

Data communication in 2025

**Designing data communication
for ActiZ Benchmark Zorg**

Lianne Duinkerken, September 2017



Master thesis

Design for Interaction

Industrial Design Engineering

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This is for the
thinkers.

The **influencers.** The challengers.

The ones who ask themselves
and others...

What impact
will you make
?

Preface

This graduation report is the last deliverable of my graduation project and the last step of the master degree program Design for Interaction at Delft University of Technology. The report will present the result of a seven month long journey, including research, interviews, discussions, designing, prototyping and user testing. In collaboration with Deloitte and their client ActiZ, I got the opportunity to show and implement the design process in a new area for me. Namely, data communication in 2025. I have been able to combine my passion for interaction design with the continuous exploration and learning of new things.

I would like to thank my supervisory team for facilitating my exploration and learning experience. Giulia and Maarten, thanks for your feedback, open discussions and support when needed. Maurice, thank you for your enthusiasm and believe in this project. You made sure that I felt valuable in the team. Thanks for the opportunity and warm welcome at Deloitte Analytics Information and Management.

I would also like to thank my colleagues of Deloitte. Thanks for your time, advice, discussions, just listening or drinking a cup of coffee. When I needed it, you always motivated me. Additionally, I would like to express my gratitude to the CEOs and CFO that participated in my research.

And last but not least, I would like to thank my family and friends for listening to my graduation struggles and stories. Special thanks to my mom and dad, you made it possible to enjoy my student life and to meet every challenge to further develop myself. More importantly, thank you for your endless love and trust. Elmer, thank you for your patience, support and love. You keep saying “It will be ok!” and cheering me up. Thanks to my friends, for the positive distraction and pub nights. I will promise to spend more time with you when I am graduated.

Enjoy reading!

Lianne Duinkerken

Executive summary

The project initiation originated from a challenge noticed by Deloitte. Deloitte noticed a mismatch between the degree and pace of innovation in data dashboards and the needs of the end-users of the dashboard. Deloitte creates digital dashboard to communicate all kind of data and information to their clients. They develop the dashboards along with the trends while the clients does not adopt the innovations and do not use all provided functions and features.

The aim of this project is to develop a way of data communication for 2025 that provides the users with insights and matches to their needs.

A project of Deloitte is selected as case study. Deloitte and ActiZ, branch organization for caregivers, provide as strategic benchmark to the elderly healthcare sector. The benchmark is presented on a digital platform, ActiZ Benchmark Zorg. Members of ActiZ use the strategic benchmark to gain insights of their performance relative to other members. (Deloitte, 2017a)

User perspective

The first step was to discover the current situation of data communication. A walkthrough, discussion with ActiZ and Deloitte and interviews with CEOs in the sector are the base of this first step. The walkthrough and discussions let to insights about the usability of the current dashboard. From the interviews the CEOs experience of the current situation is analyzed. The interviews focusing on the user experience and needs of the data communication. The following insights arrived from this analysis;

- The structure and amount of data is experienced as overwhelming.
- The navigation through the dashboard is experienced as frustrating.
- The data communication should be easy, quick and simple.
- CEOs want to puzzle and make comparisons with the data.
- Gained insight must be saved or shared with employees.

Future perspective

To get an image of data communication in 2025 a literature research is conducted. The research focuses on developments in an organization and in data communication. The developments in data communication can be divided in technology and

communication developments. The following insights arrived from this analysis;

- Data communication will be more natural, flexible and frequent.
- Data should be always and everywhere accessible.
- Technologies make it possible to interact with a chatbot.
- Artificial intelligence makes it possible to get notification about changes and risks and make predictions of the data.
- CEOs will make more data-driven decisions focusing on financial health, market development, and client- and employee satisfaction.

Ideation

Combining the gained insights from user and future perspective a design goal is formulated;

The design should stimulate and facilitate the CEOs to gain insight from the strategic benchmark and facilitate communication between the CEO, CFO and HR manager about benchmark findings to maintain the overview.

Two decisions are made during the design phase; the design will be designed for a touch screen and there will be no changes in the data of ActiZ Benchmark Zorg. The ideation is divided in three parts of the design; the content, the selection menu and the

communication menu. The content focuses on the structure and visualization of the data. The selection menu contains all options for making comparisons with the data. The communication menu consists of a helpdesk with chatbot, the option to share and save insights and a notification function for threats and changes in the data. Paper prototyping is used to make quick iterations and improve the design in an early state of development. Via user tests with CEOs a last iteration has taken place, with the insights the design is optimized to match the design goal.

Actiz Benchmark Zorg 2.0

ActiZ Benchmark Zorg 2.0 is a digital dashboard for CEOs in the elderly care, providing the strategic benchmark of ActiZ. The dashboard provides the CEO with the essentials of the data. Exploration is stimulated by the clear selection menu and drill down options of graphs. Features like a chatbot to answer questions in a few seconds and sharing/saving gained insights facilitates the CEO. ActiZ benchmark Zorg makes sure the CEO is able to create insights and to make data-driven decisions based on the strategic benchmark. The interaction with the design makes the CEO feel in control. By giving clear indication and options the CEO feels confident enough to explore the dashboard.

Reading guide

A visual overview of the project and structure of the report is given on the next page. The steps of each phase are visualized in circles, starting at the top and ending with the conclusions or outcome of the analysis. The chapters represent the phases of the project, a colour indication is used for the six chapters. A chapter starts with an introduction of the content and contains several sections. The key insights and conclusions will be presented in a coloured box or page as shown below. Appendices can be found in a separate document.

Key-insights and conclusions

Key-insights and conclusions will be described in coloured boxes or pages at the end of each chapter or section

Abbreviations and terms

ActiZ	Branch organization for caregivers
ActiZ Benchmark Zorg	Name of current dashboard designed by Deloitte
AI	Artificial intelligence
AR	Augmented reality
CEO	Chief executive officer
CFO	Chief financial officer
CQ	Customer quality index
HR manager	Human resource manager
NLP	Natural language processing
NPS	Net promoter score
UEQ	User experience questionnaire
VR	Virtual reality

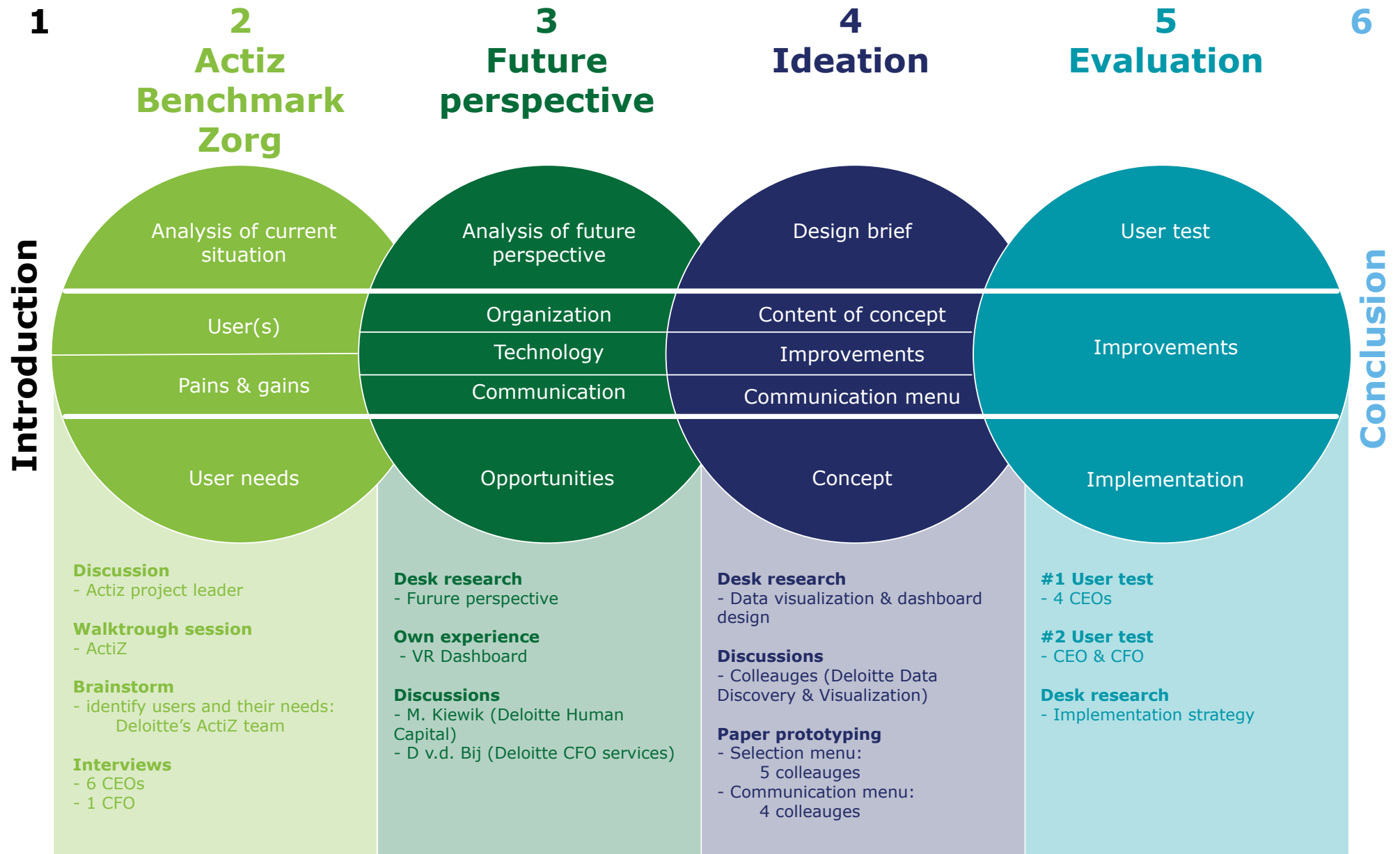


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Introduction

TU Delft's Industrial Design Engineering faculty signed a research and education partnership with Deloitte in 2015. Focus of the partnership is how design can support Deloitte's innovation practice, especially in relation to the use of big data in a smart and intelligent way. The main question of the partnership is: how to use design as an enabler in making big data intelligent and relevant in the guidance of making the right business decisions? (Afstudeerbank IO, 2015) This graduation project is part of the partnership and will focus on how end-users gain insights from the data provided by Deloitte combined with a future perspective.

The aim of the project is to design a concept which envisions a way of data communication in the future by focusing on the needs of end-users. By reading literature and talking with experts a vision of the future will be generated. To understand userneeds, interviews and a user-test will be conducted. By taking these aspects into account, a realistic vision of data communication in the future can be outlined.

First, the project will be introduced by providing background of Deloitte and one of their clients, Actiz. Additionally, the assignment will be explained by the problem definition and the goal. Finally, the approach of this project will be presented.

1.1 Background

Deloitte is one of the largest global professional services networks with more than 244.400 professionals in more than 150 countries and territories. Deloitte NL, the Dutch member firm, is one of the biggest professional service firms in the Netherlands. The professional service focusses on accountancy, tax advice, consultancy, risk advice and financial advisory services. (Deloitte, 2017c)

Deloitte Analytics & Information Management

Deloitte Analytics & Information Management is as service line part of Deloitte Consulting. The aim of Analytics & Information Management is to provide their clients insights by the use of data. The gained actionable information is communicated by clear visualizations on a digital platform in a manner that can be quickly examined and understood. Figure 1.1 is a schematic summary of the data analytic process. The information supports clients by insight-driven decision-making and drives competitive advantage. (Deloitte, 2017b)

Deloitte's client

One of Deloitte's clients is ActiZ, a branch organization for caregivers (440 members, 450.000 employees, 2 million clients). ActiZ is the connecting link between their members, politicians, stakeholders and society. (ActiZ, n.d.)

Deloitte and ActiZ are working together to provide a strategic benchmark in the elderly healthcare sector. This is presented on a digital dashboard, ActiZ Benchmark Zorg. The members of Actiz use the strategic benchmark to gain insights on their performance relative to other members. (Deloitte, 2017a) This way, the CEOs can make strategies and visions to increase the performance based on the gained insights.

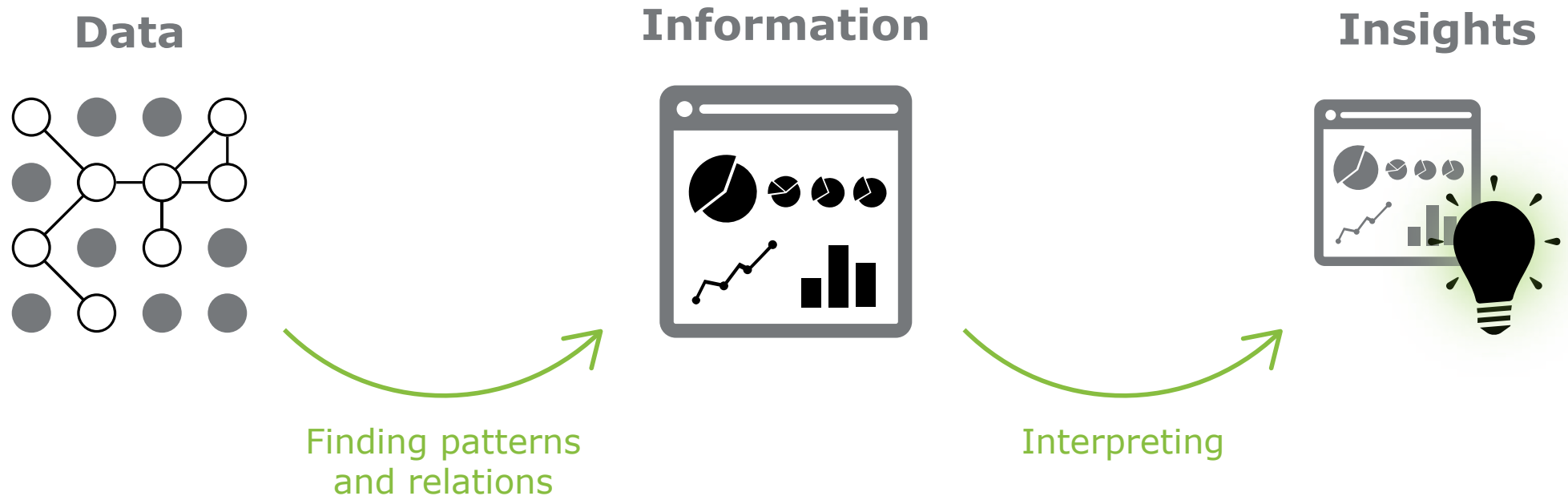


Figure 1.1:
Data analytic process

1.2 Assignment

Deloitte provides all kind of data and information to their clients. The data information is presented on a digital platform, a data dashboard. The CEOs use the data to get insights of their business and their competitors, so they can understand the market and make decisions based on facts. This will help the clients to have a successful business. The data communication is the premise of this assignment. It will focus on the interactions around the data.

The data dashboard of Deloitte develops along with trends. Deloitte noticed that clients do not optimally use all functions and features of the dashboard. There is a mismatch between the degree and pace of innovation in the data dashboard and the needs of the end-users of the dashboard (Deloitte's clients).

Goal

For the successful development of a future image of data communication, user needs, developments in data communication, trends in working environment and leadership should all be taken into account. By doing so, a realistic vision of data communication in the future can be outlined.

This project's aim is to develop a way of data communication that provides the users, CEOs of the elderly care, insights from the strategic benchmark so it matches their needs and will fit the future scenario. See Figure 1.2.

Deloitte.

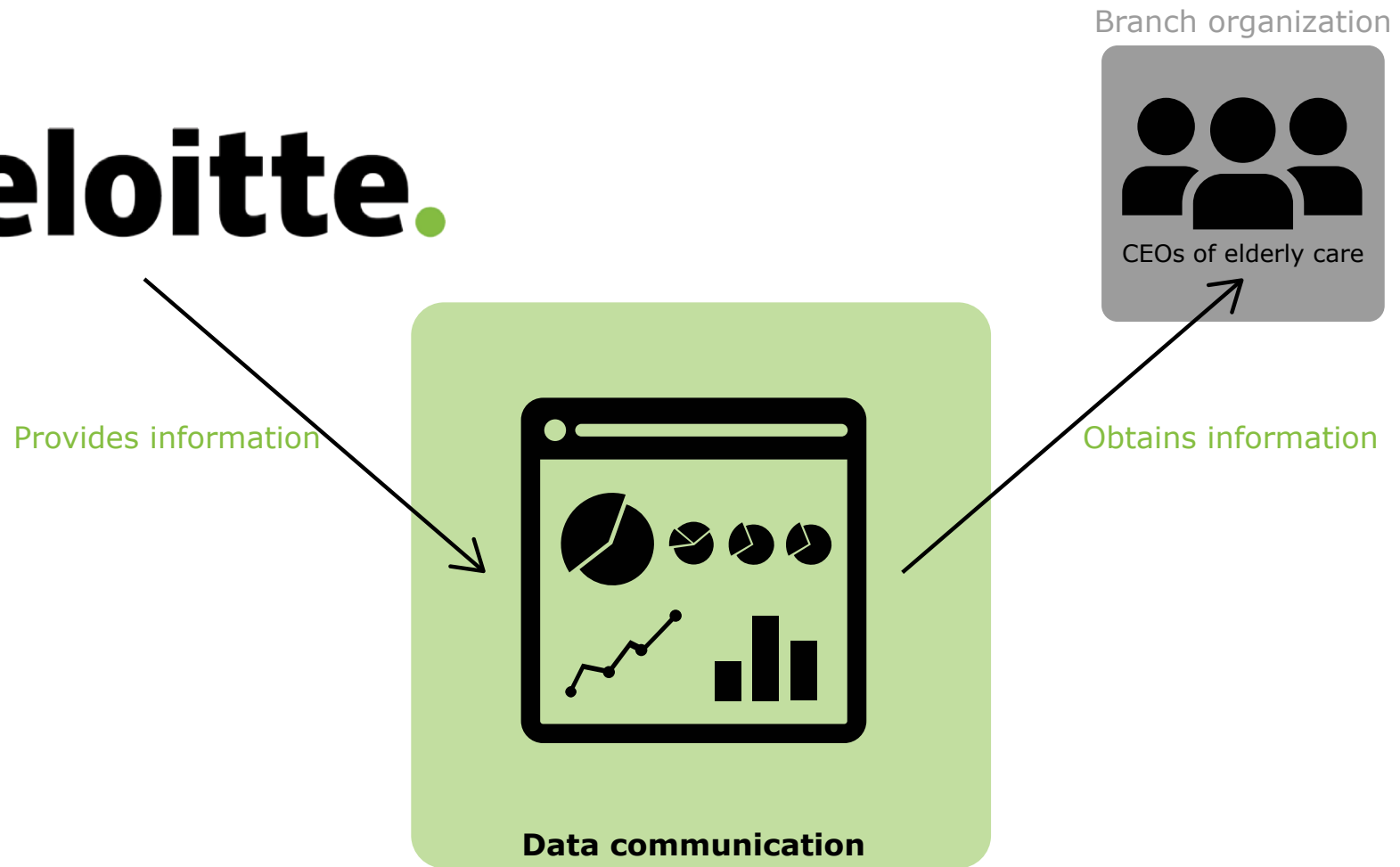
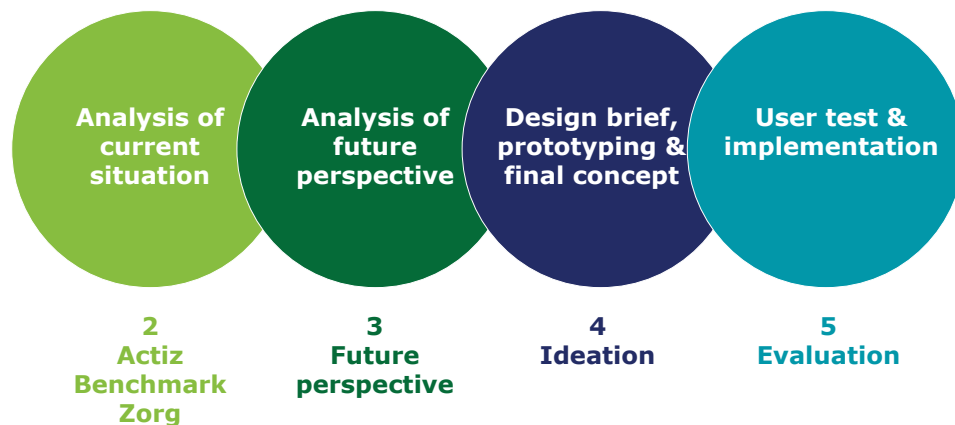


Figure 1.2:
Context of the assignment

1.3 Approach

The approach is visualized in Figure 1.3. First, the current situation will be analyzed to get an view of the project's context. Then, future opportunities will be analyzed by literature and desktop research. The opportunities are used during the ideation phase. In which the design goal will be formulated. During the ideation iterations will be made by prototyping and testing. After creating a final concept, it will be evaluated with a user test. Also, an implementation strategy will be proposed so the users will be guided by adopting the new way of data communication. The last step is an evaluation of the project and recommendations for Deloitte.



Design approach

The design approach, conceptualizing, is a chaotic process. It exists of exploring different areas, trying out several ideas and deciding what works or not. (Newman, 2010) The design squiggle by Damien Newman of the Central Offices of Design represents this process in Figure 1.4. The design squiggle supports the design approach of this project, starting with lots of uncertainties. Different parts will be explored, which sometimes are a dead-end. After exploring the context, by own experience, talking to experts, interviewing the user and desktop research, pieces start to fall into place. When the line becomes less curly, the designing of concepts starts based on the earlier insights. By several iterations of prototyping the final concept will be created, so the line becomes less curly. After refining and clarifying the concept by a user test, the line follows a straight path. The design process is now ending, so the last step is the implementation strategy of the new design.

Figure 1.3:
General approach of project

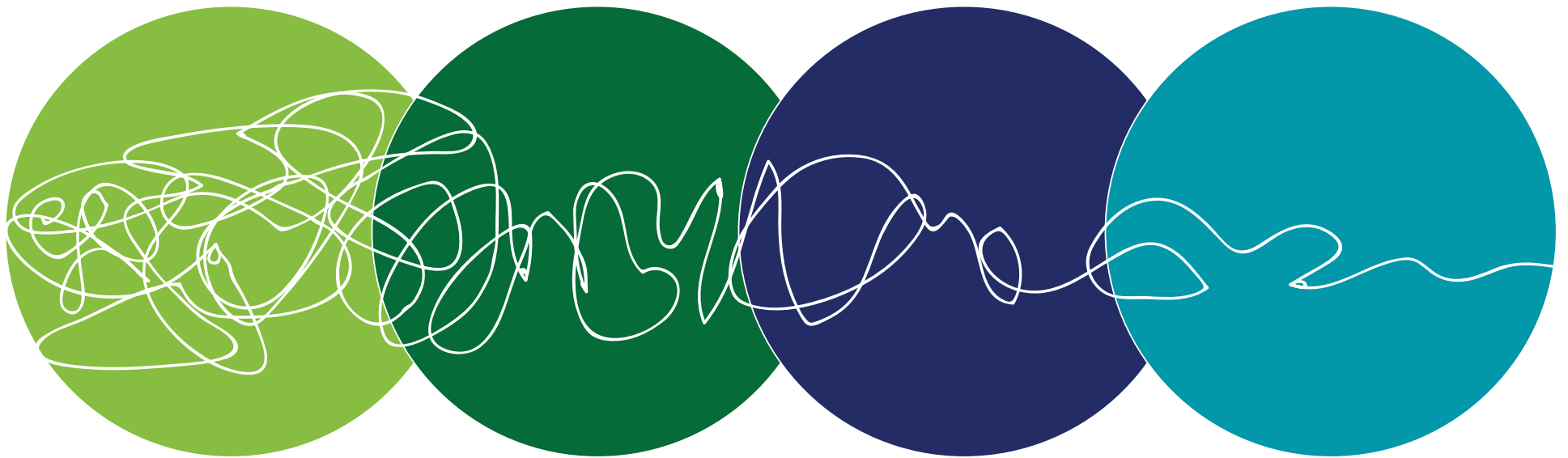


Figure 1.4:
Design squiggle (Newman, 2010)

2 ActiZ Benchmark Zorg



In this chapter, the dashboard of ActiZ Benchmark Zorg will first be described with supporting images. From this walkthrough, insights about the usability are obtained. Users of the dashboard will also be described because the dashboard is used by multiple people in an organization. All the users of the dashboard will be identified with their personal goals and tasks. In consult with Deloitte, the focus group of this project will be the CEO. Interviews with the CEOs will give insights in their needs for data communication. To conclude, all insights of the current situation and user needs are listed.

2.1 Dashboard

The dashboard is developed to provide a strategic benchmark in the elderly healthcare sector. The dashboard will be introduced with a description and images of several pages of the dashboard. First, the login process will be described followed by the hierarchy of the dashboard. Then an explanation of several screenshots will be given concluded by a list of insights for a more user friendly dashboard. The insights are based on own experience from using the dashboard and from a walkthrough together with the project officer of ActiZ Benchmark Zorg.

Login

The login process will be described and supported by images of the process. To get access to the dashboard, the user needs to login. The login starts at the Actiz Benchmark website, actizbz.nl. The user is asked to enter his/her email address and corresponding password. See Figure 2.1. After login, the user opens the benchmark dashboard (rapportage), where the user is again asked to login. Username, self-created password and domain need to be entered. The domain is given by Deloitte, [deloitte-e](https://deloitte-e.nl). See Figure

2.2. After clicking “logon” the user gets a message with a code via mail/sms and is asked to enter the code to confirm their identity. All steps are summarized below.

Summary of the login process

1. Go to actizbz.nl
2. Login with Actiz-account
 - 2.1. Enter email and password
3. Go to Rapportage
4. Login with Deloitte-account
 - 4.1. Enter username, password and domain
5. Security check
 - 5.1. Open mail/sms
 - 5.2. Enter onetime password received per mail/sms

Figure 2.1:
Login-page of actizbz.nl

enter email and
password

click  to logon

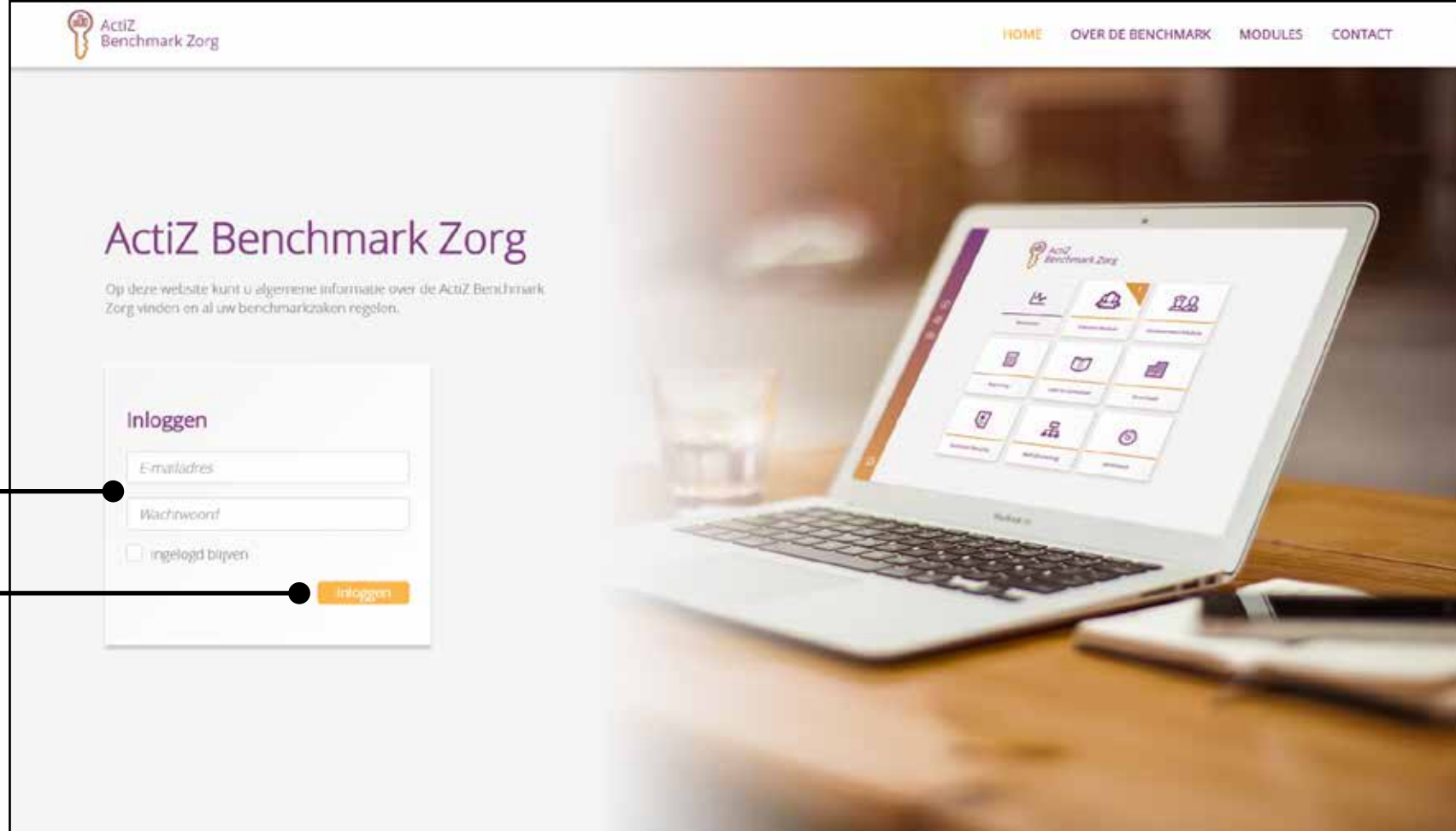


Figure 2.2:
Login-page of dashboard

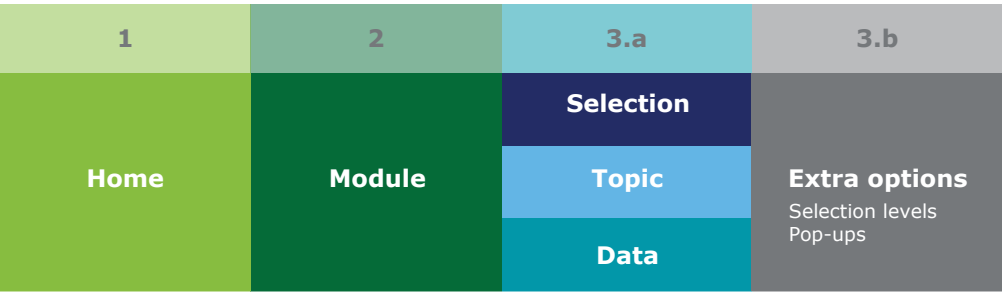
enter username,
password and
domain

click  to logon



Hierarchy

The dashboard opens with a homepage from where access is given to multiple modules, see Figure 2.4. In each of the modules a couple of topics are clustered on top. The option to make a selection is located on the left and the data, information and insights are always presented in a fixed area in the middle of the screen. See Figure 2.5. The data is presented in different ways of data communication; graphs, colours and numbers. Pop-ups with written explanation inform the user about the shown data. In this fixed area new selection options are also given to specify the topic or to choose the axes of a graph. In a global way the hierarchy exists of three layers, described in Figure 2.3.



Options to make selections

There are two ways to make a selection of the presented information, which will be described and supported by screenshots. A selection can be made over a module, see selection area in Figure 2.5. This selection can be saved by the bookmark function. See Figure 2.6. A selection can also be made of the data in each topic and graph by specifying the topic or by choosing the axes of a graph. The options for the axes are shown by a dropdown menu. See Figure 2.7.

Figure 2.3:
3 layers of hierarchy

Figure 2.4:
Homepage

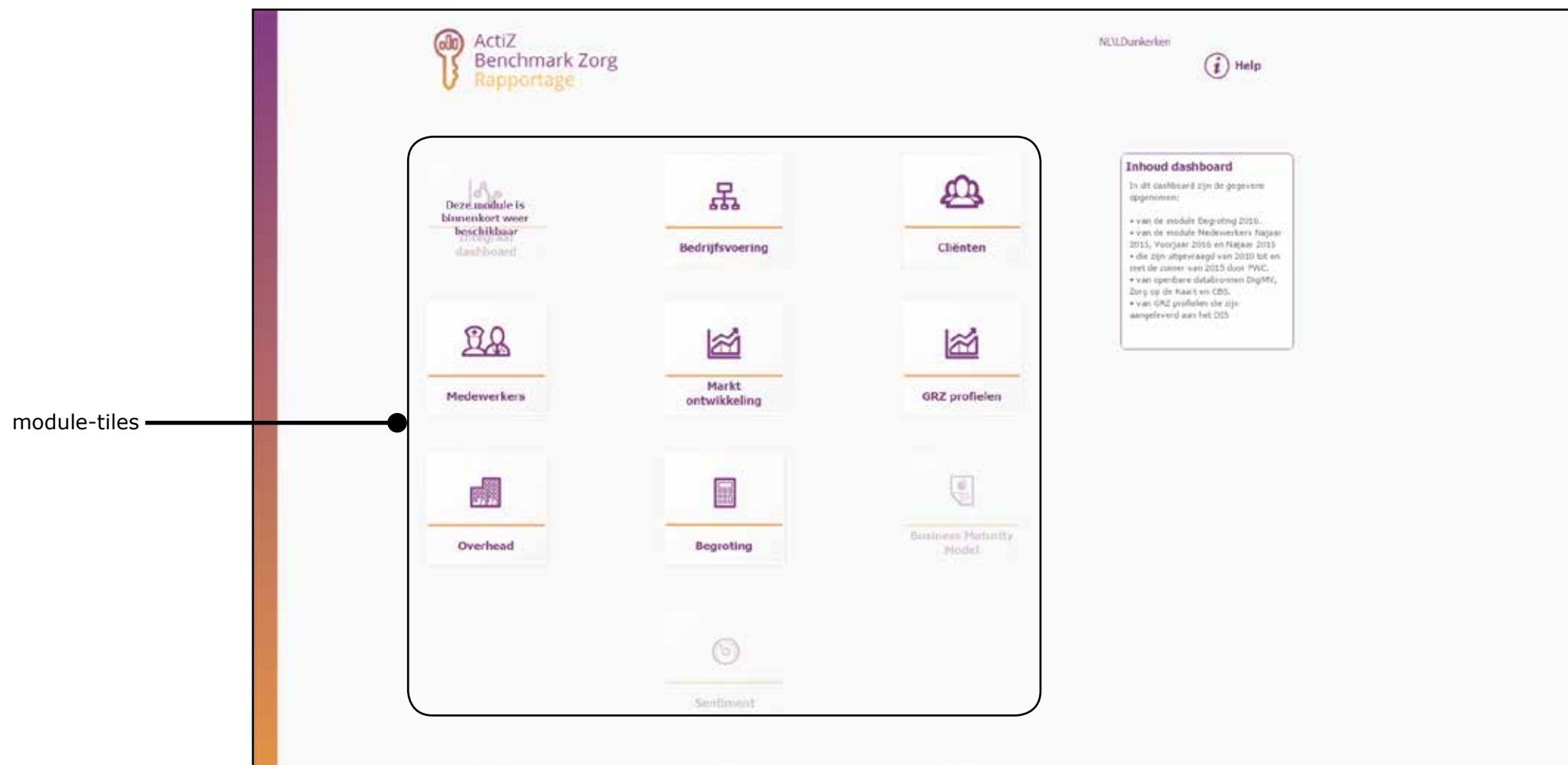


Figure 2.5:
Module page

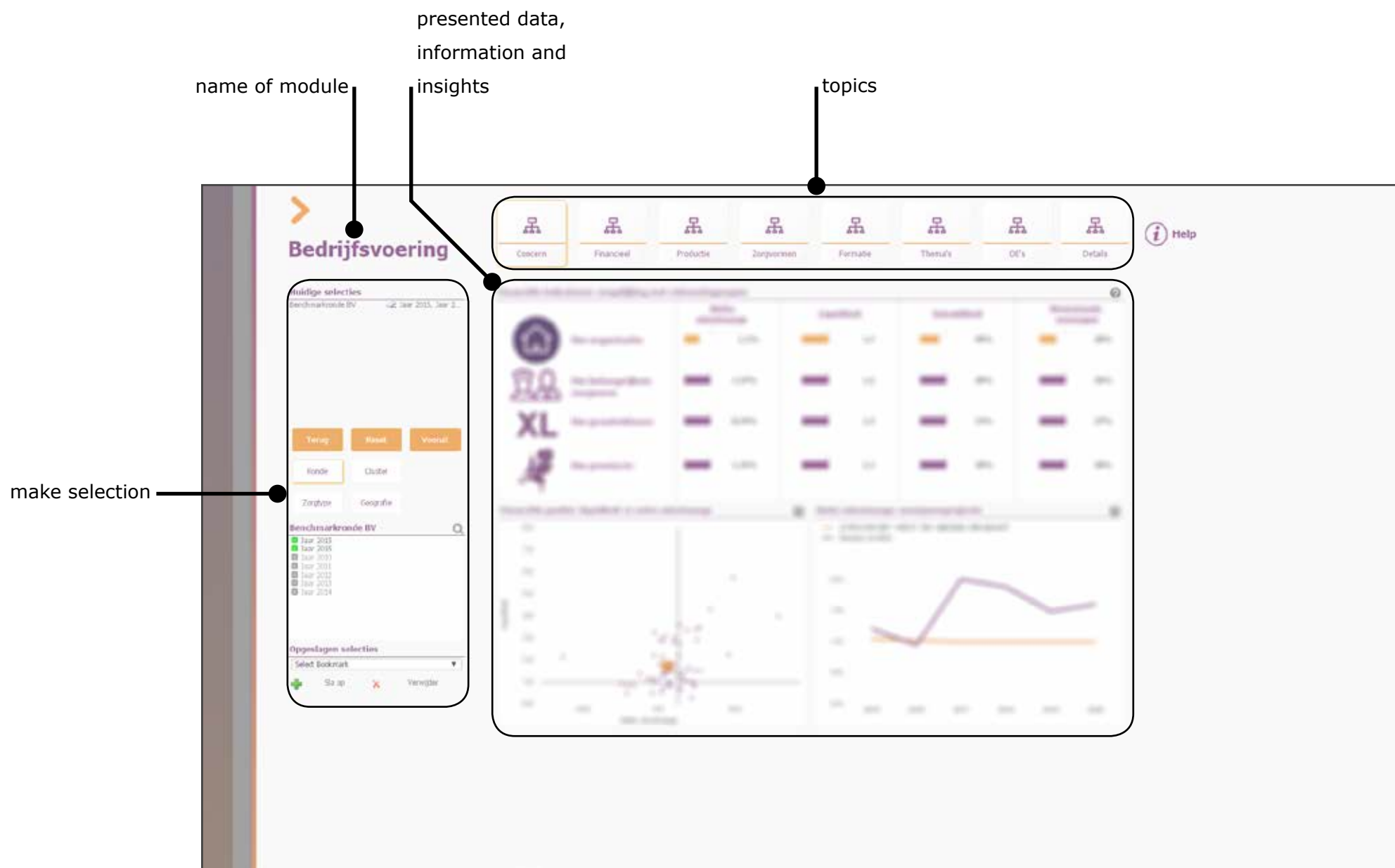


Figure 2.6:

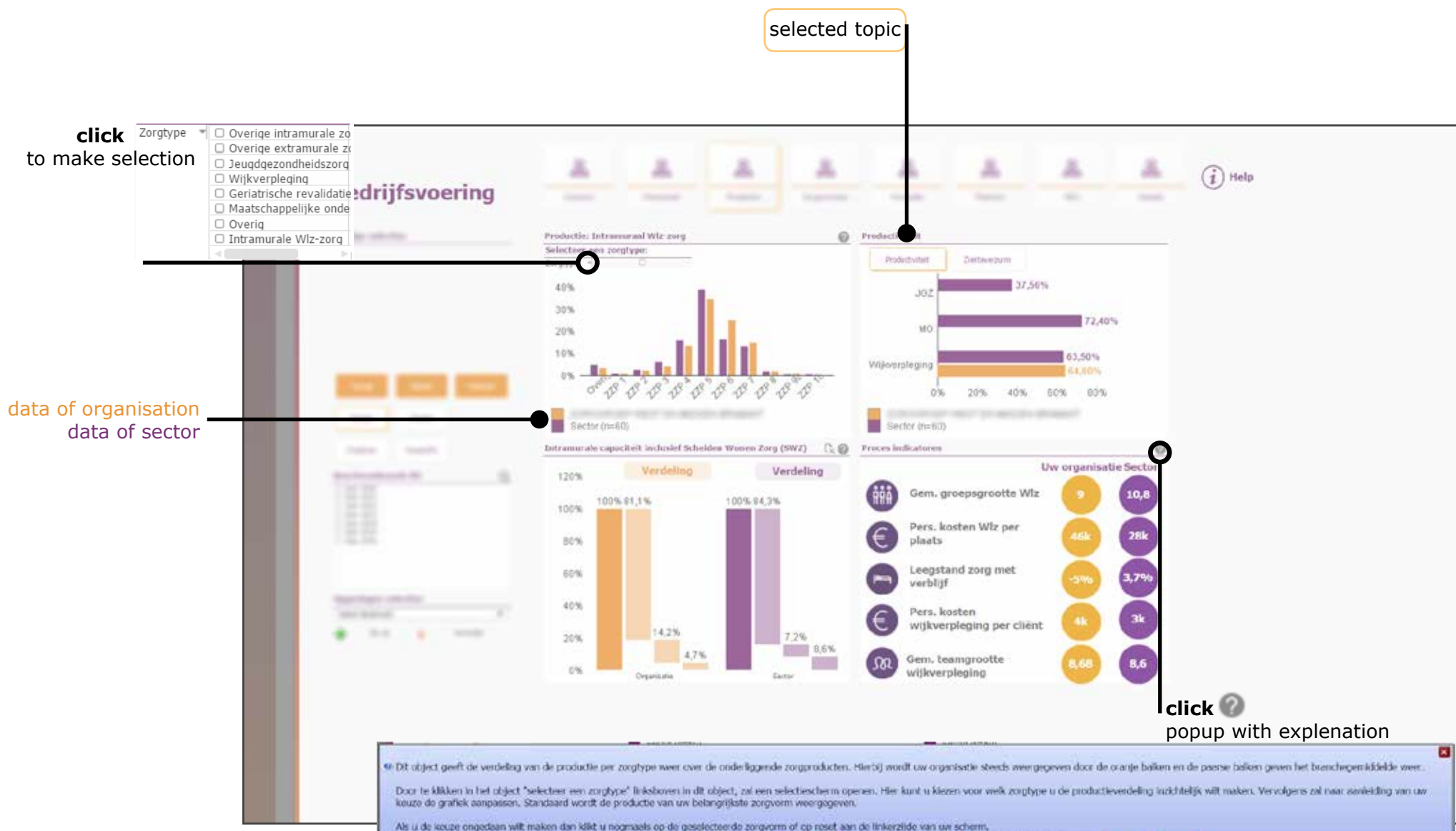
Options to make selections

The screenshot shows the 'Bedrijfsvoering' (Business Management) interface. The main navigation bar includes tabs for 'Centraal', 'Financieel', 'Productie', 'Zorgvormen', 'Functie', 'Thema's', 'O's', and 'Details'. A 'Help' button is located in the top right corner. The central area displays a table of data with columns for 'Organisatie', 'Jaar', 'Ronde', 'Quintiel', 'Zorgtype', and 'Geografie'. Below the table, there are two charts: a scatter plot on the left and a line graph on the right. The interface also features a 'Huidige selecties' (Current selections) section on the left, which includes a 'Terug' (Back) button, a 'Reset' button, and a 'Voort' (Forward) button. Below these buttons, there are filters for 'Ronde' and 'Quintiel'. A 'Zoeken' (Search) button is also present. The 'Huidige selecties' section includes a list of 'Opgeslagen selecties' (Saved selections) with a 'Select bookmark' button and a 'Verwijder' (Remove) button. A 'Naar helpdesk' button is located in the bottom right corner.

Annotations:

- click** > go to home: Points to the home icon in the top left corner.
- selected topic**: Points to the 'Centraal' tab in the main navigation bar.
- click Help**: Points to the 'Help' button in the top right corner.
- click** [mouse icon]: to delete selection: Points to the 'Verwijder' button in the 'Opgeslagen selecties' section.
- shows selection**: Points to the 'Huidige selecties' section.
- selection navigation back, reset and forward**: Points to the 'Terug', 'Reset', and 'Voort' buttons.
- type of selection**: Points to the 'Ronde' and 'Quintiel' filters.
- click** [magnifying glass icon]: to find terms: Points to the 'Zoeken' button.
- make selection press ctrl to select multiple**: Points to the 'Select bookmark' button.
- saved selections scroll through saved ones + to save and X to delete**: Points to the 'Opgeslagen selecties' section.

Figure 2.7:
Options to make selections



2.2 Users of the dashboard

ActiZ Benchmark Zorg is used by different kinds of users. All the users have different kinds of needs. From conversations with the project leader of ActiZ and the team from Deloitte an overview of all different kinds of users with their needs is created. Not only the relation between the user and the dashboard is important, but also the relations between the users. The relation between the users will be explained by the flow of information.

CEO

The chief executive officer (CEO) focuses on the organization's strategy and vision. The CEO is looking into the future of the organization and the upcoming developments and threats. The benchmark dashboard gives them the option to compare their organization to other organizations. The goal is to improve the position of the organization by comparing themselves to other organizations. Due to a lack of time the CEO is not using the dashboard frequently or not using it at all. The CEO has no time to discover and puzzle with the data by him/herself.

CFO

The chief financial officer (CFO) focuses on the financial risks of the organization. The CFO is interested in the position of the organization based on the numbers and data. The benchmark dashboard gives him/her the option to dive into the data and details, so the threats and obstacles can be found and tackled by a new strategy. The CFO likes to puzzle with the data and is using the information frequently.

HR manager

The human resource manager focuses on the satisfaction of employees. He/she is interested in the outcome of the satisfaction score and the performance in comparison with internal teams and other organizations. The HR manager is not always used to work with numbers and feels more comfortable with qualitative information. In the current situation the presented data on the benchmark dashboard often feel overwhelming. The insights will be used to create strategies and visions to improve the quality for the employees and the organization.

	Task	Goal	Character
 CEO	Creating the strategy and vision of an organization	Find out the position of organization compared to other organizations to improve strategy and vision	Lack of time 
 CFO	Maintain financial health of organization	Financial data to improve the financial state of the organisation	Puzzling with data 
 HR manager	Track the developments of employees	Compare employees satisfaction within the organization and to other organizations to improve quality	Qualitative data 
 Line manager	Creating the strategy and vision of a specific line	Position of specific line compared to other lines and to the strategy and vision of organization	Lack of time 
 Employees	Rate their job and organization satisfaction		

Line manager

The line manager focuses on the performance of his/her line. He/she also wants to know if the line's strategy and vision fits the organization's strategy and overall vision. The line manager wants to improve the performance of the team. Via the benchmark it is possible to learn from others by finding the cause of the differences. In the current situation, managers are not using the dashboard by themselves. They get the benchmark report created by the HR manager and CFO.

Employees

The employees are asked to conduct a survey. The outcomes are used to measure their satisfaction of the job and organization. The information is used by the HR-manager and CEO to improve the quality and experience for employee and client. The employees are only asked to give their input to the benchmark dashboard and have no access to the dashboard.

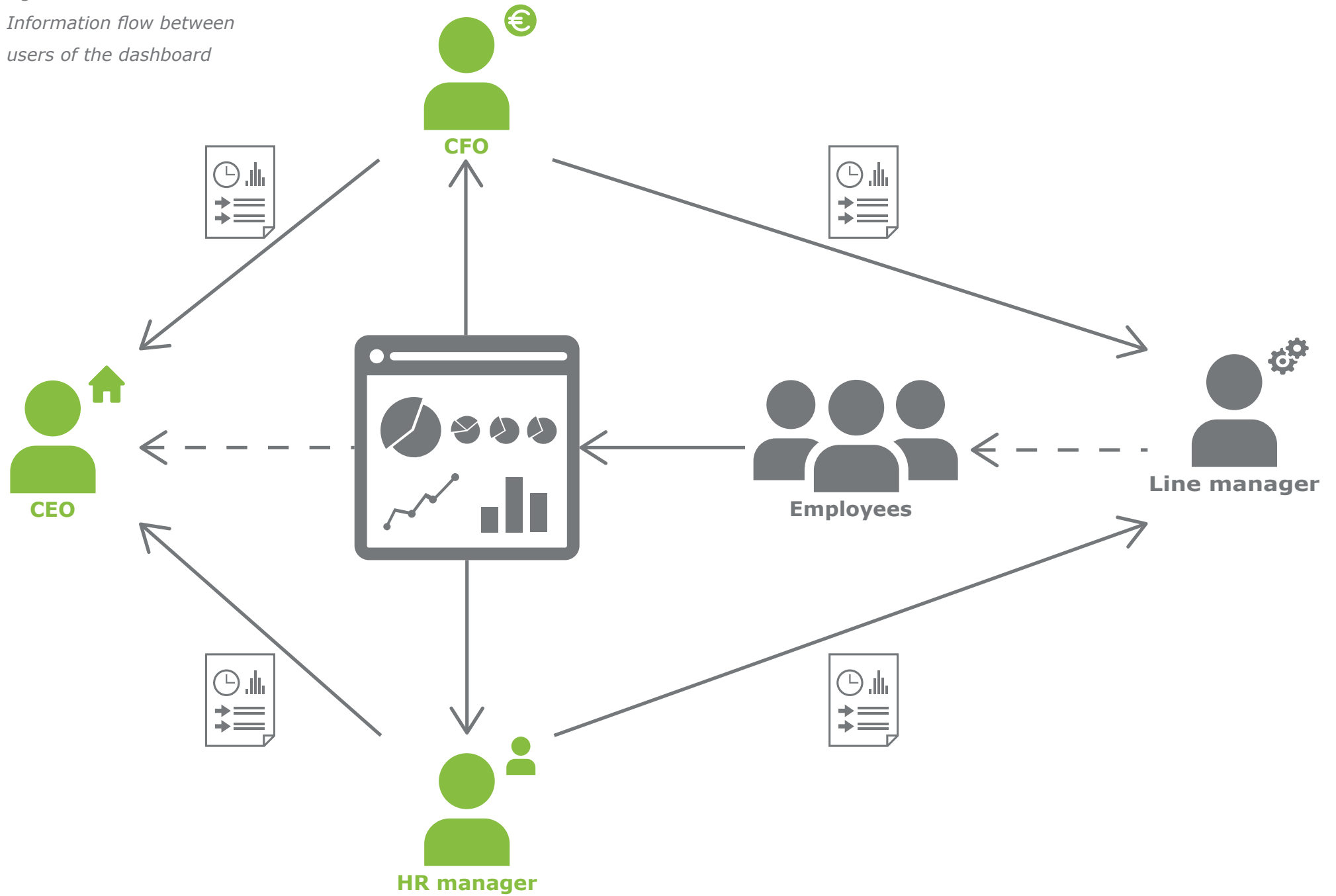
Information flow

In Figure 2.8 the users of the dashboard are captured, but it is missing the flow of information from and to the dashboard. The main information streams will be described and visualized in Figure 2.9.

In the current situation the CFO and HR manager obtain information from the dashboard. The CEO gets the information and insights from the dashboard via reports compiled by the CFO and HR manager. The reports are mostly in the form of a (online) document/presentation. The line manager has no access to the dashboard, information is sent via reports/presentations on his request. When the managers think it is necessary, the information goes to the employees.

The information streams outside the dashboard, via reports/presentations, makes the dashboard inefficient. The CFO and HR-manager need to translate the gained information into insights and present them in another format. This takes up time and the overview is quickly lost by all different documents.

Figure 2.9:
Information flow between
users of the dashboard



The dashboard is used by different users in different organizational hierarchy levels. Interesting is the fact that the CEOs are not frequently using the dashboard, while the dashboard is built to give management insights by showing the organization's performance relative to other organizations. The insights should support strategy and visions.

In consultation with Deloitte it is decided to focus on the wishes and needs of the CEO while designing. According to Deloitte, CEOs will take more and more data driven decisions by themselves. (Fransen, 2017 February) A dashboard designed for the CEO is more efficient, because all the reports created by intermediaries are not necessary anymore. However, in the future the CEO still discusses or gives orders to the CFO and HR manager. It is desirable when the communication is integrated in the dashboard. See Figure 2.10.

It is important to know the needs of the CEOs, as the current dashboard apparently do not fulfill them. What does the CEO need to make data driven decisions? And how can a dashboard fulfill the CEO's needs?

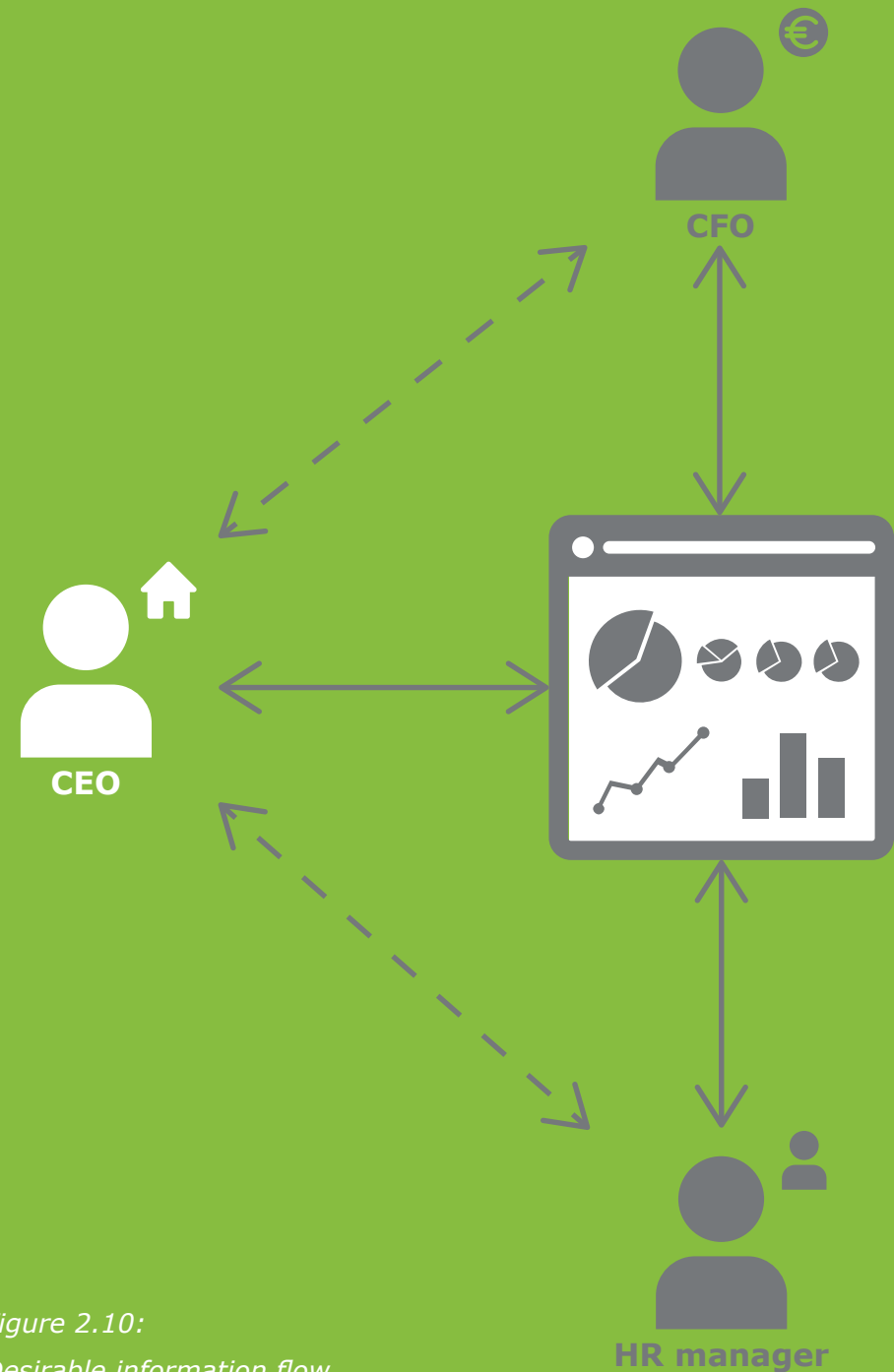


Figure 2.10:
Desirable information flow

2.3 Interviewing CEOs of elderly care organizations

Interviews with CEOs will answer the questions: What does the CEO need to make data driven decisions? And how can a dashboard fulfill the CEO's needs? The interviews give information of the CEOs point of view relative to the benchmark dashboard. The goal of the interviews is to understand the current situation and provide insights in the user needs of data communication. This is translated into research questions, which differentiate the use and experience in the current situation.

Research questions

1. How do the CEOs experience the dashboard?
2. What would improve the usability of the dashboard according to the user? Why?
 - 2.1. What would enrich the use on interaction level?
 - 2.2. What would the user like to change in terms of content?

Method

The users are familiar with the current situation of data communication; the dashboard providing the strategic benchmark. To answer the research questions interviews are conducted with six CEOs and one CFO of elderly care. (n=7, Male/Female= 3/4) The organizations are spread over the Netherlands, to exclude regional differences. The interview will be semi-structured, with the questions depending on the answers given. (Van Boeijen et al, 2013) The protocol can be found in Appendix A: Protocol of interviews (in Dutch).

Insights

The interviews are separately summarized and concluded with interesting insights, see Appendix B. Insights are created by clustering. The individual insights are presented on personal cards, see Appendix C.



Structure

The dashboard is experienced as an overload of information, by five out of seven participants. This is caused by all the given options and the hierarchy of the dashboard. The CEOs mentioned solutions like; modules per team, reducing the information or a new way of navigation through the dashboard. Mentioned is also the option to zoom in and zoom out in the data; national, regional, organization, location and team.



Satisfaction

One out of seven participants was dissatisfied, three out of seven were not dissatisfied but not very satisfied and three out of seven were satisfied about the benchmark dashboard. Overall the participants are satisfied by the benchmark dashboard. They believe in benchmarking and the online-dashboard. Important for them is accessibility on multiple devices, such as computers, tablets and smart phones. A point of frustration is the login process, experienced as diffusing.



Essentials

Five out of seven participants mentioned that it is hard to gain insight from the dashboard. It is desirable that the insights are clear at a glance. This can be reached by only showing the most essential insights. Still, the background information should be available when needed.



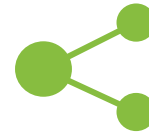
Dynamic

The access of the dashboard should be improved, the login process is time consuming and should be device independent. It is desirable that the dashboard is more intuitive and quicker, to increase usability. Examples like an app are mentioned as a solution. The dynamic interaction is also about the way of interaction with the information; the CEOs want to puzzle with the data in an attractive and simple way.



Sharing results externally

The CEOs believe in more openness between organizations. They talk about the option to share and discuss interesting insights with other organizations. (4/7) In the way they describe it, like a platform as Facebook. The shared information should be available for a group selected by the CEO.



Sharing results intern

The CEOs think it is important to be transparent and they want to discuss the results with all levels of employees. It is desirable to share the insights and results with the employees, taking into account the different levels in an organization. That means that the shared insights and results should be understandable for all employees. The CEOs mentioned communications systems like traffic-lights or smileys.



Trend analysis

The CEOs want to know the future perspective, next to the gained insights of the past. (4/7) With the future insights, they want to see if it matches their perspectives and if they need to react.

2.4 Conclusion

A recap of the insights gained from previous analysis will be given. The new design will be created for the CEOs of elderly care organizations. The pains and gains of the current dashboard, the needs of the CEO on content and interaction level and possible solutions are listed below. The following page shows the gains and pains of the current dashboard, also the user needs and possible solutions for the new design are listed.

Current situation

Overall the CEOs are satisfied about the dashboard, the content of it is important. The online tool gives them the option to use multiple devices. The dashboard also provides the option to puzzle and make own comparisons, which is important for the CEOs. A pain is the structure of the dashboard. It is experienced as frustrating and overwhelming.

Needs of the CEOs

The way of interacting and navigating through the dashboard is not experienced as user-friendly. The usability will be improved when the dashboard is more dynamic, easier, quicker and simplified. CEOs want to share and save gained insights from the dashboard. This makes it possible to communicate the insights for publications or with their employees, most likely the CFO and HR manager.

Ideas

The login process is a hassle. The process can be streamlined by reducing actions and using consistent terms. This solution reduces the threshold to use the dashboard. The usability will also be enriched by structuring the information. Avoid an overload of information and deleting all unnecessary fuss. Clear indications of options and actions will guide the user. This will reduce the overwhelming and frustrating feeling.



Gains

- Online tool for multiple devices
- Making comparisons & puzzling with data



Pains

- Frustrating
- Overwhelming



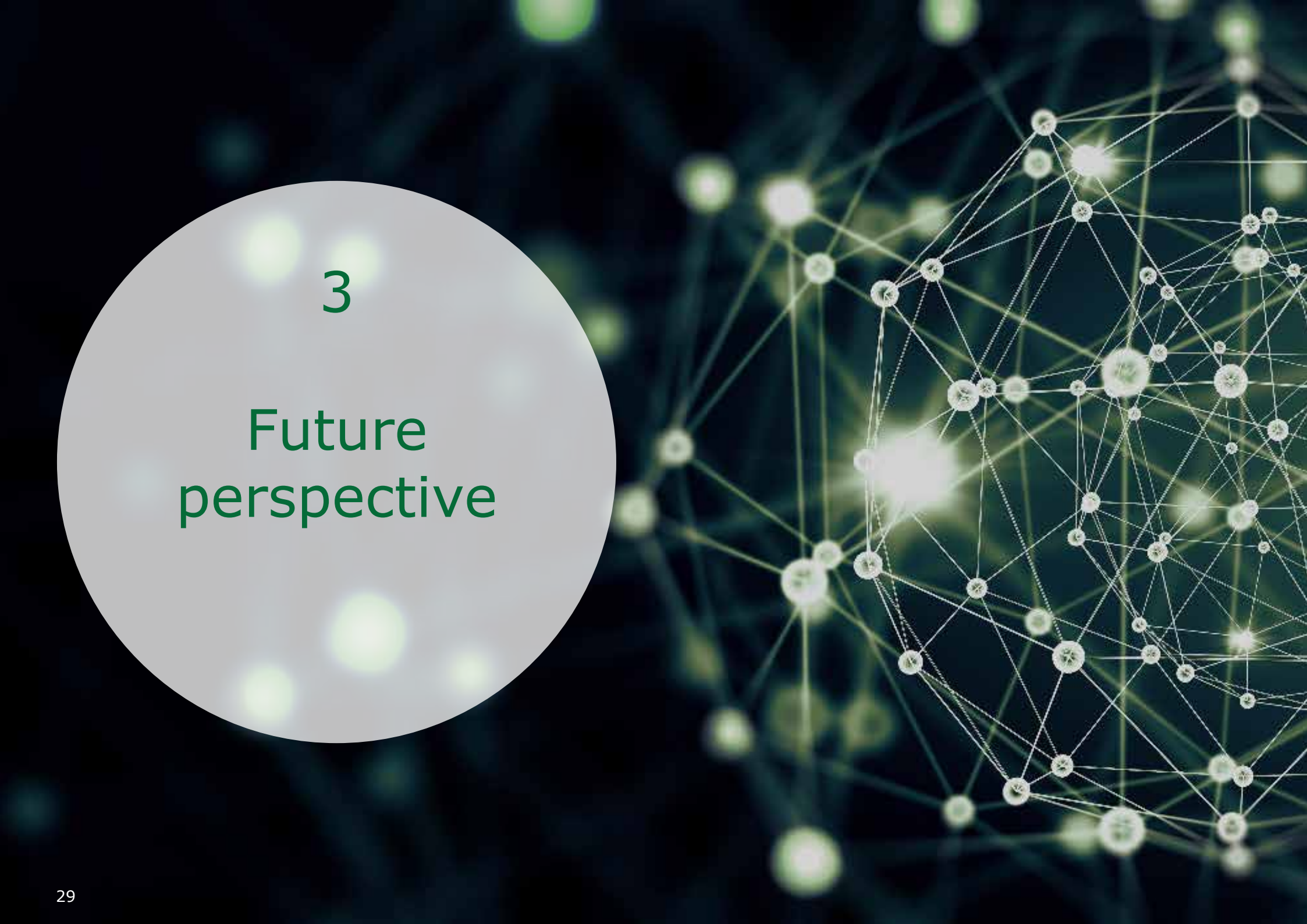
Needs

- Easy, quick & simple
- Sharing & saving insights



Ideas

- Streamline log-in process
- Clear structure
- Clear indications of options/actions



3

Future
perspective

To get an image of all future possibilities in data communication and developments in an organization in general, a literature research is conducted in this chapter. First the developments in an organization will be described. A persona of the CEO of the future will be created. Followed by a description of developments in data technology and communication. This chapter concludes with opportunities for designing the dashboard of the future.

3.1 Organization of the future

Customer intimacy

The interest in customer intimacy is growing. The combination of new technologies and analytics techniques make it possible to minimize or eliminate the trade-off between scale production and the needs and wishes of the customer. With new technologies it is possible to know what your customer wants in a quick and visionary way. (Allen et al., 2017; Bloem et al., 2014; Briggs et al., 2017)

Mission and long-term strategy

The customer intimacy can be created by a clear vision of making a difference in the world. Customer will be inspired and can identify themselves with the company's mission, so customer intimacy is growing. The mission can also inspire the employees of an organization. (Deloitte Development LLC, 2017) Bain & Company, a management consulting firm, noticed a growing number of CEOs that see a higher purpose not as a side issue or fluffy topic but rather as a central element of the organization's culture. External parties, for example the government and general

public, press companies to focus more on the bigger picture, like sustainability and fair products. This mission will not influence the fundamental goals of strategy; making profit by achieving a lower or better cost position, delivering superior customer experience or controlling an industry standard.(Allen et al., 2017) This bigger picture is also about a long-term strategy (+5 years). Companies will focus more on generating a long-term value instead of changing plans at the end of the quarter to achieve the goals. This will be reached by creating a multiannual plan with financial performance and strategic plans fitting the mission. (Barton, Bailey, & Zoffer, 2016; Deloitte Development LLC, 2017)

New structure

The structure in an organization will change, when talking about hierarchy and team composition. Instead of mere efficiency, successful organizations must be designed for speed, agility, and adaptability to enable them to compete. For this new focus a flexible and team-centric model is necessary. (Deloitte Development LLC, 2017) Figure 3.1 represents the shift towards a

3.2 CEOs of the future

network of teams. The number of traditional managers will reduce because of the self-managed teams. The permanent bosses will be replaced by formal mentors who help guide the employee's career from project to project. Coaching and feedback will be more important, so performance reviews should be real-time, continuous and transparent. (Allen et al., 2017) This new structure and project based teams will increase the use of flexible and shared workspaces, so called shared activity-based workplaces. (Appel-Meulenbroek, 2016)

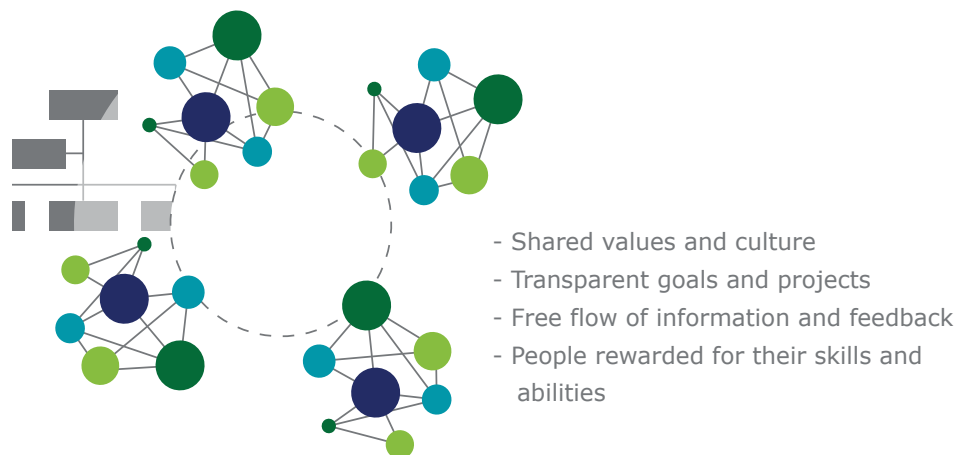


Figure 3.1: Shift towards a network of teams

A future image of CEOs in elder care as well as the future use of data will be created based on literature and a meeting with experts in the field of elderly care; M. Kiewik and D. van der Bij, senior managers at Human Capital and CFO services. The needs of the CEO, followed from the interviews in chapter 2.3, will serve as basis for a persona.

The role of a CEO is shifting from managing to inspiring and coaching. Companies are mission-driven, so CEOs focus on adding value through enabling mission-critical roles rather than controlling information flow. (Allen et al., 2017) Knowing what happened and why it is no longer adequate. CEOs need to know what is happening at the moment, what is likely to happen next and what actions should be taken to get the optimal results. (Lavallo et al., 2011) Data-driven decisions are more and more important by running a business. The analytics-driven insights should closely match with the organizational strategy. Making data-driven decisions at the right time should be easily understandable for the end-users and fit within the organizational processes.

CEO of elderly care organizations

CEOs in the elderly care often have a social background or come from the field of (elderly) care. This often means that the client experience and employee experience are important topics, next to the position of the organization and the financial health. The CEO creates a strategy and vision based on facts to improve the organization's position compared to others.

Well-considered decisions can only be made if it is understood what is happening and why. The interest in data-driven decision making is growing, but the background of the CEOs makes it hard to use and interpret available data. This combines with a lack of time means that the CEO is not interested in puzzling with numbers and data. To support the CEOs making data-driven decisions, data should be understandable and easily intractable. Making results vibrant and supporting data with quotes and images makes it more visible and better accessible. To save time, the important facts like changes, risks and threats arising from the data should draw the most attentions. Important is the comparison with similar organization profiles and trend analyses to prepare for future scenarios.

Transparency is also an important fact for the CEO. Decisions made at a higher level of the organization, should be available and understandable for all employees in the organization. Sharing insights and being transparent to all employees will increase over the years. (Kiewik, 2017)

Persona

All the insights are captured in a persona on the next page. The CEO is not scared of new innovations but she misses the expertise in technology and data because of her social background. She wants to constantly improve the organization, client experience and satisfaction of the employees. By comparing to other organizations with the same profile as well as the market, new strategies and visions are created. These new strategies and visions will be based on data-driven decisions. So, the interest in data is growing but the CEO is not confident to interact with the data by herself.

*Figure 3.2:
Persona of CEO in 2025*



Susan Baker

Age: 50 years
Job: CEO
Sector: Elderly care

Drive

Emphatic

Curious

Innovative

Technology

Motto



Love what you do!

Goals

"I always want to improve the client and employee experience, so they love to be part of my organization."

"It is important to be prepared for the future, so the organization should be healthy."

"I build strategy and vision based on facts, I want to make well-considered decisions."

Interest

"I want to know who my client is."

"The reason behind things is interesting."

"The reality is what interests me, what do my employees say?"

"Transparency is the new standard"

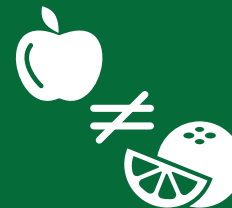
Important factors for insights

Risks



Only changes and threats are interesting

Similar comparison



Compare with same organization profile

Predictions



Future scenarios to prepare for changes

3.3 Developments in data technology & communication

First, a short description of the development will be given. This short description is followed by highlighting technology and communication developments with examples. A detailed description can be found in appendix C.

Developments in data technology make it possible to create a more natural interaction between human and computer/machine. Voice control and chatting with a bot is already possible, in the future this will be easier and almost flawless.(Ismail, 2017; Van de Gevel, Broersen, & Wolvius, 2017) Due to smaller boundaries and

limitations, access to and working with data becomes easier. The way of working, presenting and interacting with the data will be more interactive.(Tableau, 2017) Developments on controlling a device will also cause a more natural interaction. For example AR and VR make it possible to be surrounded by data and interact with it by gestures and speech. Adding a virtual dimension is not always supporting the goal of data visualization, gaining easily insights. Most of the time it is distracting and not adding value. (Few, 2007) As an example Figure 3.3 and 3.4 show a distracting background and a 2D dashboard in a virtual environment.

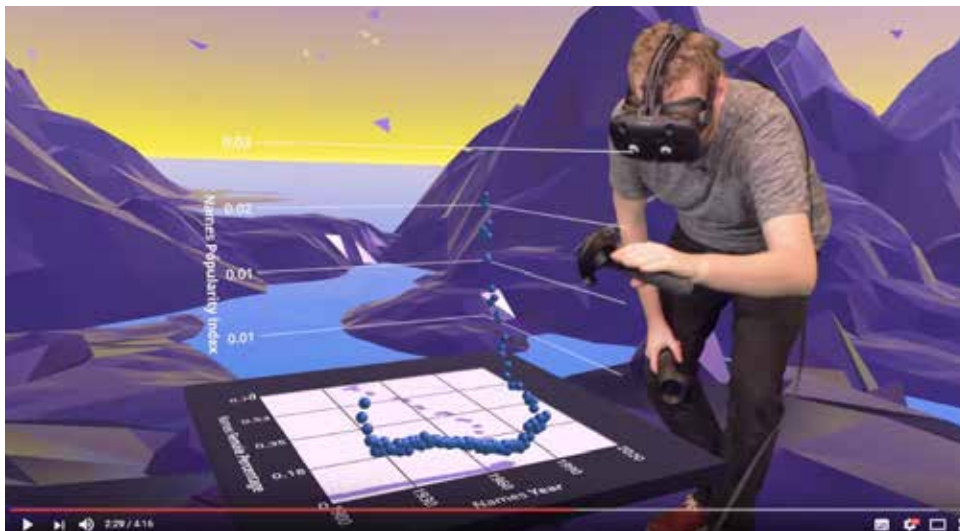


Figure 3.3: Distracting background in VR-environment (Looker, 2017)

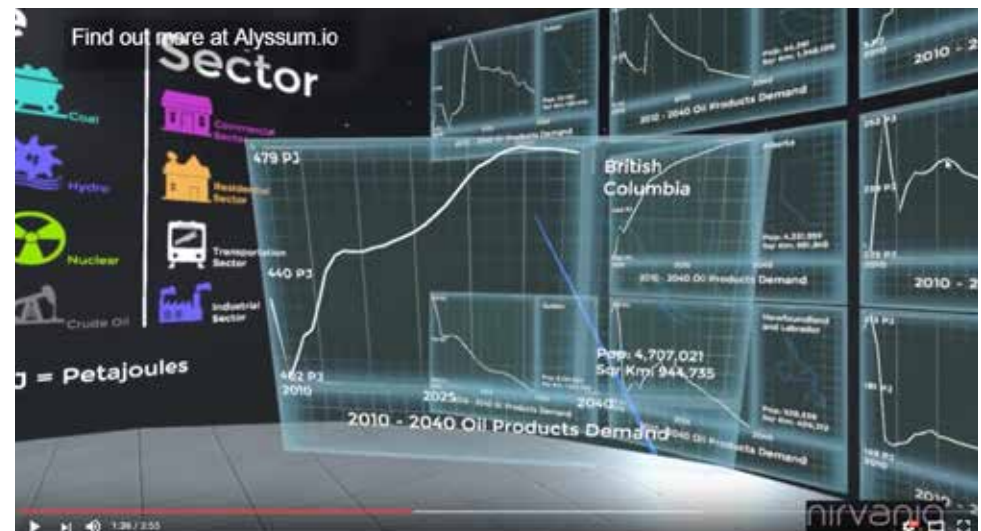


Figure 3.4: 2D visualization in VR-environment (Nirvaniq Labs, 2016)

Data technology

The main developments in data technology are;

- No data boundaries
- Artificial Intelligence (AI)
- Natural language processing (NLP)

Apple's Siri, an everyday life example of a digital assistant making use of data bases, AI and NLP. The app uses speech recognition to make recommendations to users and execute voice commands. Siri adjusts to user preferences to make search results as personal as possible. Siri is more than a voice, it makes suggestions for recipients who are often mailed by a new message and searches for unknown phone numbers in mails/messages.



Figure 3.5: Siri the digital assistant (Apple Inc, 2017)

Data communication

The main developments in communication of data are;

- Device independence
- Interactive visualizations and workbooks
- Augmented Reality and Virtual Reality

The use of data becomes more natural and interactive. More and more data collecting applications and gadgets appear, collecting data about our sleeping, eating and sport habits. An example of this is Fitbit, a bracelet measuring activity which is represented on an app and dashboard. (Fitbit Inc, 2017b) The data visualization is interactive and available on several devices. (Fitbit Inc, 2017a) The data gives insights in daily habits and the fulfillment of goals.

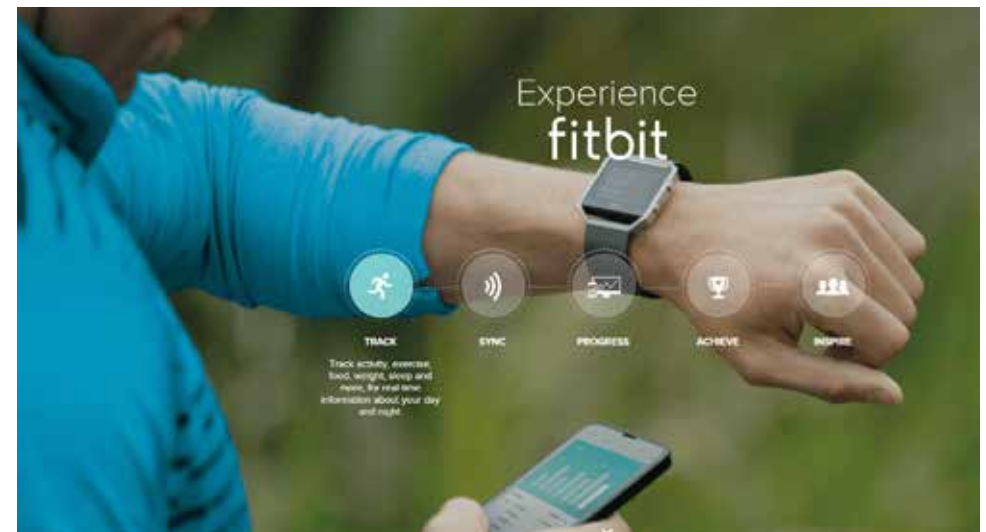


Figure 3.6: Fitbit collecting & visualizing data (Fitbit Inc, 2017a)

3.4 Conclusion

Figure 3.7 shows an overview of the previous sections. Important is the overlap of the areas. The key words for data in the future will be; natural, flexible and frequent. Insights about the content and opportunities in data communication are listed below.

Content

- Making data-driven decisions will grow in the coming years.
- Interest of the CEO will be on financial health of the organization, market development, client- and employee experience.
- Data should always be accessible, at any time and on all kinds of devices.
- More frequent data or even real-time data will be available in the coming years.

Opportunities

- More natural interactions while gaining insights from the data.
- Data limitations and boundaries will be gone, so the access and use of data sources will increase and easier to handle.
- Helpdesk via a Chatbot by the use of Artificial Intelligence and Natural Language Processing.
- Giving automatic warnings will be possible, for example when data has changed or a risk is predicted by the data.

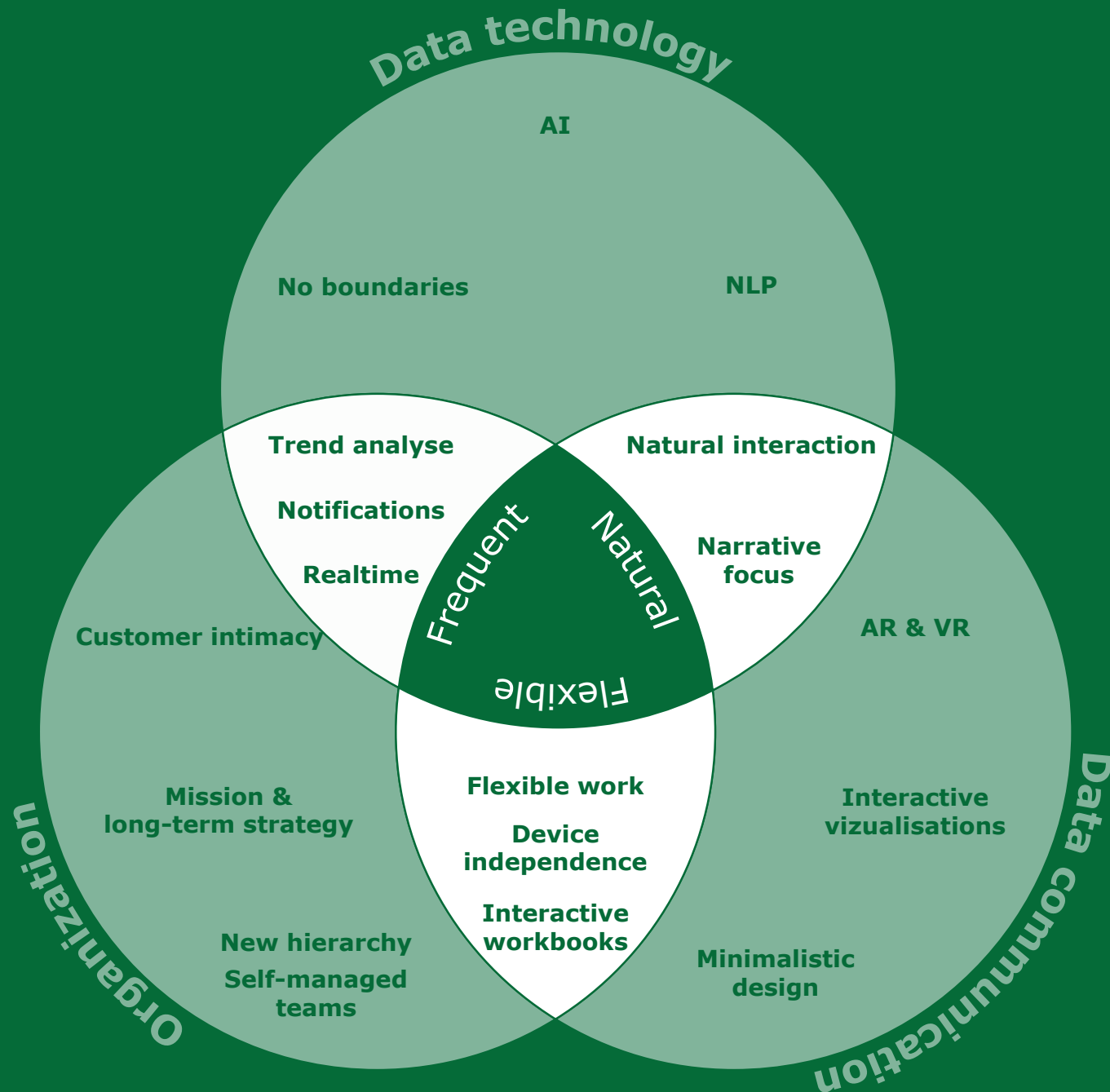


Figure 3.7:
Overview of future perspective findings



4

Ideation

In this chapter first the design brief is formulated by setting a design goal, creating an interaction vision and listing the requirements of the design. After setting the goal, ideas are created. The ideation phase is structured by dividing the concept in three parts; Content of the data, Selection of other comparisons and Communication of the data to others. For all parts iterations are made, using feedback of colleagues or by testing some ideas. At the end the final concept will be presented; ActiZ Benchmark Zorg 2.0.

4.1 Design brief

The design brief is defined by the insights gained from previous analysis, the current situation and the future perspective. First the goal will be described, followed by the interaction vision. Finally, the requirements are listed.

Design goal

The design goal is a statement that specifies the effect that needs to be achieved by the design. The goal identifies the user(s) that will interact with the design, the situation and/or location in which the interaction takes place and the intended effect for the user.

The current data communication takes place via an online dashboard, Actiz Benchmark Zorg. The online dashboard is not user friendly and is experienced as overwhelming. It misses a clear structure and guidance. This is contrast with the future perspective, data communication becomes more and more intuitive. The communication between users about gained insights runs via external documents, which takes up time to create and cause overview to be lost. The design goal will exist of two parts. It

will focus on the use by the CEO and the communication between the CEO, CFO and HR-manager. See Figure 4.1. Overall, the goal will be to maintain the overview of the strategic benchmark. The design goal is presented on the next page.

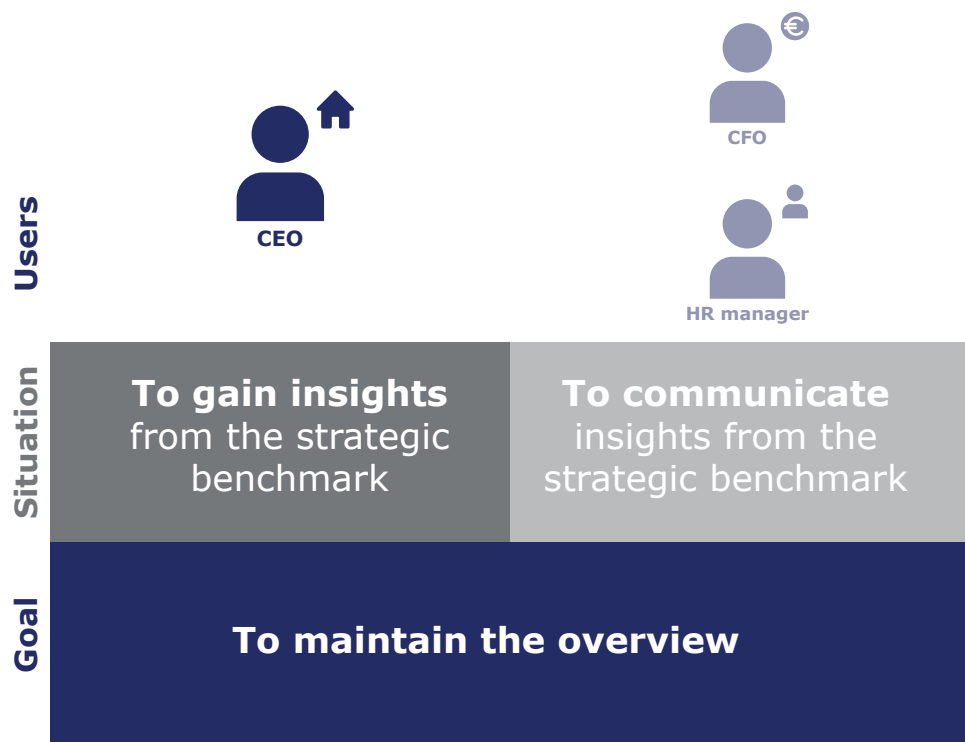


Figure 4.1: Schematic representation of design goal

The design should **stimulate and facilitate the CEOs** of elderly care organizations **to gain insights** from the strategic benchmark

&

facilitate communication between the **CEO, CFO and HR manager** of elderly care organizations about benchmark findings to maintain the overview.

Interaction vision

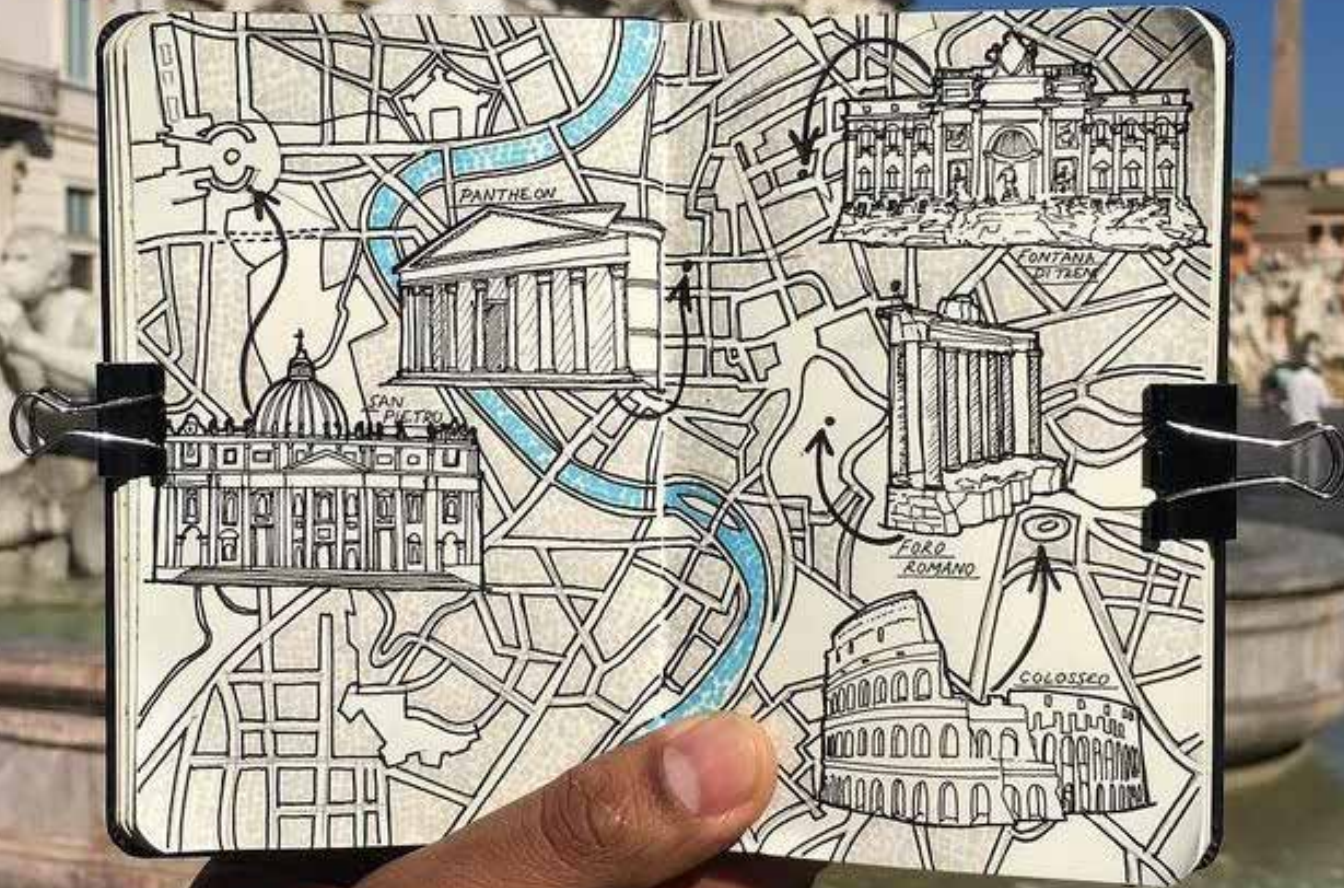
An interaction vision represents the intended qualities and characteristics of the design interaction. The interaction vision is captured by an interaction analogy.

In the current situation the CEOs feels lost in the online dashboard. In the new design the user should feel in control and free to discover. From the future perspective data becomes more intuitive and interactive. Data visualizations gives user the option to play and discover data. The complexity of the data and the structure, can make them feel overwhelmed and do not makes them curious to dive into the data. This should be stimulated by the design.

The interaction analogy is ; A city map to guide you to places you want to go to. The complexity of the street plan is shown in a simple way to keep the overview. When walking to the desired destination, you are in control of the route because of the guidance and support by the map. During the walk new places are discovered, which makes you curious to explore and maybe take another route. Eventually, you reach your final destination without feeling lost. See Figure 4.2.

From this analogy, interaction qualities are derived. The experience should lead to a feeling of being *in control, curious and inspired*.

Figure 4.2:
Metaphor represents interaction vision



Finding your way and destination in a new city by using a city map

Requirements

The design requirements are listed below. Requirements are based on the information from gained insights in previous chapters. The most important decisions and requirements will be described, for the complete list see Appendix E: List of requirements.

1. Content

The design will focus on the essential information for the CEO. (3.2. CEO of the future) It should be possible to compare on different levels; on time period, geography, intern in the organization and care profile. The new selection options will be based on the selection options which are now available.

1.2 The design provide insights in the financial health, the market development, the clients and the employees of the organization.

1.4 The design provides the selection options from the current dashboard.

2. Users

The target-group for the design will be the CEOs in the elderly care. In addition, the CEO, CFO and HR-manager should be able to communicate insights with each other via the design.(2.2 Users of the dashboard)

2.2 The CEO will use the dashboard by him/herself.

2.3 The CEO, CFO and HR-manager are able to communicate with each other via the design.

3. Interaction

From the design goal and interaction vision it becomes clear that the CEO should feel in control. The design should provide the main information, but the CEO should also be stimulated to become curious which results in diving deeper in the data. The gained insights should inspire the creation of new strategies and visions.(2.3 Interviewing CEOs of elderly care organizations and 4.1. Design brief)

3.2 The user feels in control while using the design.

3.3 The design creates curiosity by the user. This invites him/her to dive deeper into the system.

3.4 The design inspires the user to create new strategies and visions.

4. Product

The decision is made to present the information of the benchmark on a smart screen. It is the step in-between the current situation and the future perspective with augmented reality and virtual reality. See Figure 4.3. (3.3 Developments in data technology and communication) It is important to look at the developments in AR and VR, but the intermediate step should not be forgotten. The user will be prepared by existing data communication via a smart screen for the future data communication via AR and/or VR.

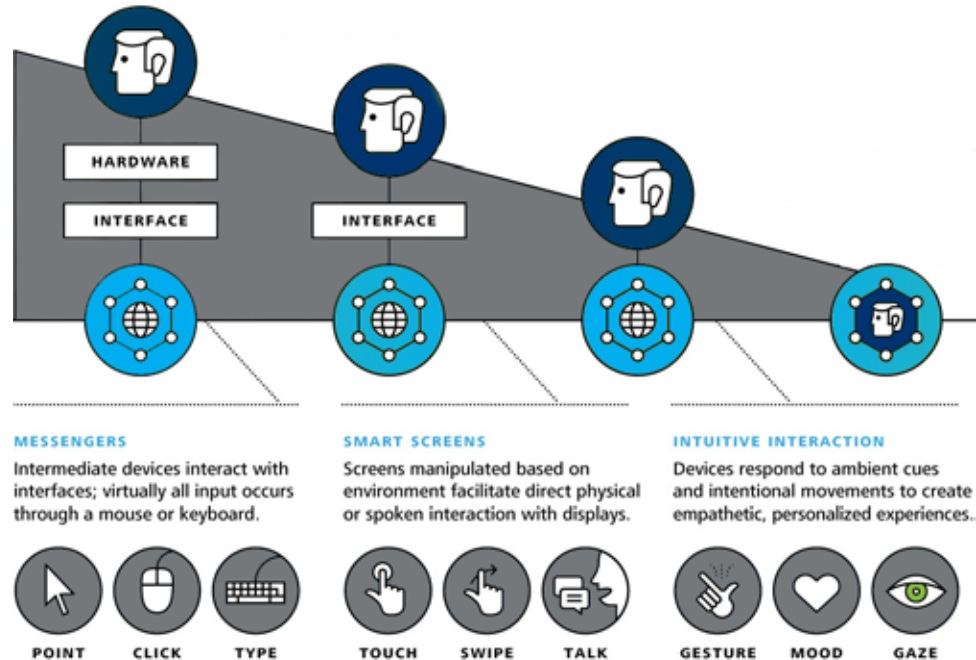


Figure 4.3: Evaluation of interactions

For the appearance of the dashboard it is decided to stay close to the current look, which matches the design and colours of ActiZ. See Figure 4.4.

- 4.1 The design will be used on smart screens, like touch screens from smartphones, tablets, and laptops.
- 4.5. The design should match the design and colours of the client, ActiZ.



Figure 4.4: Colour palette of ActiZ

4.2 Conceptualization

The data communication for the strategic benchmark of ActiZ is divided in three parts during the ideation phase; the content, the selection-method and the way of communication. For the different parts, ideas are created and several concepts are designed. The content is based on feedback from different Deloitte colleagues. The concepts for the selection method and the way of communication are tested via paper prototyping. At the end, the three parts are combined in Actiz Benchmark Zorg 2.0., which will be presented in the next chapter.



Content



Selection



Communication

Content

In agreement with Deloitte, it is decided to use the current content of the dashboard. This means that no new data will be presented in the design. However, to meet the design goal an improvement of data visualization and the structure of the dashboard is designed.

Structure

The structure of the design is already simplified by using only four modules; Business management, Market development, Employees and Clients. (Bedrijfsvoering, Marktontwikkeling, Medewerkers en Cliënten) The content of the modules are restructured, based on the interviews with the CEOs and discussions with the team of Deloitte. For each module the main question is described, followed by the structure of the data. See Figure 4.6, containing the Dutch terminology of the dashboard.

*Figure 4.5:
3 parts of the design*

*Figure 4.6:
Structure of the design*

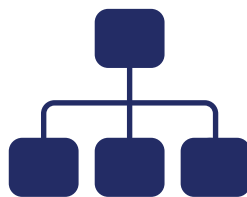
How financially healthy is my organization?

Financieel
Nettowinstmarge
Liquiditeit
Solvabiliteit
Netto weerstandsvermogen

Kosten & Opbrengsten
Kostenposten
Uiteenzetting van post

Opbrengsten
Innovatie t.o.v. opbrengsten

Overhead
Zorg vs. Overhead
Opbouw van overheadkosten



Bedrijfsvoering



Medewerkers

How does the market develop in relation to my organization?

Kengetallen
Rendement
Lange termijn
Korte termijn

Resultaten

Omzet
WLZ omzet vs. clientendagen
Totale omzet vs. aantal FTE

Zorgbehoefte
Bevolking samenstelling
Ontwikkeling ZZP VV
Bevolkingsgroei



Markt ontwikkeling



Clënten

How satisfied are my employees?

Score per thema
Uiteenzetting van thema

Net Promotor Score (NPS)
Meest & minst aantrekkelijk

How satisfied are my clients?

Customer Quality index (CQ)

Net Promotor Score (NPS)
Meest & minst aantrekkelijk

NPS vs. CQ

Data visualization

The data visualization will be changed for several graphs and tables. The changes are explained with images from the current dashboards in comparison to the new visualizations. Appendix F: Data visualization, contains the search for the best way of data vizualization. New graphs are made based on literature and discussions with Deloitte colleagues. (Brath & Peters, 2004; Deloitte The Netherlands, 2016; Few, 2007) Due to privacy reasons the data is fake. The created graphs are designed to evoke a reaction using positive and negative outcomes.

- Systematic use of colours

In the visualizations orange will be used as an indicator for the organization and purple will be used for the sector.

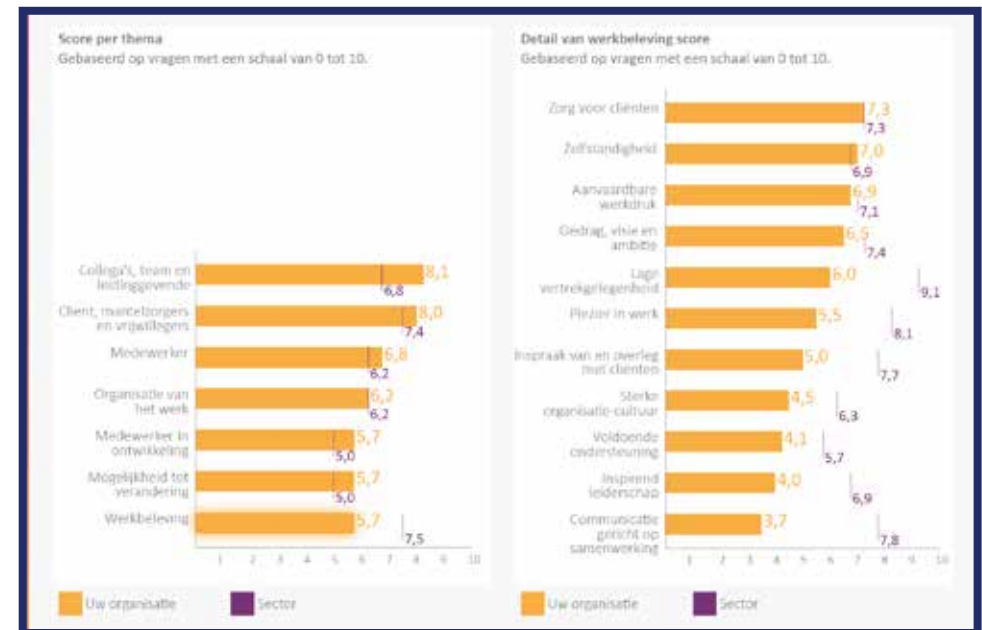
- Tables are replaced by graphs

In the current dashboard tables are used for showing the data and the details of the data. This can be replaced by graphs, so it is better and quicker to understand. The graphs are listed on grades, so the highest score on top and lowest at the bottom. See Figure 4.7.

Figure 4.7:

Old and new visualization of the employee's scores

Ronde	Thema	Indicator	Zorggroep west ...	Sector	Grootteklasse L	Niet bekend
Voorjaar 2017	Tevredenheid (NPS)	NPS	-15,8	-12,0	-23,2	-
		Totaal	-15,8	-12,0	-23,2	-
	Mogelijkheid tot veranderen (nieuw)	Borgen van veranderingen (nieuw)	5,6	5,7	5,3	-
		Totaal	5,6	5,7	5,3	-
	Werkbeleving (nieuw)	Communicatie gericht op samenwerking (...)	7,4	7,3	7,1	-
		Inspirerend leiderschap (nieuw)	7,0	6,9	6,8	-
		Voldoende ondersteuning in ontwikkeling (...)	7,3	7,1	7,0	-
		Sterke organisatiecultuur (nieuw)	7,2	7,4	7,0	-
		Inspraak van en overleg met cliënten (nie...	9,3	9,1	9,1	-
		Plezier in het werk (nieuw)	7,5	7,7	7,4	-
		Lage vertrekfrequentie (nieuw)	8,1	8,2	8,0	-
		Gedragen visie en ambitie (nieuw)	6,5	6,3	6,2	-
		Aanvaardbare werkdruk (nieuw)	5,5	5,7	5,5	-
		Zelfstandigheid in de uitvoering van het w...	7,0	6,9	6,8	-
		Zorg voor cliënten (nieuw)	7,9	7,8	7,7	-
		Totaal	7,3	7,3	7,1	-
	Medewerker	Verandering van baan	8,1	8,1	8,0	-
		Zelfstandigheid	7,0	7,0	6,8	-
		Totaal	7,5	7,3	7,2	-
	Organisatie in verandering	Veranderingen	5,5	6,1	5,8	-
		Visie en ambitie	6,5	6,3	6,1	-
		Totaal	6,1	6,3	6,0	-
	Organisatie van het werk	Arbeidsomstandigheden	7,5	7,8	-	-
		Rooster en roosterproces	7,2	7,0	-	-
		Werkdruk	6,2	6,4	6,1	-
		Totaal	6,7	6,8	6,4	-
	Medewerker in ontwikkeling	Ondersteuning in ontwikkeling	7,3	7,1	6,8	-
		Totaal	7,3	7,3	7,0	-
		Communicatie	7,4	7,2	6,9	-



- Graphs are clearer

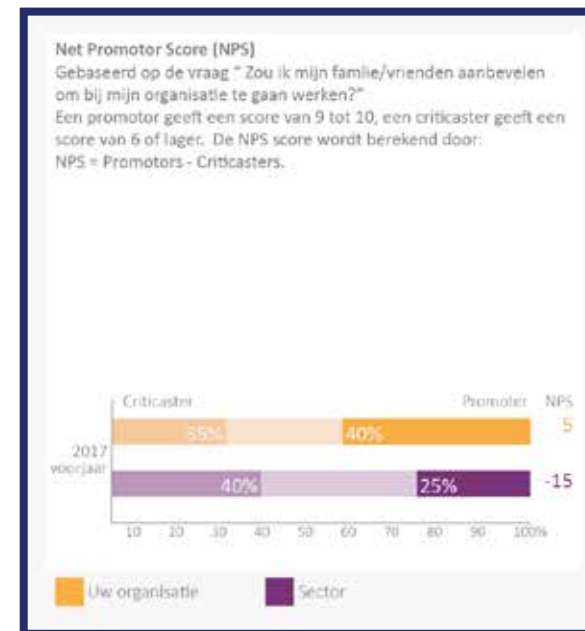
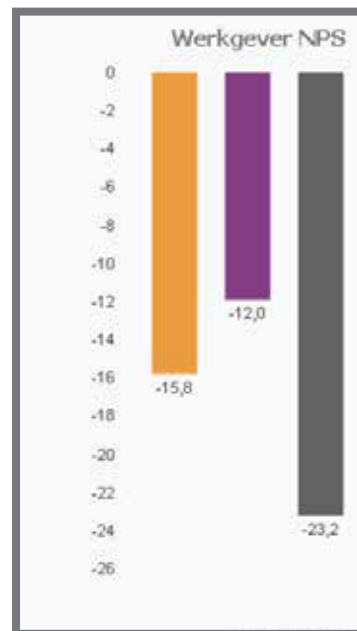
The graphs are also redesigned, for example the Net Promotor Score. The new graph also shows the user how the NPS is determined. See Figure 4.8. The data visualization of the overhead is clearer by deleting the big icons and adding a visualization of the data. See Figure 4.9.



Figure 4.8:
Old and new visualization of the overhead

Figure 4.9:

Old and new visualization of the NPS



Selection

The design should have the option for making selections. The selection menu should have all options of the current dashboard. All the selection options of the current dashboard are listed and a new structure will be presented. Based on the new structure, three selection menus are designed. The three menus are tested with colleagues at Deloitte via paper prototyping. The insights are used for developing the method for the new design.

Structure

From interviews with the CEOs and own experience it was found that the structure of the selection options is not clear. The options are subdivided by non-self-explanatory terms, such as "Cluster". There are also multiple places for making a selection; one menu would be increase the overview. The new structure can be found in Appendix G: Restructuring of the selection menu.

Three selection menus

The created methods differ in location of the menu on the screen and the way of interaction. A hidden menu with a drag and drop function, a menu on the top with a clicking function and a fixed menu on the side with a scroll function are created. See

respectively Figure 4.11, 4.12 and 4.13. Explanation of the menus can be found in Appendix G. Because of the differences, it will be clear which interactions do and do not work during testing.

Testing via paper prototypes

A short description of the outcomes will be given per menu. In Appendix I, the test and its outcomes are described in more detail.



Figure 4.10: Testing via paper prototypes

Menu 1: Hidden menu

- The hidden menu is hard to find. When the menu is hidden, the made selection is not shown.
- Drag and drop function for making a selection is not intuitive. Clicking is the first reaction for making a selection.

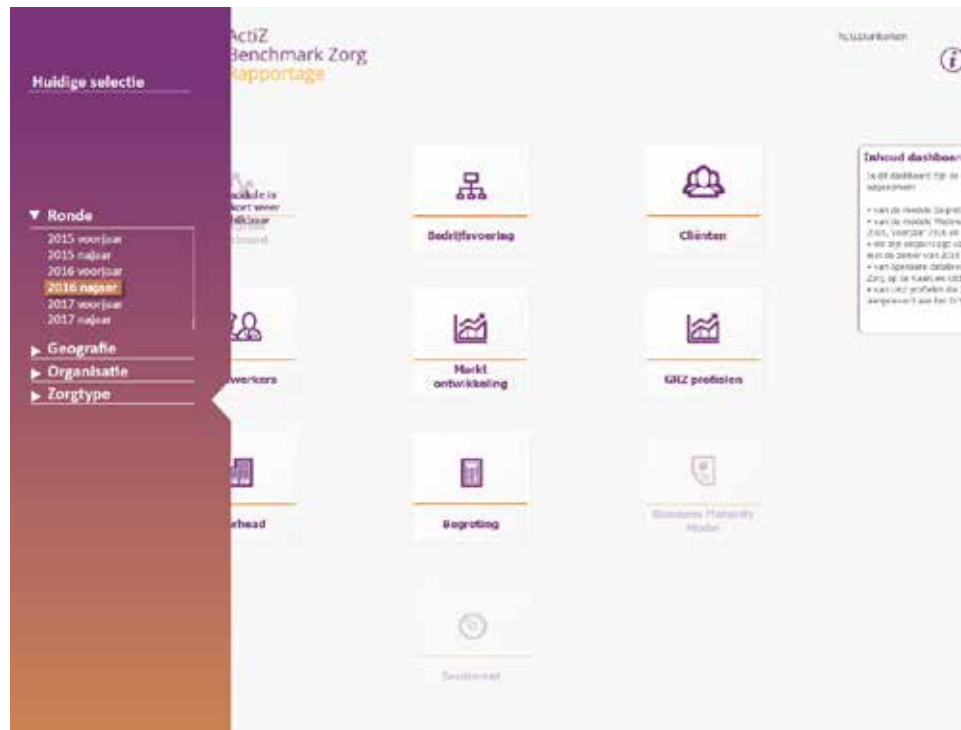


Figure 4.11: Hidden selection menu

Menu 2: Menu on top

- Clear and easy to make a selection. No struggles are experienced.
- The menu covers the page, which is experienced as uncluttered.

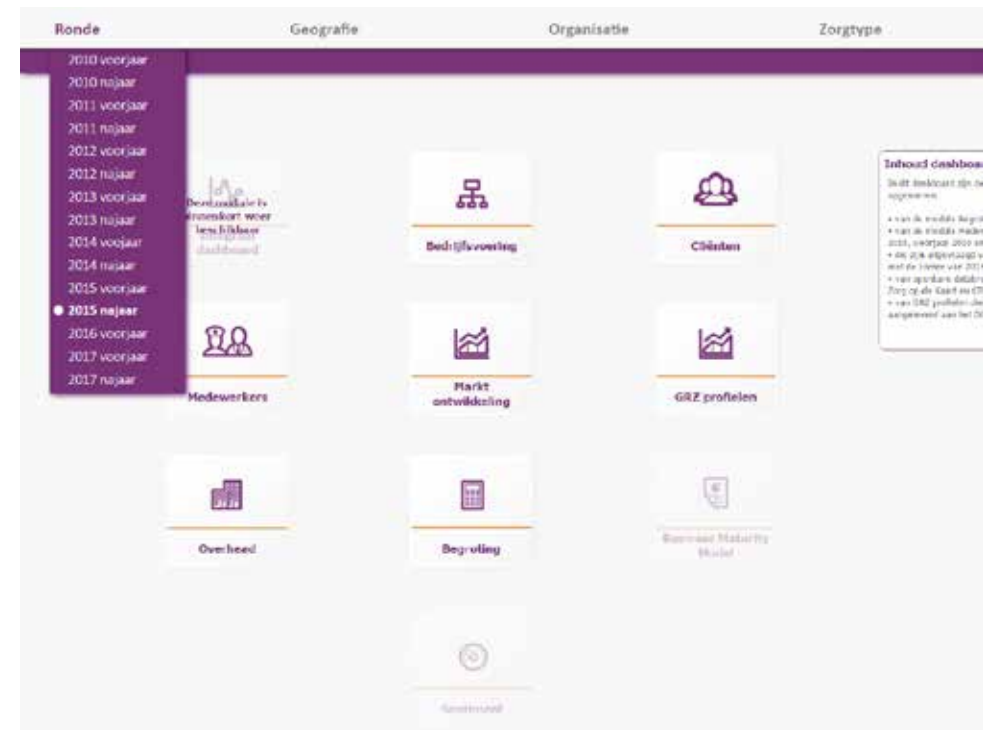


Figure 4.12: Selection menu on top

Menu 3: Fixed menu on the side

- Making a selection by scrolling and confirming with a button is experienced as annoying and time consuming.
- The fade away indication for scrolling is a good use cue and experienced as intuitive.

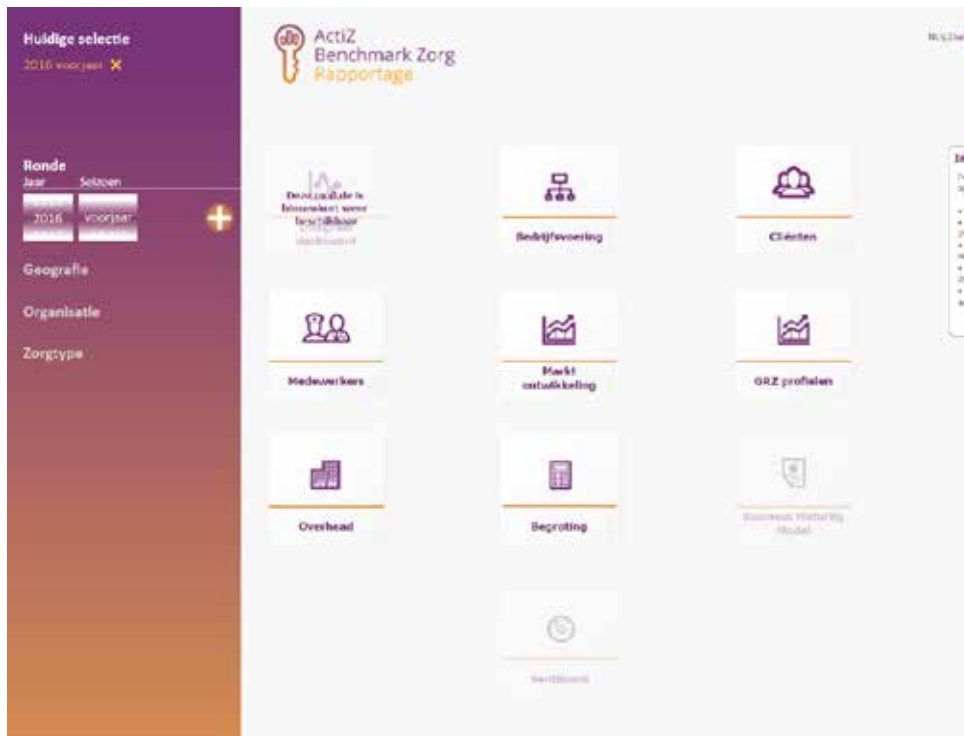


Figure 4.13: Fixed selection menu on the left

Overall

- A side menu is preferred for making selections, this is clear and does not cover other information on the screen. Also, the made selection is shown all the time.
- Making a selection by clicking on the desired selection is experienced as most intuitive and fastest.
- The fade away on the top and bottom of a list is a clear indication for the scrolling function.
- A drop down menu gives the best guidance and overview for making a selection.

From the previous insights a new menu is designed which combines aspects from the three previous presented methods. Important is the feeling of guidance so the user feels in control. (4.1 Design brief) The guidance is created by the use of use cues and giving feedback to the user. See Figure 4.14.

- An arrow indicates a dropdown menu, which opens by clicking.
- Fade away indicates the option for scrolling, supported by a bar as indication for the position in the list.
- Chosen options become orange when touching them.
- Made selections are indicated with a bold font in the list.
- Made selections are shown on top of the menu and can be deleted by clicking on x.

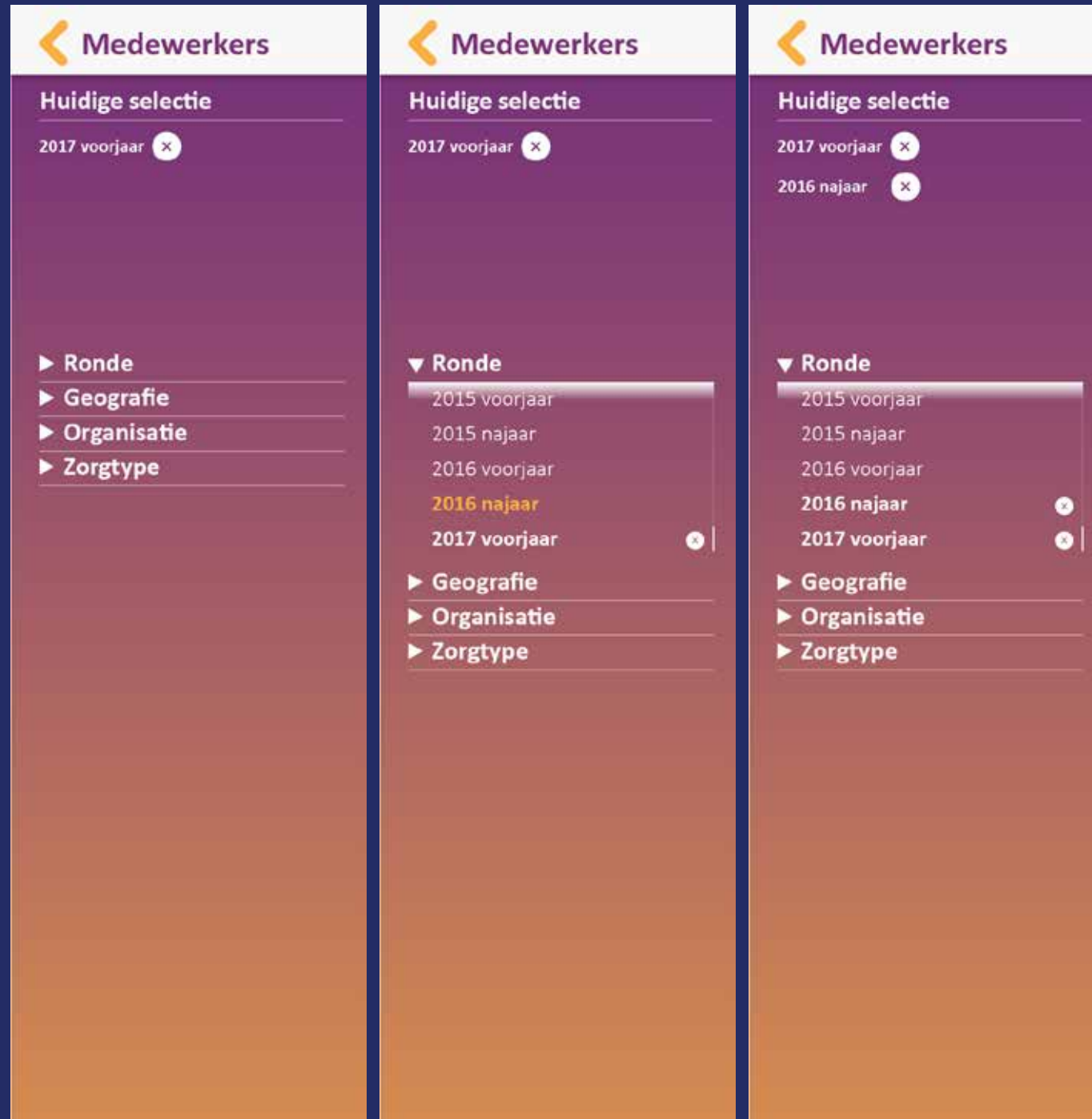


Figure 4.14: New selection menu

Communication

The design should have the option to communicate insights between the CEO, CFO and HR-manager and to save them to an offline environment. From insights of future developments (3.3 Developments in data technology and communication), the design should also be able to communicate with the user. The design should give warnings via Artificial Intelligence about low scores in comparison with competitors. The current helpdesk will be replaced by a Chatbot, so the user can ask questions and get answers within a few seconds. After the creation of the selection menu it is decided to make the communication menu on the right side of the screen. Two communication menus are designed and tested. The test was conducted with Deloitte colleagues via paper prototyping. The insights are used for designing the new menu.

The communication menu should thus contain:

- Warnings about risks
- Helpdesk
- Option for sharing and saving insights

Two communication menus

The created methods differ in the way of selecting and sending a graph. The way of making a message also differs either via voice-recording or typing. See Figure 4.16 and 4.17. In Appendix J, the two menus will be explained.

Testing via paper prototypes

A short description of the outcomes will be given. In Appendix K, the test and outcomes are described in more detail.



Figure 4.15: Paper prototypes of communication menu 1

Menu 1: Voice-recording function

- The recording function will disturb others, making it uncomfortable to use.
- The use of icons and indications gives the user good guidance.

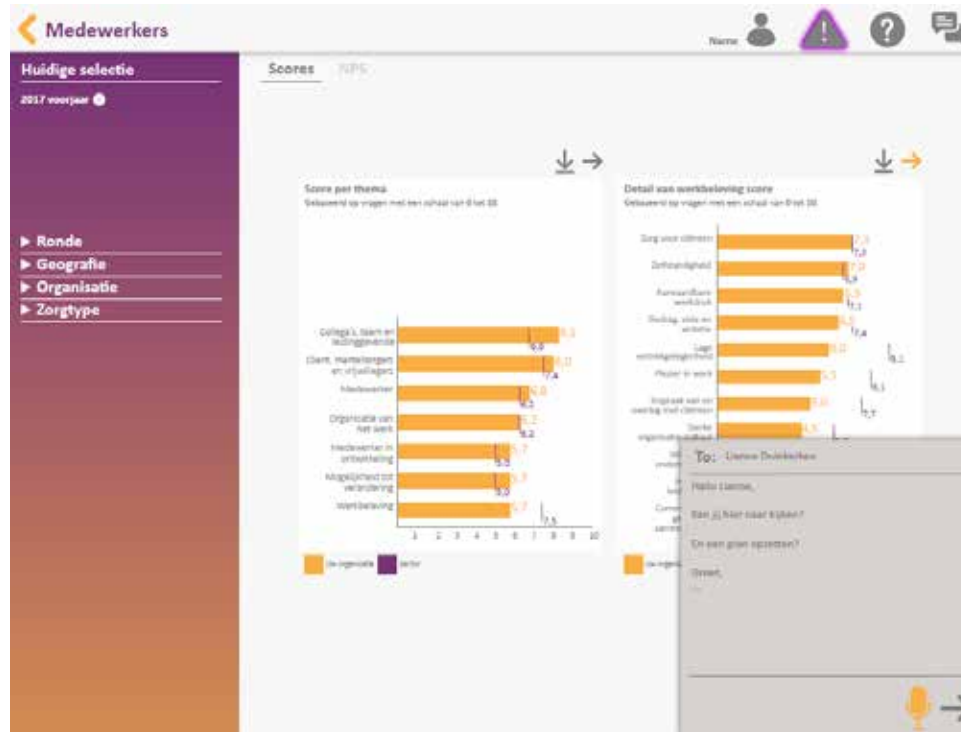


Figure 4.16: Menu 1

Menu 2: Keyboard function

- Making a selection via drawing is not clear, the most intuitive action is clicking on the graph.
- The side menu, use of icons and indications gives the user good guidance.

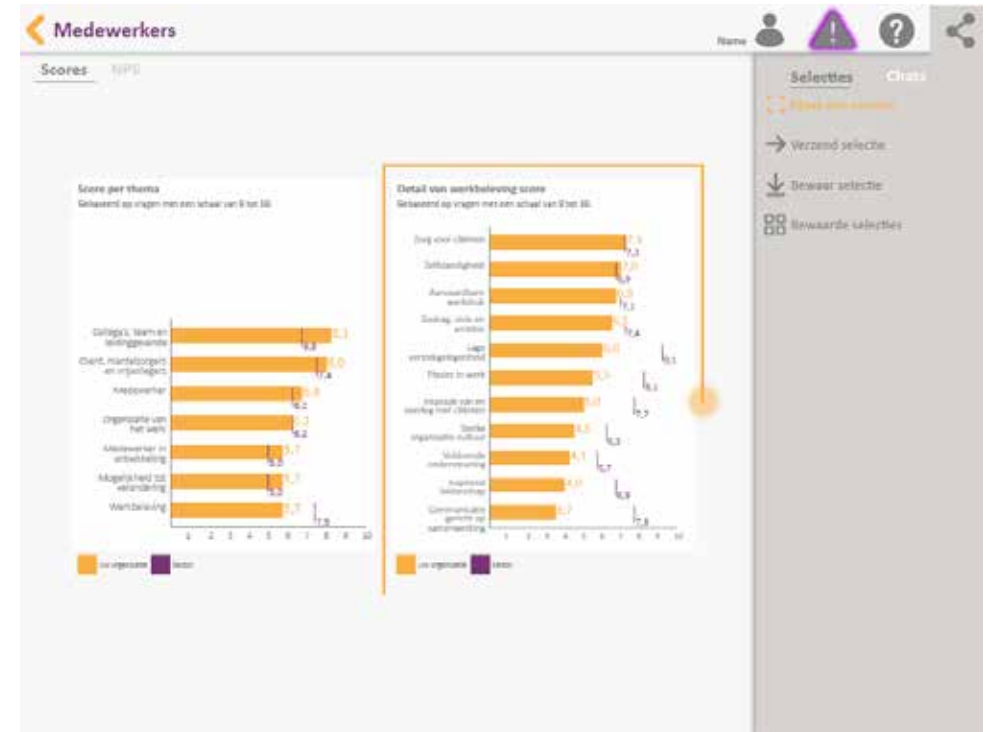


Figure 4.17: Menu 2

Overall

- A side menu is preferred, this gives the user guidance and overview of all options.
- The easiest and most effortless way to select a graph for sending is clicking on a graph.
- Typing is preferred, because it will not disturb others.
- It should be possible to select multiple graphs at a single time.

From the gained insights by the test, menu 2 is selected to develop for the new design of the communication menu. The way of selecting a graph for sharing is changed by clicking instead of drawing. Some small changes in the structure are also made to create a better flow, for example the option to send a selection appears after making selection. See Figure 4.18.

- Icons are supported by text.
- Chosen options become orange when touching them.
- Select a graph by clicking on it.
- A message can be added via a keyboard.

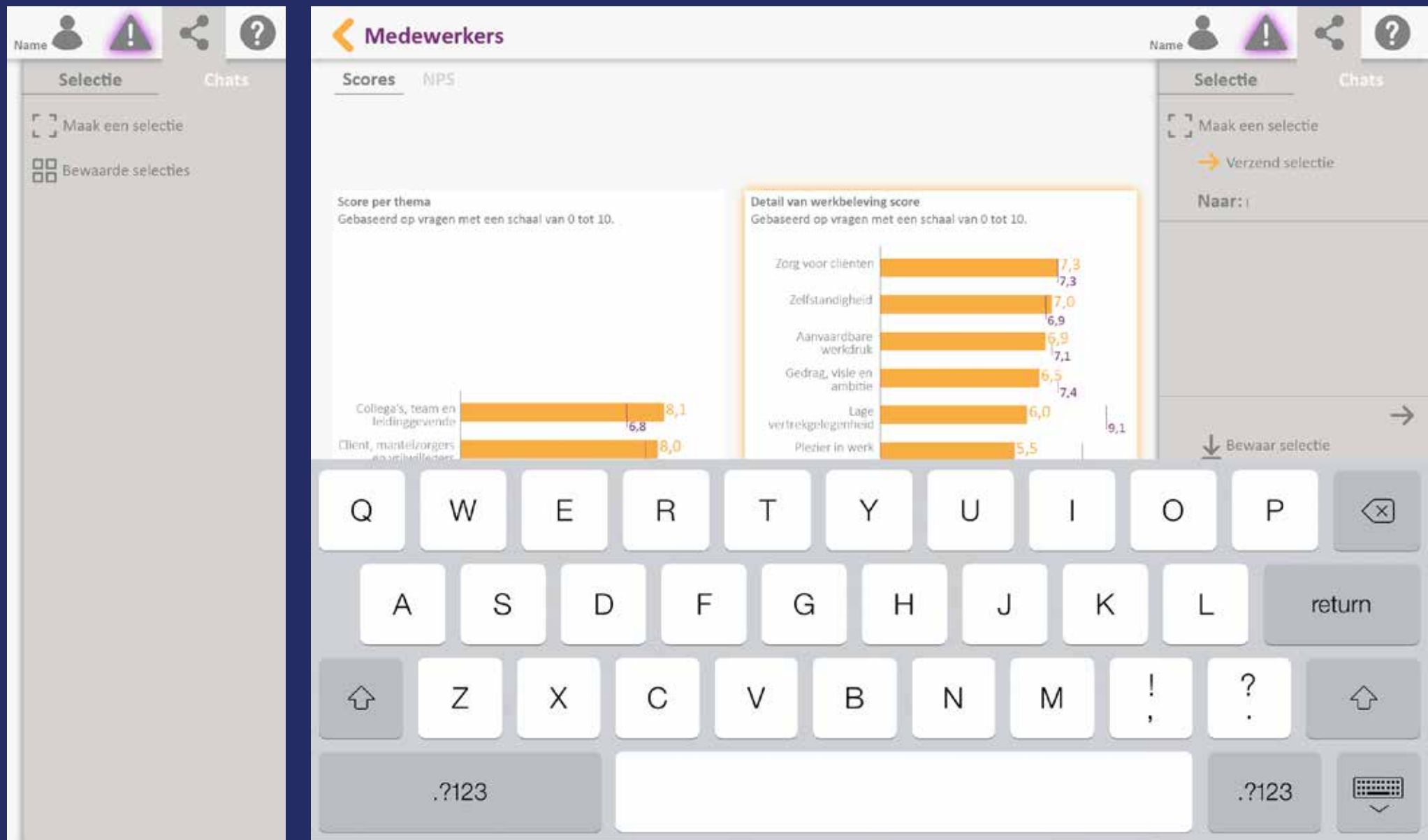


Figure 4.18: New selection menu

4.3 ActiZ Benchmark Zorg 2.0

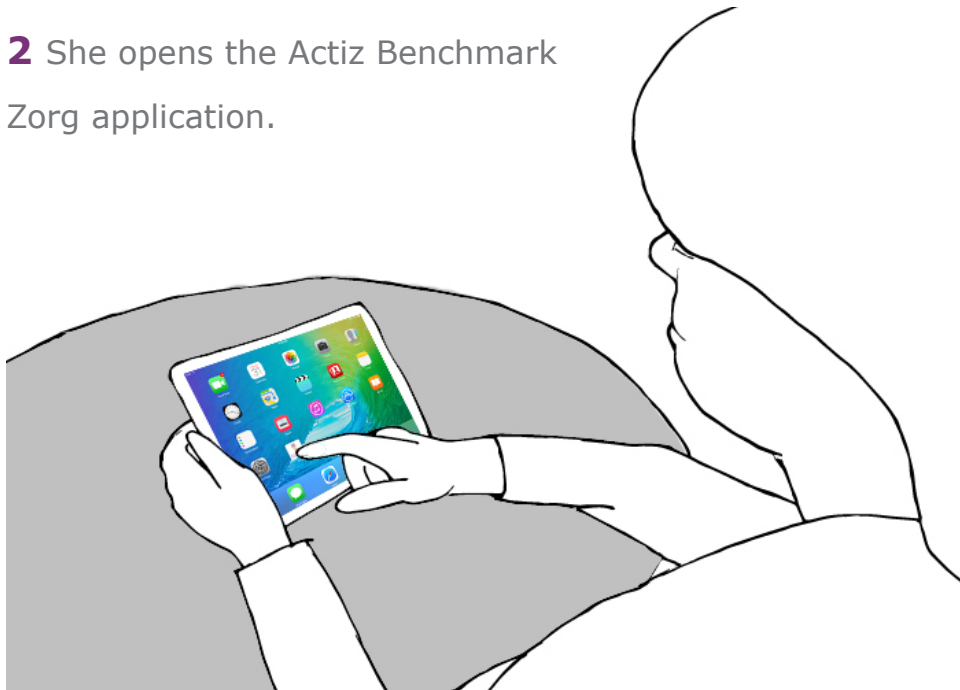
ActiZ Benchmark Zorg 2.0 is a digital dashboard for CEOs in the elderly care, providing the strategic benchmark in the elderly care. CEOs can make data driven decisions of organizational strategy and vision by gained insights from Actiz Benchmark Zorg 2.0. The simple and clear structure provides an effortless and seamless navigation experience, so the user feels in control. By only showing the main topics and the option to dive deeper in to the data the overview will be maintained. The CEO is not overwhelmed by an overload of information. A selection menu and the data visualization stimulates to dive deeper in the data when needed. Features like notifications for changes and warnings, chatbot as helpdesk and easily sharing insights with others, facilitate the CEO to gain insights with less effort. This way of interacting is stimulating and creates curiosity. Via a scenario the interaction and features of the design will be explained.



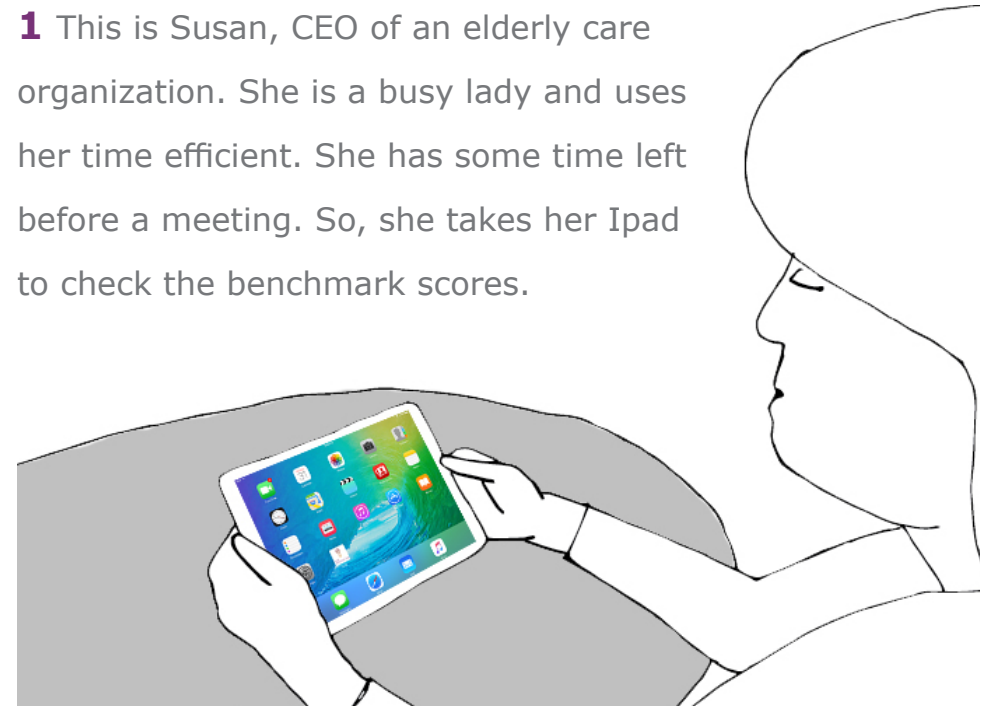


ActiZ Benchmark Zorg 2.0

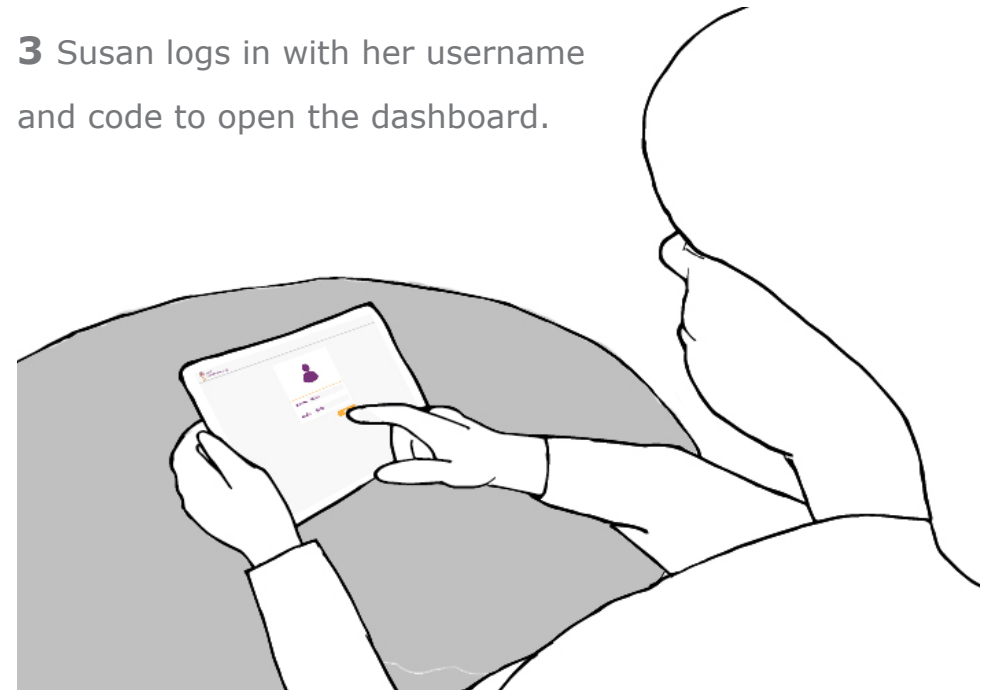
2 She opens the Actiz Benchmark Zorg application.



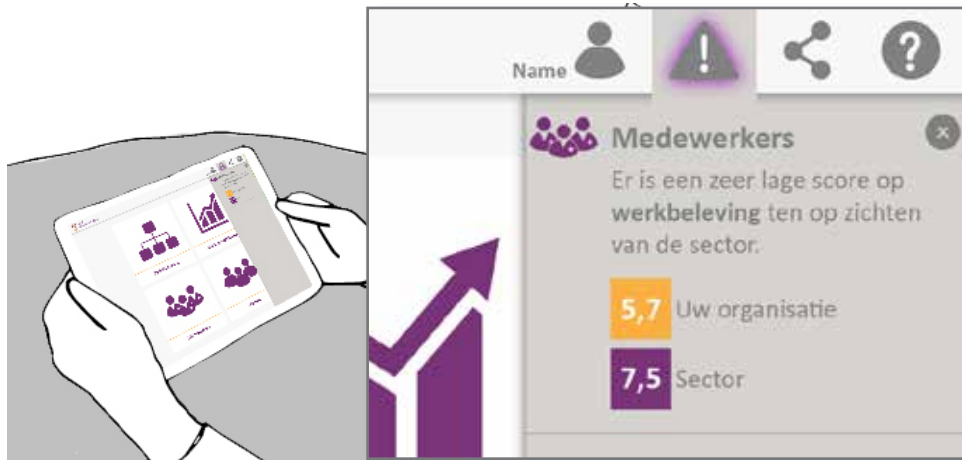
1 This is Susan, CEO of an elderly care organization. She is a busy lady and uses her time efficient. She has some time left before a meeting. So, she takes her Ipad to check the benchmark scores.



3 Susan logs in with her username and code to open the dashboard.



4 "A notification! The work experience score is way lower in comparison to the competitors."



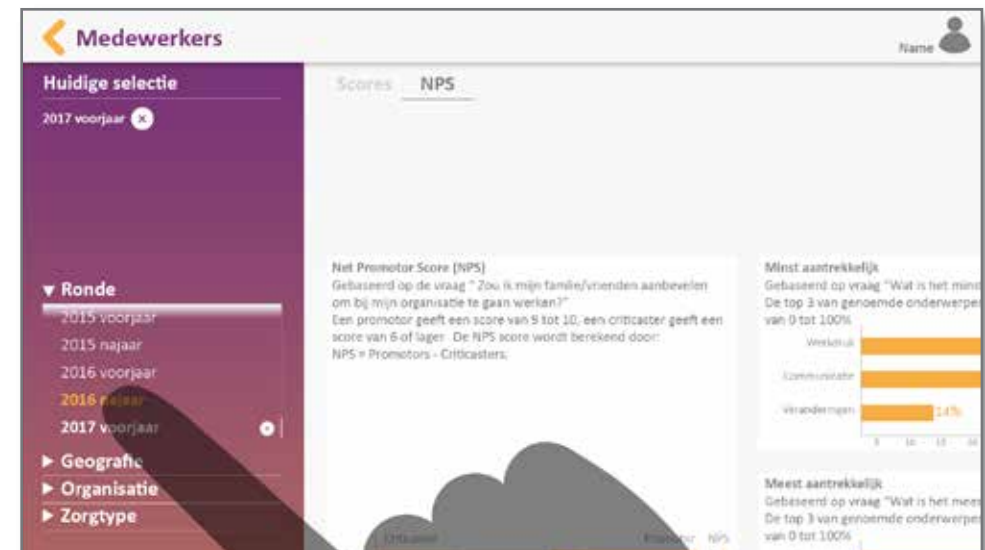
5 She goes to the information of the notifications.



8 "I am also curious to the Net Promoter Score." She navigates to NPS via the NPS-tab on top.



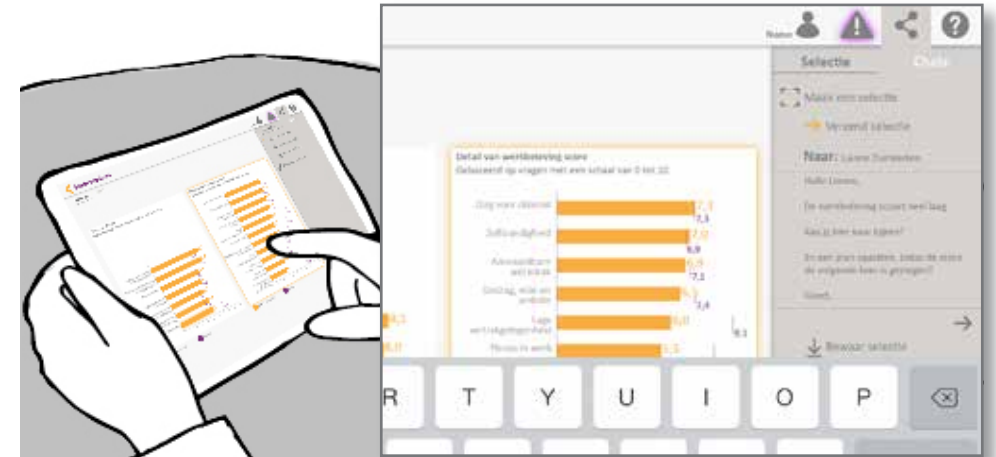
9 "Is the NPS changed compared to last year?" She selects 2016 via the selection menu.



6 “Interesting, I can see why work experience scores **so low.**” She dives deeper into the data by clicking on the work experience bar so detailed information of work experience appears on the right.



7 “I will ask my HR manger to create a plan for **increasing the work experience score by sending the graph and a messages.**” Susan takes action by sending the insights to a HR manager.



10 “Ah, good to see! Compared to last year the NPS **increased.** The promoters group has grown by 10%.”



11 She is curious to the response for coming employee satisfaction. She asks the chatbot and gets directly an answer. “**Good news, the response is already 45%.**”



5

Evaluation



The new design, ActiZ Benchmark Zorg 2.0, is evaluated in this chapter with an user test conducted with CEOs of the elder care. After testing, the design will be improved using the gained insights. A final user test takes place to verify the design goal and interaction vision. The insights lead to improvements of ActiZ Benchmark Zorg 2.0. The implementation of the design is discussed at the end of this chapter.

5.1 Evaluation of ActiZ Benchmark Zorg 2.0

To improve and evaluate the newly designed dashboard, ActiZ Benchmark Zorg 2.0, two user tests are performed. User test 1 is conducted by 4 CEOs of elderly care organizations. The goal is to find the pains and gains of the design. User test 2 is conducted by a CFO and a CEO. The focus of this shifts from usability to the experience of the dashboard. By testing the user experience, the design goal and interaction vision can be verified.

1. Research questions

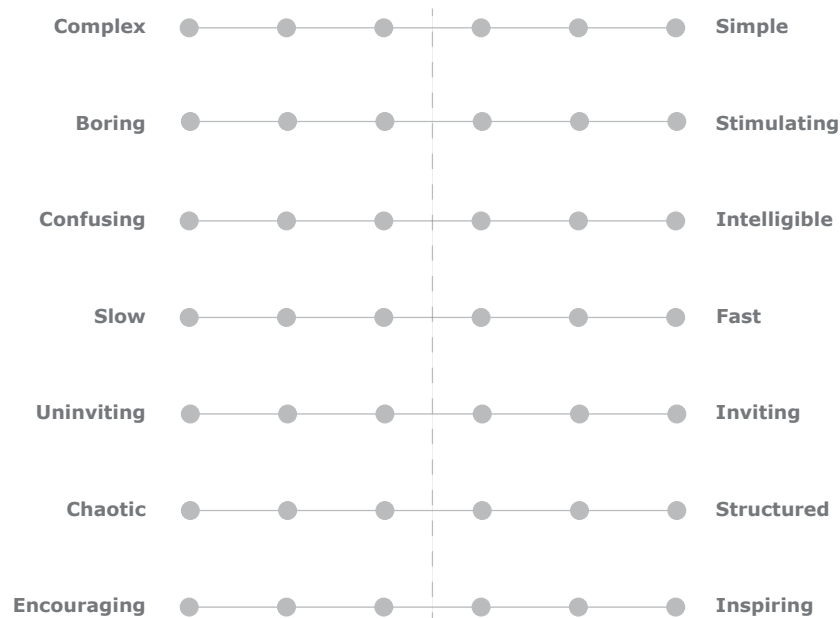
- What are the pains and the gains and what strengthens the usability?
- How does the user experienced the design during and after the use?

#1. Method

The user test was conducted by four CEOs of elderly care organizations. The organizations differ in size and are spread over the Netherlands, to exclude regional differences. (n=4, male/female= 2/2) The design was tested using an interactive prototype on an iPad. The prototype was made in Marvel, an easy and quick online platform for creating interactive prototypes. (Marvel, n.d.) The prototype is available via <https://marvelapp.com/3fe5g9j>. The participants were encouraged to think aloud during the test. In appendix L the protocol and a list of the tasks can be found.

*Figure 5.1 and 5.2:
Contradictions of the questionnaire
Example of personal card*

I think the dashboard is ...



Alex
Sector: Elderly care
Size: XL
Region: Noord Nederland

+ Clear structure and overview
Intuitive navigation
Stimulates to deepen
Help desk is quick and modern

— Faster insights due to color indication
No feedback when graph has been sent
Boring representation of the data

≡ Other information for market development (marktontwikkeling)
Demography
Capacity versus population growth
Missing selection options
Target group
Investment information is interesting
Innovation
Real estate
Measure work experience like Effectory (werkbeleving)

"You get easy insights ... But color indication will support this."

Stoplight indication:
green = good & red = bad

"The dashboard is user-friendly."

Answer on the question:
What do you think of it?

"It is good that the information is being dosed, you can get deeper if you want."

The structure is clear and prevents
an overwhelming feeling.

Quantitative analysis

The user experience is evaluated by a questionnaire, including contradictions, supported by a measurement scale, see Figure 5.1. In the questionnaire, the contradictions are not ordered from negative to positive. The contradictions are based on the intended experience; in control, curious and inspired. (4.1 Design brief) A six-point-Likert scale is used to prevent the occurrence of a 'neutral' answer. The 'natural' answer does not provide much information. (Chomeya, 2010)

Qualitative analysis

In the qualitative analysis, insights about the usability and user experience of the design are gained. Interesting quotes and actions are collected for each of the tests. To get the full meaning of the actions and/or quotes by the CEOs, the insights are clustered and interpreted into paraphrases. See Appendix M for clustered insights of the individual participants. Figure 5.2 shows a summary of the user test on a personal card. The card contains; answers of the questionnaire, quotes and a list of insights on a positive, negative and content level.

#1. Insights

Quantitative

The answer given to the questionnaire are visualized in Figure 5.3. Words on the left do not match with the desired experience and words on the right do match with the desired experience. Due to privacy reasons pseudonyms are used for a representation of the CEOs.

Most of the response is on the right side, which indicates a positive experience by the CEOs. From the results the following can be concluded; the dashboard is experienced as simple, intelligible, inviting and structured. The CEOs also get inspired, but on a lower level. The contradictions boring-stimulating and slow-fast, do not give a clear indication of preference.

Qualitative

The qualitative insights are clustered and divided in pains and gains. On pages 72 and 73, the clustered pains and gains are supported by quotes/actions. Appendix M contains the insights of user test 1 supported by personal cards.

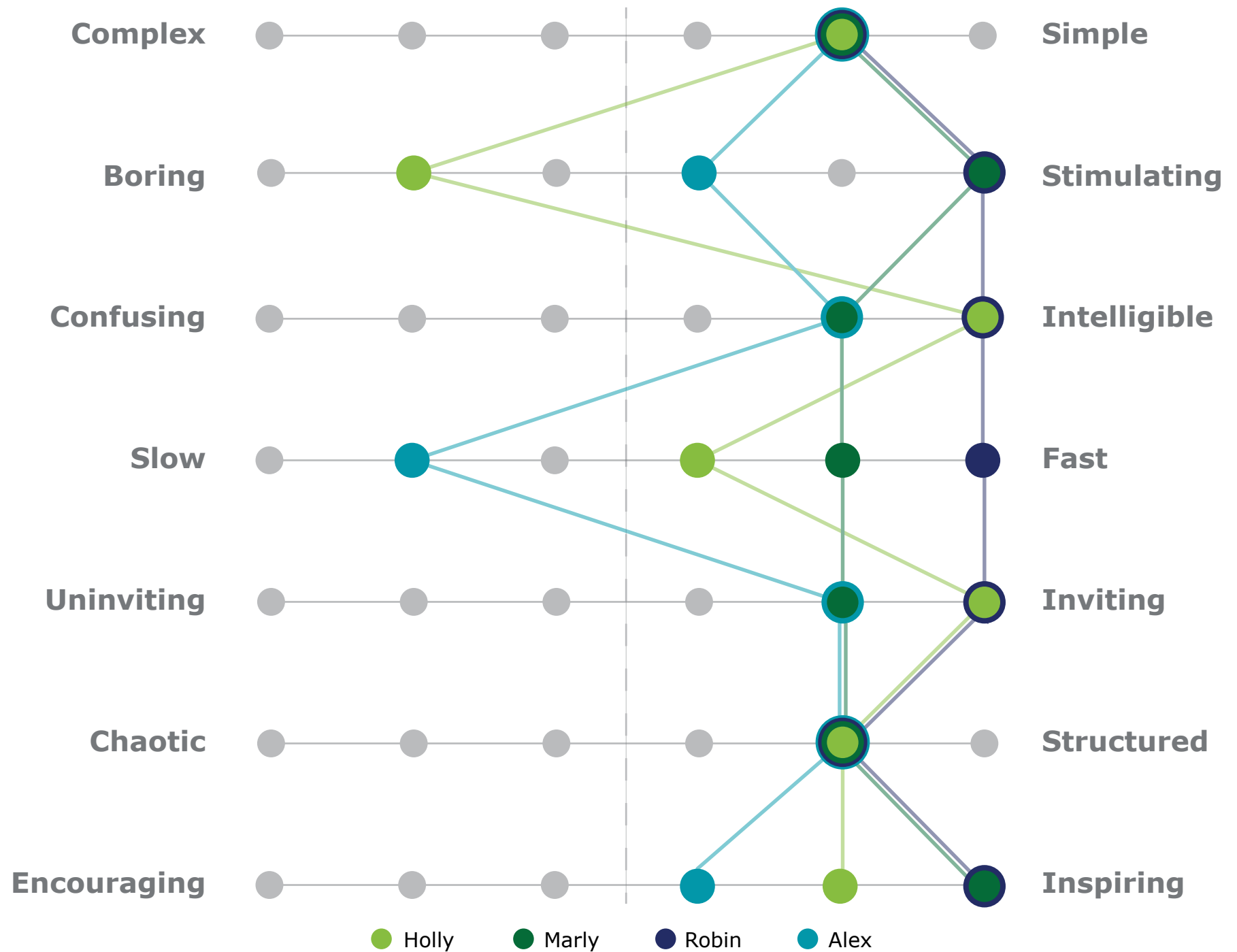
Pains

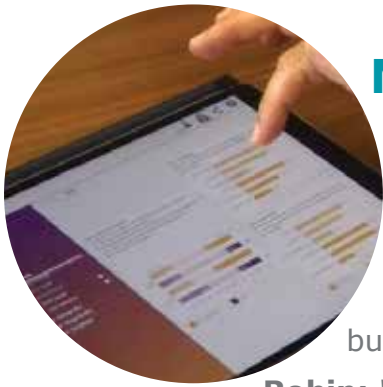
- Colour indications is not explicit
- Troubles with sending insights; selecting and confirmation
- Boring data visualization
- Missing zoom function

Gains

- Clear structure
- Intuitive navigation
- Stimulates to explore
- Quick and modern helpdesk

*Figure 5.3:
Results of questionnaire*





More explicit colour indications

Marly: "They are very similar to each other, that's a bit of a pity...Therefore, it does not seem like different things, but you can read it."

Robin: "You've already made it blurred, but it can be more explicit ... You actually want to see what you've clicked at a glance."

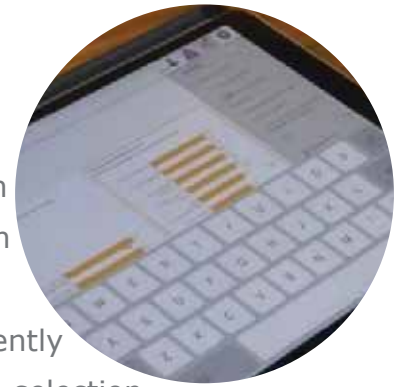
Alex: "Then you should actually do the colours green and red, like a traffic light...When you sit above you're green and if you're underneath you're red."

Troubles with sending insights

Holly: "Oh, I have to make a selection first...I want to send this, so I click on the chart...Oh yes, now it's selected."

Marly: "But I do not know what's currently selected. I would expect to make a selection first...But now I do not see if the message has been sent."

Robin: "Uh, you would not want a notification that the message was sent?...I have a lot of suspicion."



Boring data visualization

Holly: "It's still flat information, which makes it boring. More visualization and moving things would make it less boring."

Alex: "I do not think the dashboard is really stimulating or inspiring, it just holds flat data."

Missing zoom in function

Holly: Wants to zoom in. "Try to zoom again, what is not possible ... It's apparently very intuitive to enlarge, just too small."

Robin: "Here the numbers are very small .. I would like to enlarge it." Moves two fingers apart to zoom in.





Clear structure

Holly: "Oh beautiful, very clear...It's the same system all the time, very nice."

Marly: "The structure is very clear, which makes it understandable."

Robin: "Then I click here, that works really easy, then I get to the right to see the breakdown."

Alex: "It's well structured. Making comparisons is possible."

Stimulates to explore

Holly: "Oh, unfortunately, this does not work yet...This is a good indication, so changes are clear." She wants to make a comparison.

Marly: "Very user-friendly, you're really challenged to play with it."

Robin: "It's stimulating, in the sense that if you look at it you tend to deepen it."

Alex: "It's great that you can zoom in on location and team, so you get much better insights."



Intuitive navigation

All: No problems with navigating through the dashboard. They find all the buttons within a second.

Robin: "By the way, this works intuitively." Refers to the way of navigation through topics and graphs.

Alex: "Aha, then you get the breakdown of the work experience." To see details of work experience, he clicks without thinking on the chart.

Modern and fast helpdesk

Robin: "Yes, nice and a quick answer!"

Alex: "I think this is very modern...You get immediate reply, no hassle with calling to Actiz or Deloitte."



Improvements

In Appendix P, an overview can be found how the Actiz Benchmark Zorg 2.0 meets the requirements as listed in chapter 4.1 Design brief. The pains from the requirement evaluation and the user test will be improved. The improvements focus on two pain-points; more explicit indication and a more structured flow of sending a graph. Figure 5.4 and 5.5 show the improvements of indications. A drop shadow instead of an outer glow is used to highlight the shown information in a graph. The flow for sending a graph is improved by adding a confirmation when the message is send. See figure 5.6.

During the user test some CEOs intuitively tried to zoom by moving two fingers apart from each other. The zoom function can easily be implemented when the design is developed. To reduce clutter, you would just zoom the graph instead of the entire page. The pain-point of boring data visualization will be taken into account in chapter 5.2 Improvement of ActiZ Benchmark Zorg 2.0. The CEOs want to see more interactive data. Deloitte's data visualization team is careful with data that is moving and interactive, it often distorts the readability. The used data was not suitable for interactive data visualization.

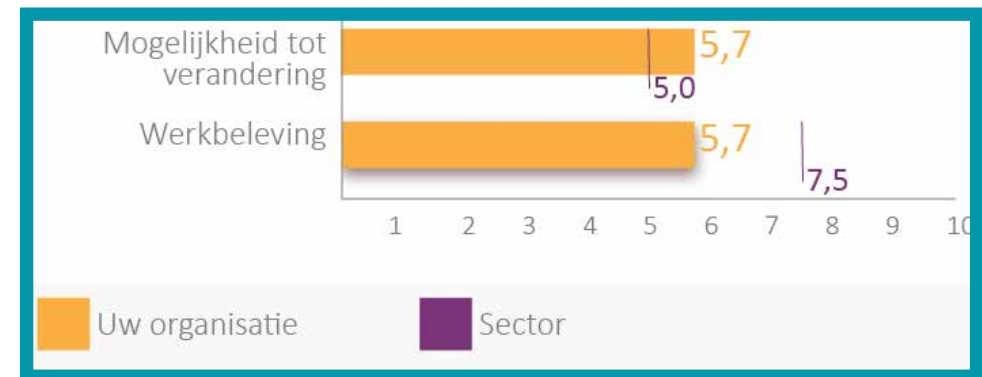


Figure 5.4:

Old and **new** guidance indication

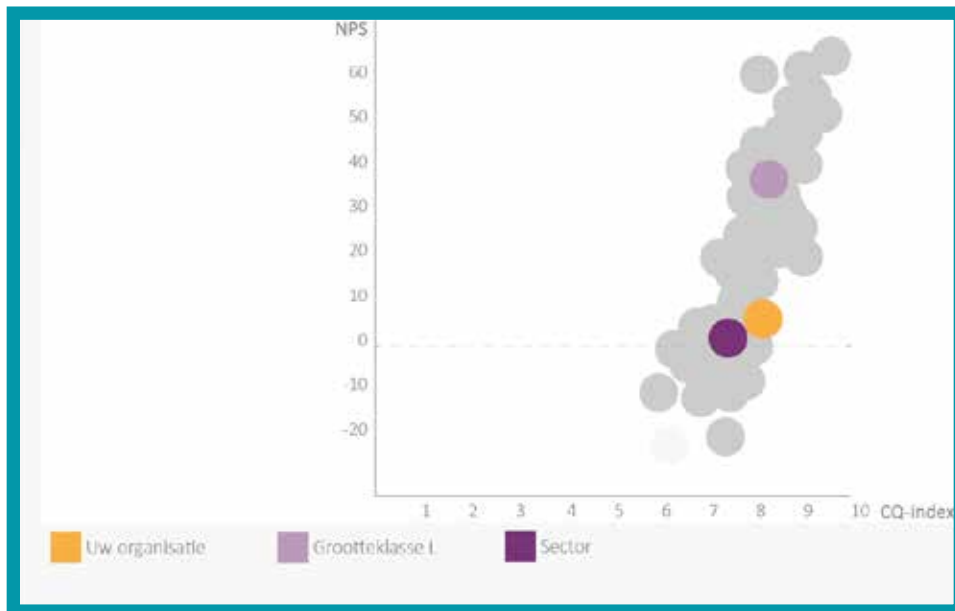
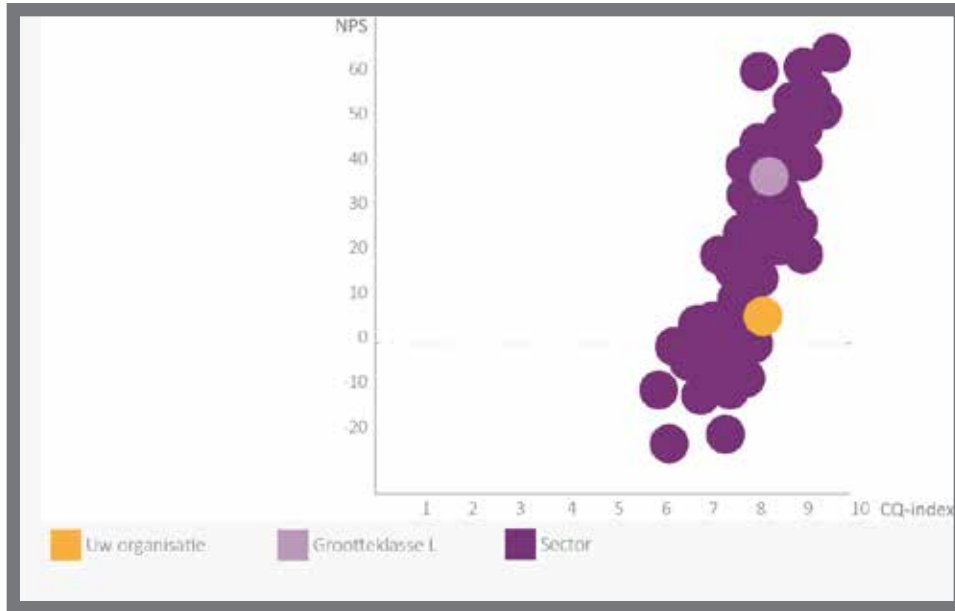


Figure 5.5:
Old and **new** visualization of a graph

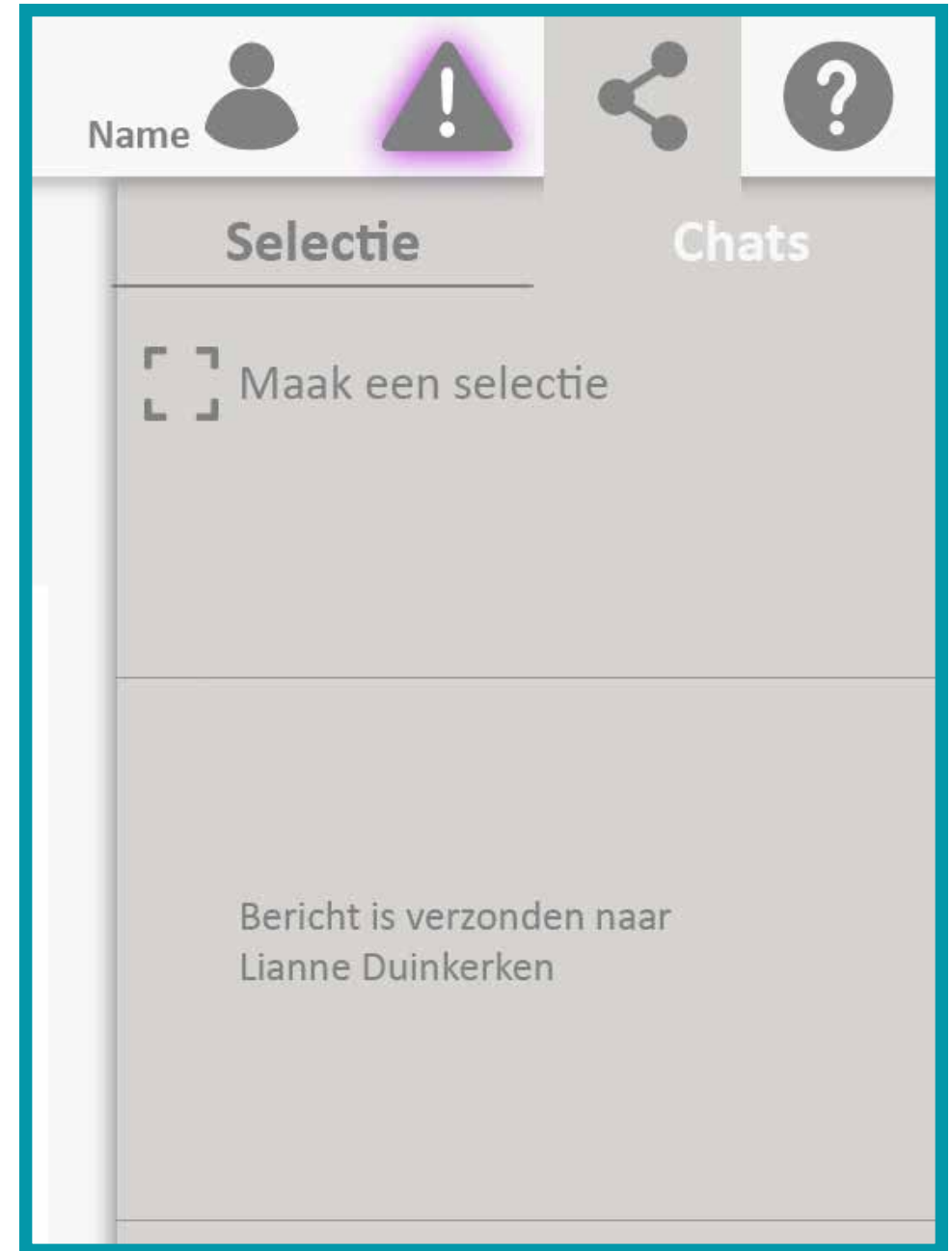


Figure 5.6:
New send confirmation

#2. Research questions

- How does the user experience the design before and after using it?
- Does the design meet the design goal and intended interaction vision?

Design goal: stimulate and facilitate CEOs by gaining insights and facilitate communication between CEOs, CFOs and HR-managers.

Interaction vision: a feeling of being in control, curious and inspired.

#2. Method

The user test was conducted by a CFO and a CEO of an elderly care organizations. (n=2, male) The design was tested via an interactive prototype on an iPad, see <https://marvelapp.com/9f2g3dj>. The prototype was made in Marvel, an online platform for creating interactive prototypes in an easy and quick way. (Marvel, n.d.) The setting simulated a meeting between the CEO and the CFO about the benchmark. Before exploring the design, the participants walked through the design via tasks. The tasklist is shorter compared to the first user test, so more time is available for non-scripted experience, a questionnaire and

open questions. Due to the simulated meeting, the participants were encouraged to discuss and think aloud during the use of the design. Appendix O contains the protocol and list of tasks.

Quantitative analysis

The user experience is evaluated by a User Experience Questionnaire (UEQ), especially designed for evaluation of user experience and validated on consistency. (Laugwitz, Held, & Schrepp, 2008; Schrepp, 2015). The questionnaire measures the experience on six dimensions, see Figure 5.7. The dimensions all answer another question using contradictions. (Laugwitz et al., 2008)

Qualitative analysis

The qualitative analysis is to deepen the results of the UEQ. Interesting quotes and actions are collected for each of the tests. To get full meaning of the actions and/or quotes by the CEOs, the insights are clustered and interpreted into paraphrases.

Figure 5.7:
Structure of the UEQ (based on model by Schrepp, 2015)



Attractiveness

Overall impression of the product. Do users like or dislike it?

annoying	-	enjoyable
bad	-	good
unlikable	-	pleasing
unpleasant	-	pleasant
unattractive	-	attractive
unfriendly	-	friendly



Perspicuity

Is it easy to get familiar with the product?

not understandable	-	understandable
difficult to learn	-	easy to learn
complicated	-	easy
confusing	-	clear



Efficiency

Can users solve their tasks with the product without unnecessary effort?

slow	-	fast
inefficient	-	efficient
impractical	-	practical
cluttered	-	organized



Dependability

Does the users feel in control of the interaction?

unpredictable	-	predictable
obstructive	-	supportive
not secure	-	secure
does not meet expectations	-	meets expectations



Stimulation

Is it exciting and motivating to use the product?

inferior	-	valuable
boring	-	exciting
not interesting	-	interesting
demotivating	-	motivating



Novelty

Is the product innovative and creative?

dull	-	creative
conventional	-	inventive
usual	-	leading edge
conservative	-	innovative

#2. Insights

Quantitative

The results of the six tested dimensions are shown in Figure 5.8. The interpretation of the scale's meaning is divided in three levels of evaluation; $< -0,8$ represents a negative evaluation, between $-0,8$ and $0,8$ represents a neutral evaluation and $> 0,8$ represents a positive evaluation. The users evaluate the design positive on all dimensions. Attractiveness, perspicuity and stimulation have the highest scores. The product is easy to get familiar with, exciting and motivating. High on the positive-scale are also efficiency, dependability and novelty. This means that the users feel in control, can interact with little effort and think the design is innovative and creative. Appendix P contains the given answers to the questionnaire.

Qualitative

The qualitative insights are clustered and divided in pains and gains. The insights support the positive conclusion of the UEQ. The users did not encounter any problems during the use an walkthrough of the design. The overall experience is positive. Quotes support the fact that the design meets their needs and it stimulates to explore the data. A pain is found

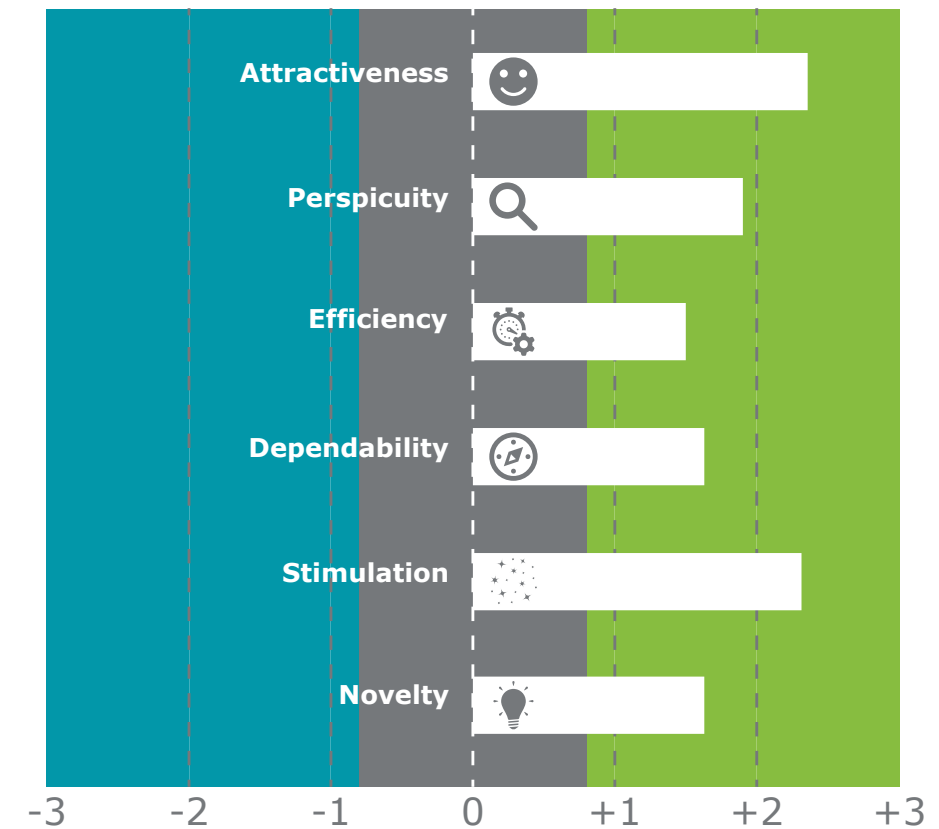


Figure 5.8: Results of UEQ

on content level, the user expects descriptions and explanations about the data; the reason of a given graphs, an explanation of terms and definitions and the origin of the data. The next page shows the pains and the gains. In appendix Q the collected quotes and insights can be found.



Missing explanations

CEO: "What does 'change' mean?" Clicks on the bar for explanation...What quotes are behind it?"

CFO: "Why are there relationships, such as the NPS vs.CQ? What is it saying?"

CFO: "Trend analysis are super interesting, but I want to know where it comes from."

Stimulates to deepen

CEO: "Is it also possible to divide product groups?" **CFO:** "Yes, by care type...Oh sorry, that is not yet responding."

CEO: "Can you select on organization level?... Oh, it's not working yet, but it's possible"

CFO: "If you know the selection options, you can make the right comparisons and know what you're looking at ... Then you can interpret more."



User friendly

CEO: "But this is just a good program, all recognizable ... That's great!"

CFO: "Nice!" Goes to new modules without problems.

CEO: "It's really a nice program ... easy to use."

Meets user needs

CEO: "These are very handy overviews, I like that!" (NPS and top 3 of open answers)

CEO: "Nice and you can also keep your selections ... Funny, convenient!" (Sending a graph)

CEO: "This is nicer and more straightforward, just the big lines and not many long stories."

Help & alert features add value

CFO: "Oh, this is an alert feature ... Here are your main concerns." **CEO:** "Oh yeah, that's really useful."

CFO: "Super, such a helpdesk How is that possible?"

Creates feeling of confidence

CEO: Navigates directly to the details of the work experience without a doubt.

CFO: "We are good! You will graduate without a doubt."

Conclusion

The design meets the design goal and interaction vision. The design stimulates and facilitates the CEO to gain insights from the data. The design provides the option of communication in an effortless way. The users experience a sense of being in control, by efficient navigation and a clear structure. The design makes them curious and it stimulates to dive into the data. The users are enthusiastic and inspired during the use and their curiosity makes them interested to dive deeper into the data.

The design has a lot of gains, but also a few pains. The pains are on content level. The CEOs want to know the definitions, goal of the data and origin of the data, which is not included in the design. The current data was not suitable for interactive data, making it is perceived as boring. Improving these pains will contribute to the comprehensibility and uniqueness of the design.

Design Goal



- Stimulate and facilitate CEOs by gaining insights
- Facilitate communication between CEOs, CFOs and HR-managers

Interaction qualities



- In control
- Curious
- Inspired

Pains



- Missing explanations of terms, definitions, goal of the data and origin of the data
- More interactive data visualization

5.2 Improvement of Actiz Benchmark Zorg 2.0

The design already meets the purpose and desired experience. Concluding from the previous section, there are two more points to improve. First, the explanation of the terms, reason and origin of the data must be present. Secondly, the data is experienced as boring. This chapter will provide options for improvement.

Explanation of terms, reason and origin

In the design an explanation of the data is already added. Figure 5.9 describes the origin, terms and definitions of the NPS. The origin is described by the asked question, the terms are explained and the structure of the NPS is described by a formula. It is recommended that an expert describe each chart in this way. However, the expert should make use of words and terms familiar to CEOs. References of public data or annual reports should be given. The CEOs would also like to know the specific values. If it is not easy to display, it can be made possible by a pop-up. By clicking, the details will then pop-up. Figure 5.10 presents this option for a trend line and Figure 5.11 for a correlation chart.

Net Promotor Score (NPS)

Gebaseerd op de vraag “Zou ik mijn familie/vrienden aanbevelen om bij mijn organisatie te gaan werken?”

Een promotor geeft een score van 9 tot 10, een criticaster geeft een score van 6 of lager. De NPS score wordt berekend door:

$NPS = Promotors - Criticasters.$

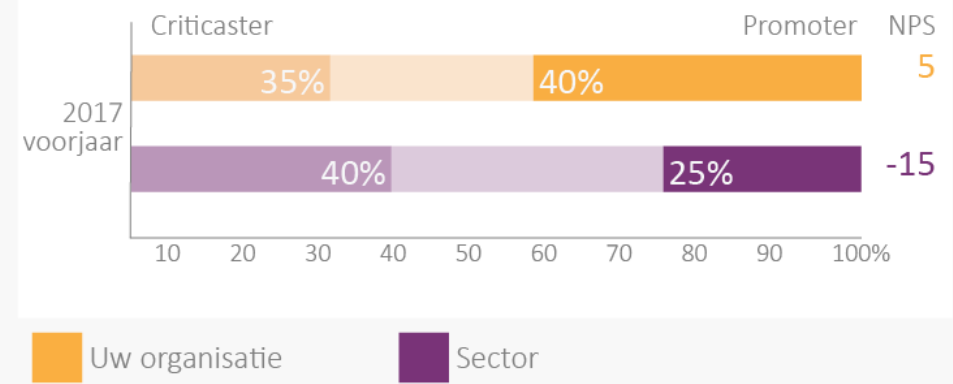


Figure 5.9: NPS with explanation

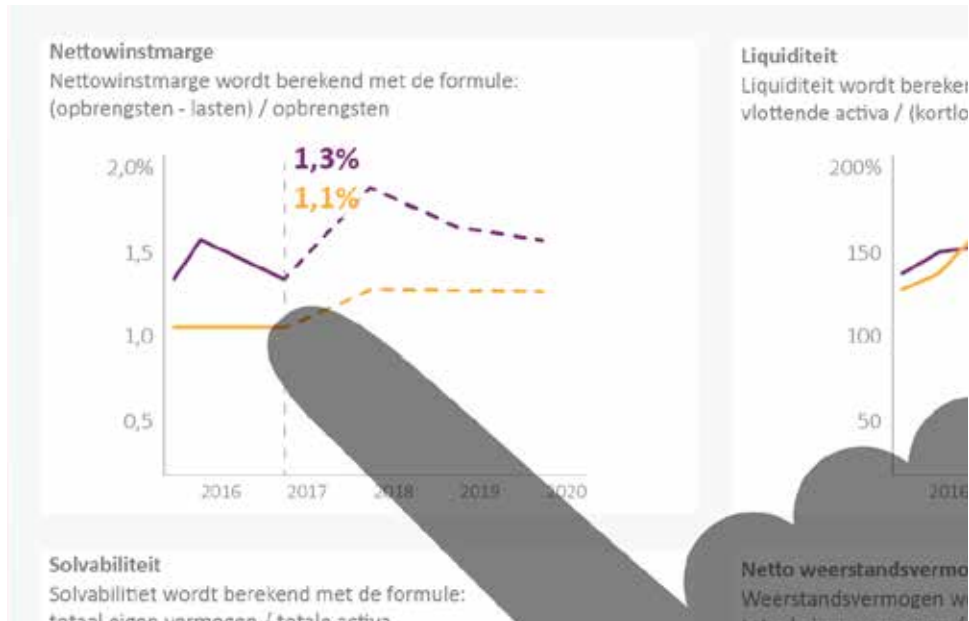


Figure 5.10: Pop-up in trendline

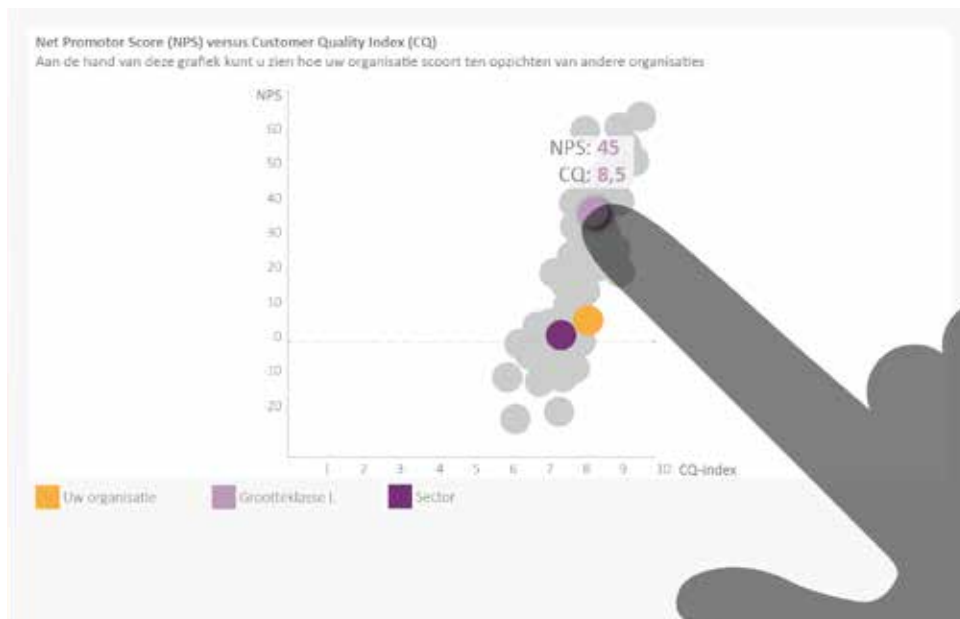


Figure 5.11: Pop-up in graph

Interactive data

The visualization of the data is experienced as 'flat' and boring. This was mainly experienced in the module of market development. The demographic data is static, but this is data which is very suitable for interactive visualization. A very suitable example is from 'de Volkskrant'. It shows the population density per municipality over the Netherlands. Moving over the map gives the data per municipality. This is also done for population growth in combination with the time aspect. See Figure 5.12 & 5.13. The created wow-factor contributes to the comprehensibility of the data. It is advisable to add such interactive elements to the market development module of the dashboard by using relevant data for the elderly care, like aging of a region.

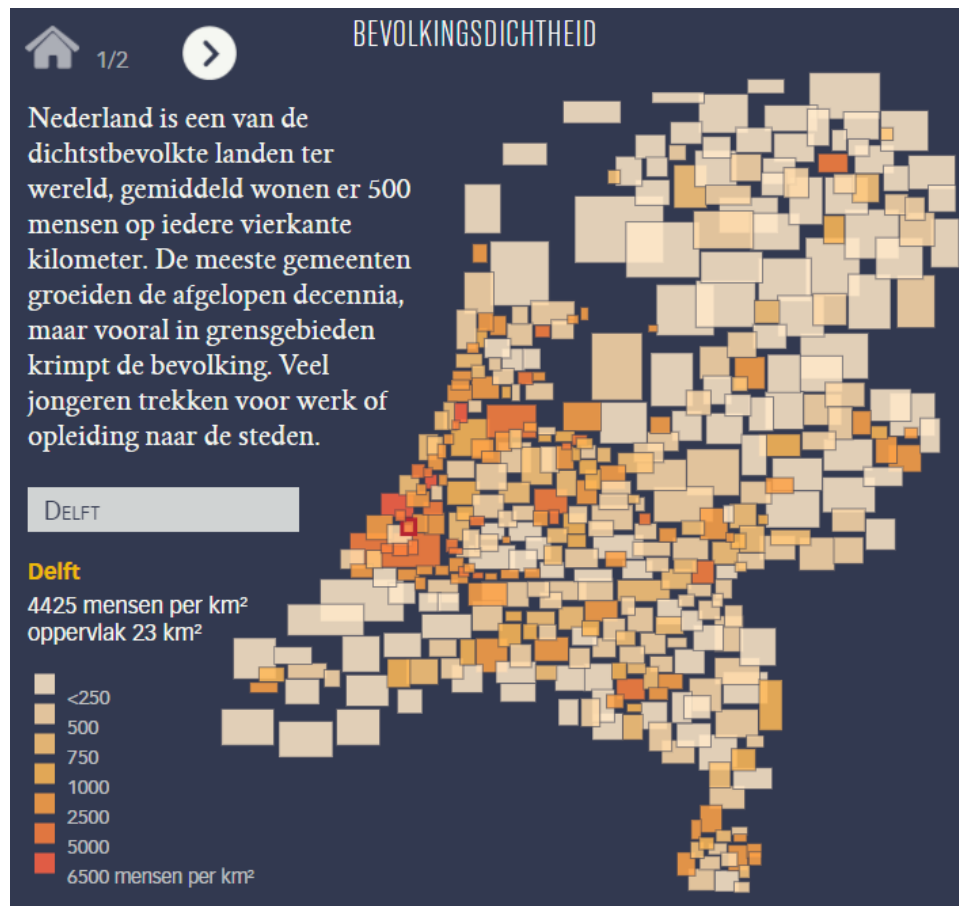


Figure 5.12:
Interactive visualization of population density (Volkskrant, 2016)

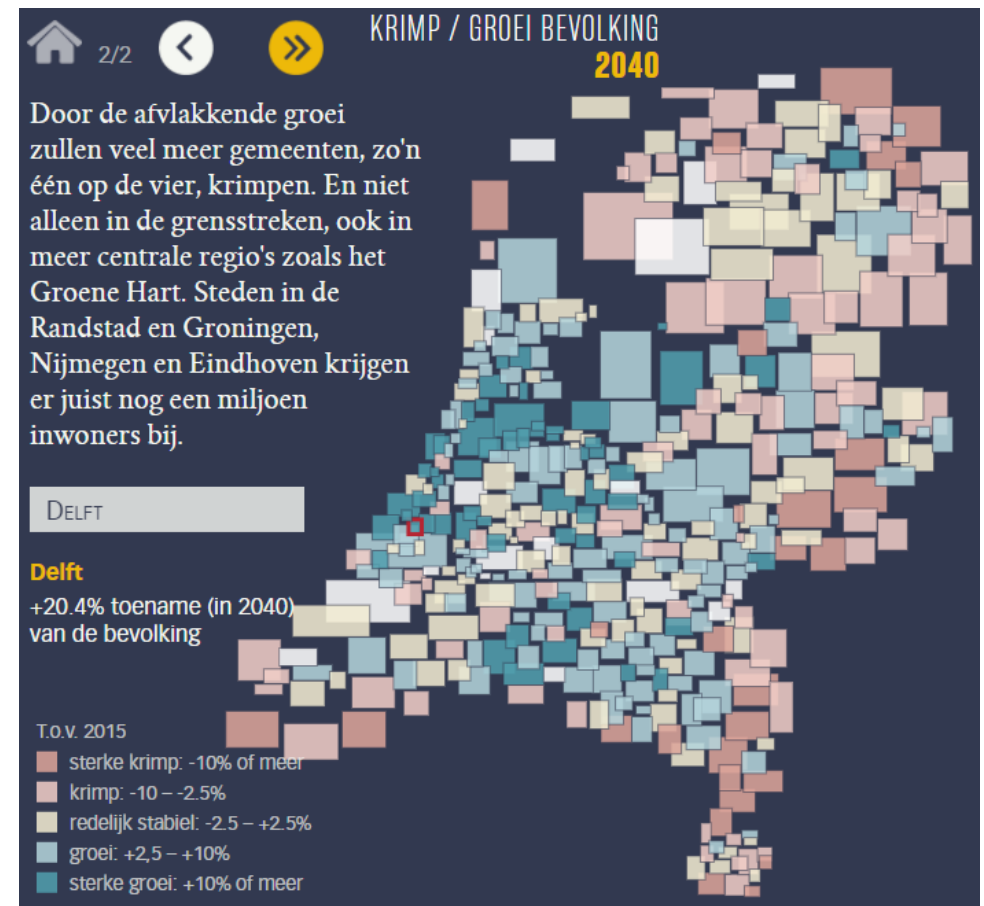


Figure 5.13:
Interactive visualization of population growth (Volkskrant, 2016)

5.3 Implementation of Actiz Benchmark Zorg 2.0

A concept road map of the development and implementation of the Actiz Benchmark Zorg 2.0 is given in this section. The future development of the dashboard will also be taken into account by the technological developments.

Road map

The road map is visualized in Figure 5.14. It is divided in three phases; research and development, implementation and constant development. The phases include key activities supported by a time indication. The time bars give an estimation of ratio and order.

1. Research and development

In phase 1, further research about the content should be conducted, executed by Deloitte and ActiZ. Deloitte can already implement the design and structure to the current dashboard. This will already improve the usability of the strategic benchmark dashboard. It is recommended to restyle the total dashboard instead of separate modules. This prevents user confusion. Then, the new styled

dashboard can be launched. This in-between launch will support the users to adopt the new dashboard. Experts should research the development and implementation of the functional options, like the communication, alert and helpdesk function. Research to the needs of other users is also necessary. The needs can be used by developing a dashboard for each of the users. User tests will support the development of the dashboards for the other users. The insights can be used for the final iterations. After the development of the dashboard for multiple users, the total design can be created for all users, including all functions.

2. Implementation

Before starting phase 2, it is desirable to do a pilot of ActiZ Benchmark Zorg 2.0. The pilot shows the use in a real context, so several organizations will use the new platform for a while. The insights of the pilot will be used for the final iteration. Does the design lead to the intended goal and desired interaction qualities? The improvements will be applied, before launching

Actiz Benchmark Zorg 2.0. The launch will be for all users and will be available on multiple devices. The users are already familiar with the system and the style. So, the launch can focus on the new features of ActiZ Benchmark Zorg 2.0, supported by a movie including explanations of the changes, improvements and functions. This will increase the wow-factor without losing the comprehensibility for the users.

3. Constant development

After launching ActiZ Benchmark Zorg 2.0, the developments should not stop. It is important to constantly develop since user needs and technologies are changing. It is important to stay informed about developments. If design adjustments are required, it is advisable to perform user tests before implementing them.

The user tests ensure that the adjustments match the user's needs. This is an iterative process.

Advice for development

The design is developed for the use on a touchscreen, because in the evaluation of interaction it was found as the next step. It is important to discover the opportunities of new ways of interaction and data communication. The added value of new technologies should always be considered; does it increase the ease of use and does it match the user needs? It is important to guide the users through the changes by taking small steps. ActiZ Benchmark Zorg 2.0 helps the user to adopt new technologies as augmented and virtual reality, while the use on a touch screen is already more intuitive.

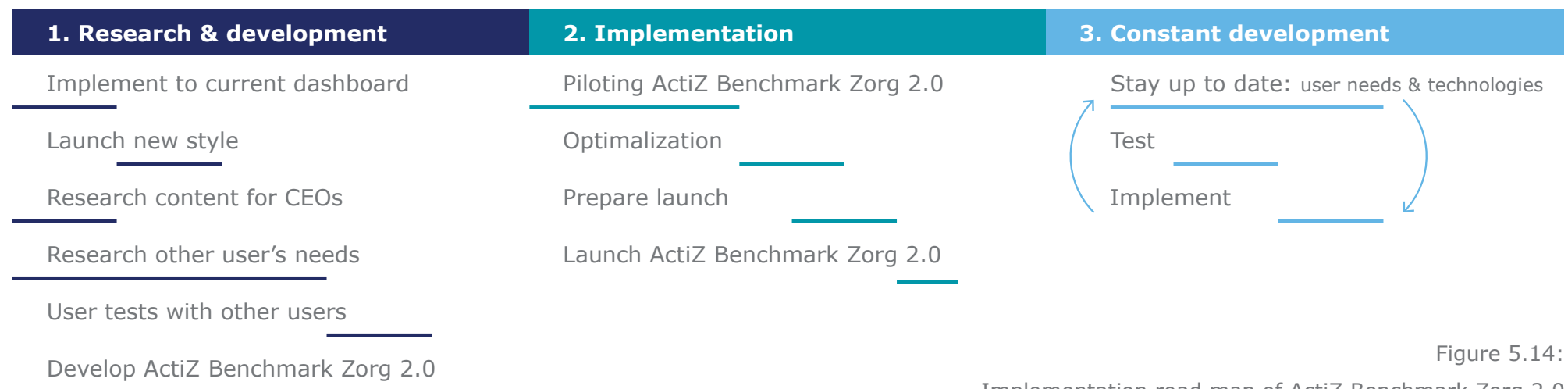


Figure 5.14:
Implementation road map of ActiZ Benchmark Zorg 2.0

A high-speed photograph of a water droplet hitting a surface, creating a crown-shaped splash. The background is a solid light blue. A semi-transparent white circle is overlaid on the left side of the image.

6

Conclusion

In this final chapter of the thesis, the project is evaluated, starting with conclusions in which a review is conducted on the link between the concept and the initial assignment. This is followed by recommendations for Deloitte. The recommendations are divided in two parts; linked to the case study and linked to coming projects. This project is finished with a personal reflection of the process throughout the project.

6.1 Conclusion

This project started with the assignment to develop a way to communicate data in 2025. The concept should provide the users, CEOs of the elderly care, insights from the strategic benchmark so it matches their needs. To narrow down the scope a case study is chosen, namely the strategic benchmark for organizations in the elderly care which is provided on an online dashboard by Deloitte and ActiZ.

After executing research and ideation, ActiZ Benchmark Zorg 2.0 is proposed as the answer to the assignment. The road to the answer started with discovering the context, talking to the users of the dashboard and researching the future opportunities in data communication. By mapping the users, their needs and their vision in combination with the opportunities of data communication, requirements and desirabilities are created. Innovations in the data communication area, like virtual reality and augmented reality, are developing quickly. The goal and the adoption for the users move slower. Decided is to design for a smart

screen, navigating by touch or voice, so a more natural interaction is possible. Data technologies become faster and more extensive, so more options are available. For example, chatbots can answer open questions and systems can warn, calculate risks and predict.

The user, CEOs of the elderly care, needs the essentials of the strategic benchmark; financial health of the organization, market development and client- and employee experience. Due to a lack of time of the CEOs the dashboard should always and everywhere be accessible on multiple devices. The interaction and navigation should be effortless and seamless. An important struggle was the inefficient communication between users about the gained insights, which was going via reports/presentations/emails. With these insights, a design goal was formulated; the design should stimulate and facilitate the CEOs to gain insights from the strategic benchmark & facilitate communication between the CEO, CFO and HR-manager of elderly care organizations about

the benchmark findings to maintain the overview. Important is the user experience, it should provide a sense of being in control, as well as being curious and inspired.

ActiZ Benchmark Zorg 2.0 is tested by CEOs of the elderly care so design goal and interaction vision could be evaluated. It can be concluded that they have been achieved. If this is the vision of data communication in 2025 remains to be seen. In the end, the user has been put central but some future aspects such as warning of data, predictive data and a chatbot have been implemented.

“ You can be proud of your work, this is a dashboard that I want to use.”

CEO of an elderly care organization

I am very proud to have been part of Deloitte Analytics & Information Management which has so much experience in the field of analysing and visualizing data. The opportunity to combine my design skills in a real case and that my insights were taken seriously feels amazing. My results are translated and implemented in the client project. ActiZ Benchmark Zorg 2.0 is more than an improvement and a vision of 2025. It could serve as an inspirational source for design thinking and user centred design within Deloitte.

6.2 Recommendations for Deloitte

Actiz Benchmark Zorg

Including and designing for other users

In this project the focus was on the CEO as end user. In an organization multiple people use the information of ActiZ Benchmark Zorg. It is advisable to interview the other users, before developing the new dashboard. The user needs become clear. The insights will be used for designing a suiting dashboard. It is advisable to quickly start testing with low fidelity prototypes, as in this project used during ideation. Or even organize a brainstorm with the users.

Testing for a longer period of time

In the evaluation test a high fidelity prototype available on an Ipad was being used, but this does not provide the total journey of using the strategic benchmark. Doing a pilot for a longer period of time could be necessary in order to discover the experience and user-friendliness of the product. The total use of Actiz Benchmark Zorg in an organization also mapped this way.

Upcoming projects

Start with the user

Before the message or goal is set for the dashboard. It is important to know for who a dashboard is created. Who is the end user and what does he/she need? To answer this questions contact with the users is needed and for the developing of a dashboard vary valuable.

Set a goal before designing dashboards

Based on the user needs a clear vision for the dashboard should be created before the content of the dashboard is created. A customer journey will be the guideline for designing the dashboard and its content. By doing this, the structure of the dashboard stays clear and unnecessary fuss is excluded. After setting the goal can be started with the 10 commandments, Figure 6.1.

Prototype and test

During the development of a dashboard it is important to test the design. Before testing, make clear what the reason is for testing. What do you want to know? It is not always necessary to go to the end user for testing. Paper prototyping is an easy, cheap and quick way to test the usability and user friendliness. To test the user experience it is necessary to simulate the real context as well as possible.

Innovate and develop

The field of data communication develops and innovates quickly. It is important to stay up-to-date. Deloitte needs to stay a head of the competition by constant development of their skills. This does not necessarily mean that every development should be implemented in a design. The recommendations as stated should be taken into account. Does the development fits or even enriches the dashboard's goal and user experience?

The 10 commandments

Follow the following rules to create an effective and user friendly dashboard



Figure 6.1:
10 commandments for dashboard designing
(Deloitte the Netherlands, 2016)

6.3 Personal reflection

During the process of graduating I learned and developed myself a lot. Although the project is not yet finished, just the defence left, I will end this report with a personal reflection. Looking back, I can confirm it was an exciting roller coaster. It was my first project in the field of data, the first time working in a company and the first time creating and leading my own project.

The project and the past months were a challenge. Sometimes during the project, I felt like I was swimming forever. At this moments, I looked for friends, colleagues. We talked and discussed about project related topics, to organize my thoughts. This helps me by making decisions. After this project, I can confidently say I like to work together on projects. Also the passing of loved ones caused a labile situation as well as me losing the goal of graduating. With much support and motivation to complete my study, I managed to pick up the thread again. After this I worked very hard and efficiently on my project. Space to think freely

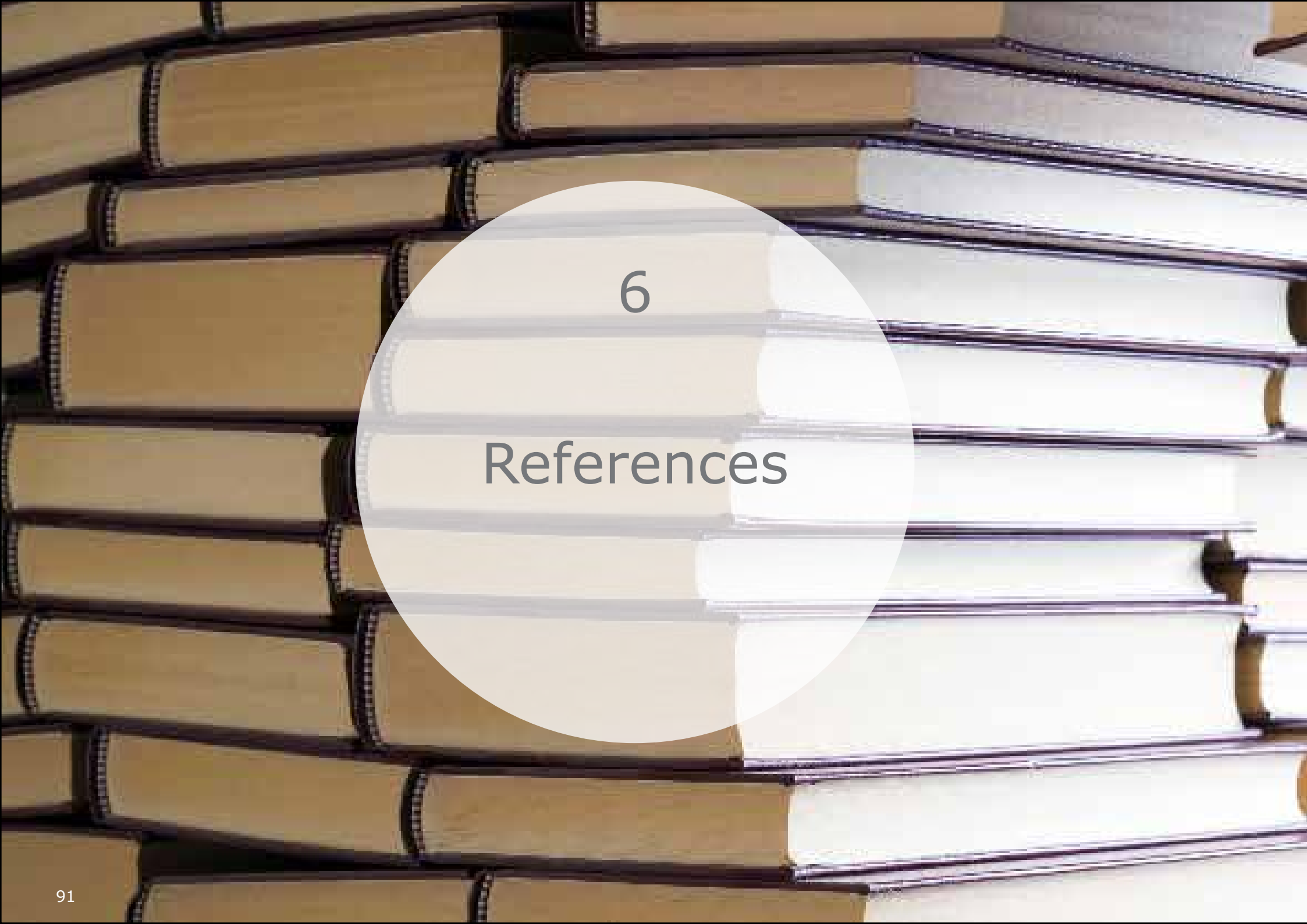
and visionary was hardly present. In future projects, I hope to use and show this visionary thinking more. This resulted in an efficient approach with little loss of time. Off course I experienced hard times and chaotic periods, which are needed in an iterative process.

An important goal for myself was to have no stress from this project. Wonderfully, I did not experience this during my graduation. I had clearly in mind what I had to do and how much time I needed for this. Due to clear goals and deadlines, I was in control of the project. My mindset was set for a stress less graduation, which was an amazing feeling. A created habit during the past months; being one with my environment and enjoying the little things. The walk from train station to the office was a moment of rest, I did not allow myself to think about what to do. In future projects I hope to keep this mindset, also by staying in control by creating an overview and in-between planning.

Starting by Deloitte Analytics Information & Management team as a stranger in our midst, an interaction designer, made sure I know what I can and where my strength lies. It is amazing to talk to the end users, have discussions with experts about innovations, data visualization and the context of ActiZ Benchmark Zorg, to involve my colleagues via paper prototyping and visit CEOs of the elderly care to show and test the end result. The fact that Deloitte's team working for ActiZ involved me in the project and made already improvements based on my insights gives me the feeling that I left more behind than just a report about this project.

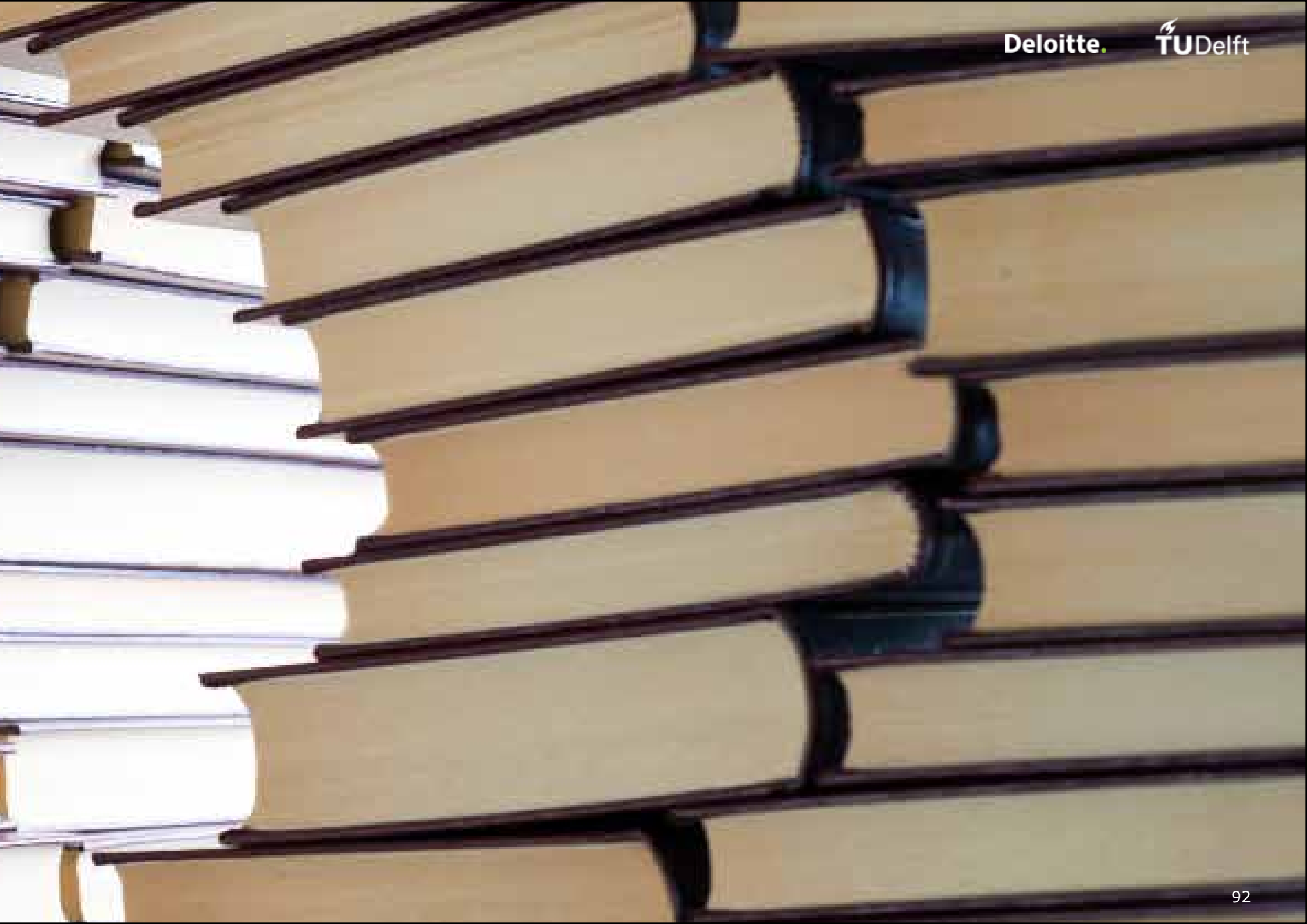


Figure 6.2:
My peaceful walk to The Edged



6

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Designing data communication for ActiZ Benchmark Zorg

Lianne Duinkerken, September 2017