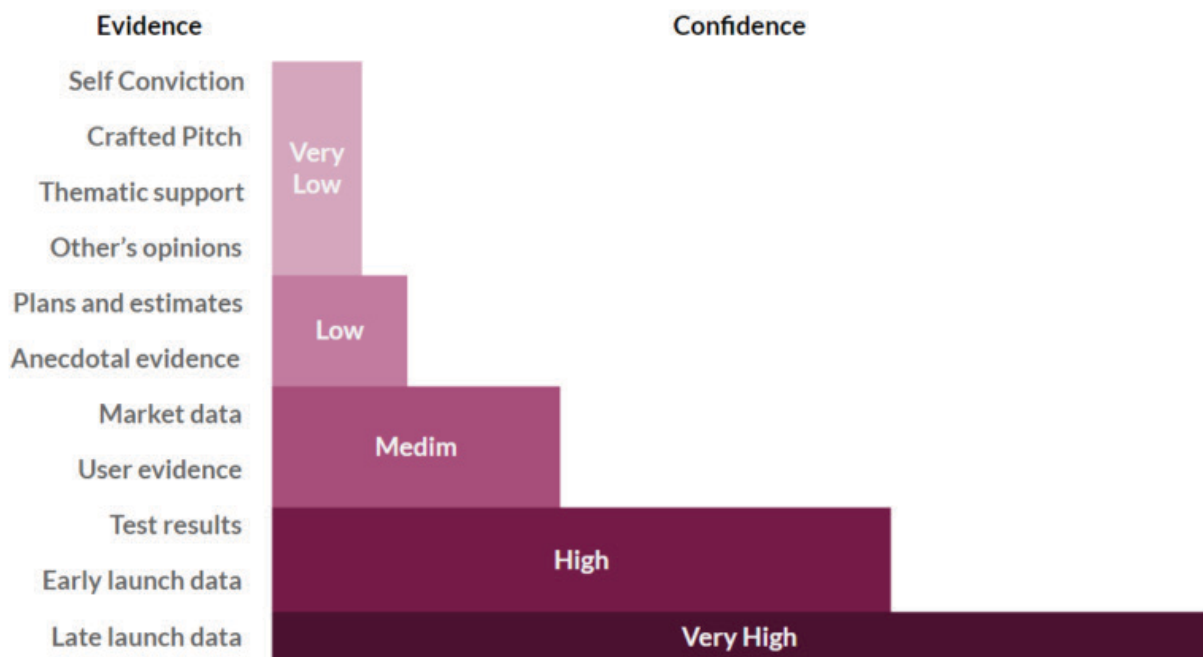

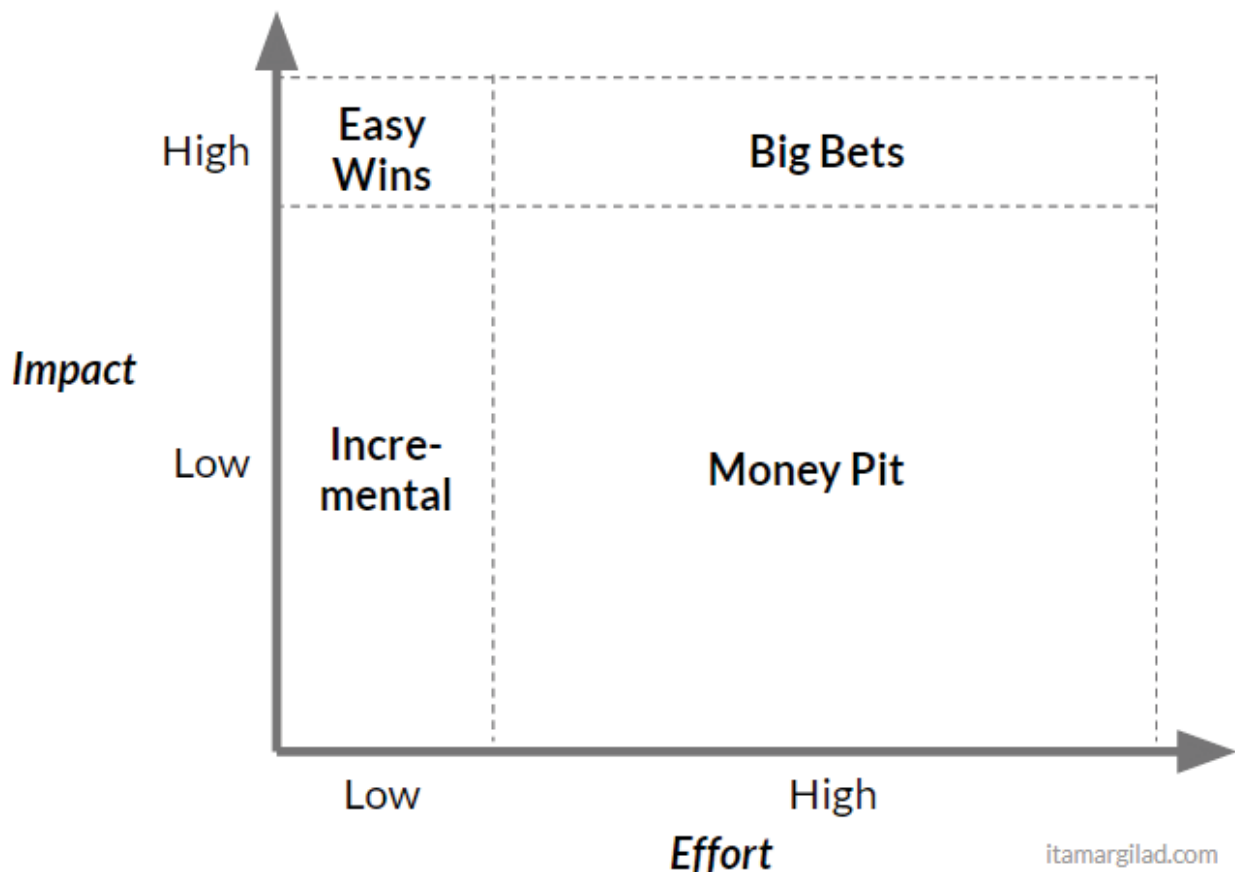Figure 31. Ranking ideas (Gilad, 2020)

Figure 32. Impact vs effort matrix (Gilad, 2017)

Planning meetings

Planning meetings are held to go from long term roadmap to short term roadmap. In this way it can be made sure the long term plan will be accounted for. Some ideas do not have a high impact but must be implemented in order for things to work. This is why the separation is made between nice to haves and must haves, bugs need to be fixed for the platform to function well. Also some base functionalities need to be in the platform for some customers to fit their legal programs. This distinction is made so that in creating the short term plan a well balanced roadmap can be made. This prioritisation will again happen on the impact vs effort matrix, see Figure 32.

The customer side and expoze.io side make sure that not only ideas that benefit the customer get developed, sometimes ideas that benefit the expoze.io team need to be implemented in order to create a more seamless operation, like automated e-mails for subscription renewal. This was something that was discovered by testing the process with the team.

1. look at roadmap for upcoming activities
2. rank priorities & discuss value
3. make sprint roadmap

Setting priorities
1. Nice to have
   Customer side
   expoze.io side
2. Must have
   Customer side
   expoze.io side

There needs to be a balance between the different factors. The sprints can alternate with nice to haves and must haves, or each sprints can have a bit of both. What needs to be prevented from happening is making sprint after sprint of nice to haves on the expoze.io side for example.

The integration of the roadmap with the innovation process will make sure the roadmap will be used. It also makes sure there is some cross pollination and discussion about the future of the product and company. Only ideas will be put on the roadmap that align with the purpose of the company and that will have a high impact. This all will lead to a product that is more customer centric and creates more value for both the customer and Alpha.One.

First testing
One of the challenges of roadmapping was creating alignment between the long term roadmap and short term planning. By testing an earlier iteration of the process it was found that going from the roadmap towards user stories for sprints was too big of a step. Therefore the planning meeting is now to create a more short term roadmap containing the higher level contents of three sprints. The short term roadmap will then be used to plan the contents of the individual sprints.

The strategy and idea meetings still have to be tested within the company in order to make sure the intended purpose of the process design will occur. The main purpose of these meetings is not that the process is followed word by word, but that a discussion about strategy and new ideas will actually take part. It is now up to the company to take up this process and start making it their own.

Conclusion
The new innovation process is a canvas that is the center of the whole innovation process presented on one canvas, making sure that the process takes little time and effort of the team. A big part of the new process is getting proof of customers making sure that there the shift towards a more human oriented product gets realized. The planned meetings ensure that there will be communication in the team realizing the long term goals within the immediate development. Strategy meetings will make sure that the strategy is kept up to date and that strategy is a structured and often performed conversation. The full roadmap integrated within the innovation process can be found in confidential appendix I.

Conclusion

Through immersion in the company and the context the following research questions were proposed, with the addition of innovation process questions.

What is the future vision for the predictive eye tracking platform expoze.io?
- What is the purpose of expoze.io?
- What is the latent customer value of expoze.io?
- What are market gaps / differentiating factors in the market?
- How to make sure the team interacts with the roadmap?
- How can the roadmap assist in adapting the product to be more Human?

How could the roadmap be best adopted into the operation of the expoze.io team? (process)
- How to build an innovation process that fits a small startup team?
  cost, time, effort efficient
- How to create a shift to a more human oriented mindset in this process?
- How to make sure that ideas selected fit the needs of the customers?

Research insights

The following research insights together with the customer interviews are the key to the strategy that is developed. The insights of this research fit well together with the customer value, these together create the core strategy as explained below.

Big tech is a big threat

Big tech companies already have a lot of data on advertising through their respective advertising platforms. This data could be used to create click through rate prediction in a bottom up approach. In this way companies could pre-test their advertisement on effectiveness before launching. This could be the biggest threat in the future for expoze.io.

Neuromarketing as USP

Expoze.io is only one of two products in the AI eye tracking market that is based on a neuromarketing company, this means that they have great knowledge on human behaviour. For them this could be the distinguishing factor of their competition, the knowledge about why commercials perform. Alpha.One is already investing in EEG prediction in order for the eye tracking platform to come to its full potential.

More insight wanted

From competitor analysis it was concluded that their customers have trouble interpreting the heatmap and take great value in the support of qualified consultants that the competitor offers.

In many of the competitors platforms metrics are used in order to give the customer easier analysis of the heatmap. Some of these scores like excitingness scores seemed not that valuable for customers but through customer interviews the value became clear, as will be explained next.

Confidence is key
Confidence was found as the more latent customer value that the platform brings. Eye tracking gives the customer raw data to do analysis, when before this was based on their own opinions. Metrics boost the confidence of the customer as they give independent insights that can be shown to clients or their boss. This all boosts the confidence that the people have in the advertisement they will publish, as it has been thoroughly tested. This is why bringing confidence to marketeers is the purpose of the company, improving this in any way will increase customer satisfaction and sales.

The purpose of the company:
Bringing confidence to marketeers

If the marketers gain more confidence from expoze.io the value of the product for the consumer will rise. In turn the product will generate more sales, as the customer sees more value in the platform. This is why bringing confidence to marketeers is the purpose of the company, improving this in any way will increase customer satisfaction and sales.

Vision

The vision that was chosen addresses some essential foundations in the company. Expoze.io is built by a neuromarketing company, this company has its knowledge mainly from neuroscience. In the vision the brains represent this aspect, as well as the proverbial meaning of bringing a smarter way to marketing. Marketing has always been a bit abstract, some marketing campaigns seem to work while others do not, the art of marketing refers to this trait in marketing. But expoze.io is trying to make it less of an art but to make it measurable and recreatable.

purpose of the company: **Bringing confidence to marketeers**
How will this purpose be achieved?
by **"Bringing the brains to the art of marketing"**

Core strategy
The core strategy that is reflected in the purpose and vision is creating deeper insights, insights which give the customer a better understanding about creating effective advertising. What follows from this deeper insight is confidence. This core strategy follows from different insights. expoze.io is only one of two companies in the market that is based on a neuromarketing company, which means they have the knowledge to create interesting insights. Secondly this gives the advantage of being able to capture data within their neuromarketing company to train AI models on. In the future these deeper insights could also differentiate them from potential big competitors such as Google and Facebook, as these companies can only create CTR insights with their data.

Innovation process

Through making the roadmap an online canvas it ensures that the strategy can be adapted. This online canvas also created an opportunity for the whole process to be centered in one place. The whole innovation process is performed on this canvas in order to keep it an easy process.

The process is based around three main meetings, Strategy, Idea and Planning meetings. These three meetings make sure that every part of the strategy will be performed, from holistic view to implementation. This way the people managing will structurally meet to communicate about the strategy, based on new insights. Ideas from every person of the company will be evaluated, these ideas will be checked on customer needs in order to create a better customer experience. Lead customers will also be invited to give input into the development of the product in order to help increase customer satisfaction. This will lead to a more human oriented mindset, instead of thinking of features the employees will think about what those features mean to the user. Lastly the planning meetings will make sure that there is a connection between the long term plans and the short term development, in these meetings the long term roadmap will be translated into quarterly sprint planning.

In the future, when the company grows, this process can be made bigger including dedicated customer researchers and roadmapping teams. The essence of the innovation strategy will stay the same, keep the strategy up to date and make sure it is executed.

RECOMMENDATIONS

The first recommendation to the expoze.io team is to do customer research into what the most useful metrics are that give more confidence to the marketers. A thumb stopping metric was already suggested by Ingrid, this metric would analyse the power the advertisement has to get people to stop scrolling and look at the advertisement. This could be especially great for analysing social media advertisements. Though, the concept of this metric should first be tested with consumers, "will this metric actually bring value to the customer?" is a question to be researched. Other metrics could also become apparent after doing customer research into this question. What metrics will give the marketeer more confidence in their advertising?

The company should also start looking into shifting the mindset towards the more human aspect, with more experts in that pillar. The company currently mainly has employees with technology and business background, but design background is lacking. Hiring someone that has expertise in interaction design or hiring an agency with this expertise could benefit the company in the short term.

When the company starts growing it is also important that the innovation process grows with the company. Teams will become responsible for certain parts of the roadmap and managers will be responsible for communicating the ideas within these teams with the other departments. This will make sure there will be cross-functional communication which will make sure the roadmap will be informed from all aspects of innovation.

It is also recommended to research which of the many neuroscientific methods in neuromarketing, mentioned in chapter Neuromarketing & eye tracking, would offer the most value if turned into an artificial intelligent prediction model. What would the synergy with current eye tracking prediction be and would the prediction model have potential to create interesting metrics that give deeper insight.

It is also advised to, once the company grows, to start analysing what the values of the company are and how those fit with that of the customer. The values of the company describe the company culture, how it operates and how it wants to be perceived. These are values that become more important the more employees work at the company and represent the company.

The solutions that are proposed, the roadmap and the innovation process, are both just starting points for the company. These need to co-evolve with the company and the environment. The roadmap will have to continue being discussed, bringing in the views and ideas of every employee and insights from customers. As said before, this will create emerging strategy which will be needed to stay ahead of the competition.
The main points for the roadmap to look into in the near future is to start looking at interesting metrics and analyses that could bring confidence to the marketeers. Building more confidence will increase the value the product has for the customer and in turn the amount of money that can be asked for the platform.

Implementing the roadmap and keeping the roadmap alive were mentioned as the key challenges in roadmapping, therefore the innovation process is designed. Therefore it is recommended that the company makes sure that this process happens by starting to schedule these meetings surrounding the topics. The process during the meetings will have to be continually evaluated and adapted in order for it to suit the team best.

Evaluation

For this project the research question was quite broad from the beginning. This helps in order to capture all the complexity and makes sure for an interesting outcome. However this also causes some difficulty in structuring this complexity. This could have been less difficult if I took a step back a bit earlier in the process and redefined the questions in order to create better oversight. On the other hand this could have manifested in less interesting outcomes, since the scope would have been smaller after that point. This is why I kept the scope quite broad.

The iterative process with the complexity of the broad research question made it difficult to create a logical linear thesis report, as most aspects connect together in different ways. This is something that I struggled with quite a bit, as some insights influence the research question, but you have to start with a research question. Therefore I recommend to other students to go for a more linear process for an academic thesis.

Through it being corona times I had no peers to talk to which made it hard for me to organize my thoughts, because normally I do this by talking to my project group. As this is an individual project this would not be the case, but therefore without this corona lockdown I would have had other graduation students to interact with. This would have been beneficial in order to see what would be good things to mention in the thesis. I was too deep into it with my thoughts which made it hard to see how things might not make sense for outsiders. These discussions often force you to take a step back in order for it to make sense for others. I would recommend other students doing their master thesis to do weekly check-ins with a student buddy, with extra emphasis during these corona times, someone who will understand your project from start to finish which you can have discussions with.

Next to that, having a design doing mindset has made me first go look within the company to determine what is going on. This is something I have done, but have not recorded well enough in order create a report that is fully based on quotes. One thing that I would recommend is to record every conversation you have with people in the company as everything mentioned could be evidence for something for example; mindset that exists in a company. This is something hard to prove if these conversations are not recorded. Some conversations could seem not that interesting, but once it is mentioned five times by different people, suddenly it is interesting, but now there is no way to prove it.

I have underestimated the amount of work one person can achieve in a half a year. I had created a full planning beforehand of my process, but in the process of design, new insights emerged that seemed interesting. I went with these insights, but in the mean time I was actually taking up more work. The quality of academic report would have been better if I had followed my initial process planning, but the insights and application for the company would have been less meaningful than it is currently.

I have focussed my effort too much on application for the company and this took away from the academic quality of the report. Although beforehand this is what I wanted to do, create something that is actually applicable and not something that is thrown into a filing cabinet.

Furthermore, the vision generation could have included the employees, but through the many insights, it made it hard to structure this complexity for the people following this workshop to understand the full complexity. Next to that brainstorming in a big group through video conference is something that does not work well. Therefore I decided to do this myself.

All together there were many ups, downs and unexpected turns during my thesis. I am glad to say that the roadmap I have made is usable for the company which is made possible by the innovation process. This because it is not only based on academically derived insights but also on thorough research in the company and with customers.

7 Sources

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8 Appendix

Appendix A

Interview guide
1. Tell me about how you looked for a product to solve your problem?
2. What goal would you like to achieve with this product?
     What is a measurement of success for you?
     Are you using multiple products to achieve this goal? which?
3. What kind of solutions did you try before, or not, and why?
     What do you think of the metrics used?
4. How did you research different options?
5. What made you think to start with eye tracking?
6. Who made the decision to buy the product?
7. Tell me how you use the product? (whole journey)
     In a team? show results to boss?
8. What pains do you have using the product?
     What causes these pains?
     How do they currently solve them?
9. What do you do with the outcome (heatmap)? (interpret yourself, show your boss, discuss in team?)
10. Do you have problems interpreting the heatmap?
      yes - then who do you contact?
      no - why not?

Appendix B
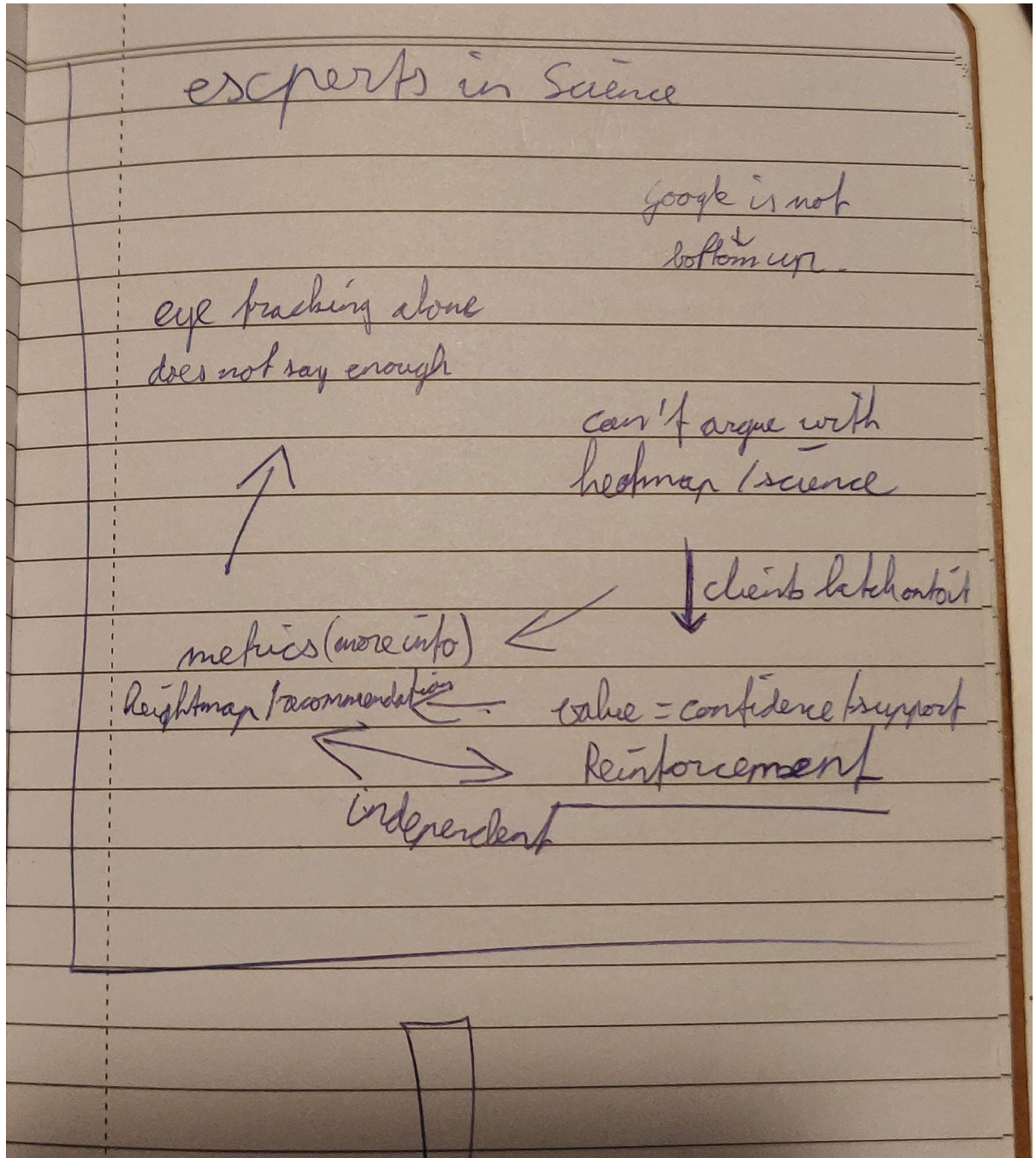
Help people understand their advertisement
improve

To be remembered as the company that brought
science to the art of marketing — Data XU

bring science to making advertisements
— the science of advertising.
giving confidence to our customer,
in massess (it's a growth service)
scalable ← under word

EEG fMRI, will create more insight, more
support in your work to show to boss/client.

make best creative NO you want to be sure
that you made the best
creative

art / craft
↑

- bring science to making advertisement
making it usable (accessible for everyone) to
give people more confidence when creating.

vision — bring science to art of advertising

mission statement ↗

= being the go to platform of bringing
science to advertisement

→ bringing scalable neuroscience to the art of marketing

                                    Facebook
expert in science   ←→   Google main threat
       ↓
  give explanation   not science
                                bottom up
                    ↳
            fast A/B test.
↓
↓

other competitors   video as USP
AI - not build
on real data ?

                                        independent
                                              ↗
   eye tracking alone   can't argue with
   does not say enough   say more ↗ heatmap / science
                            ↘   client latch on
                                              ↓
Value = confidence / support → metrics, more info helps
                              heatmap. Recommendation
                                    diagnost.

bringing brains to art of marketing

Top down

Eyequant

Alpha one
Expore

neuro

no data   ...data   research
gathering   ...   data

Google
Facebook

bottom up