

# SUBMISSION OF WRITTEN WORK

Class code:

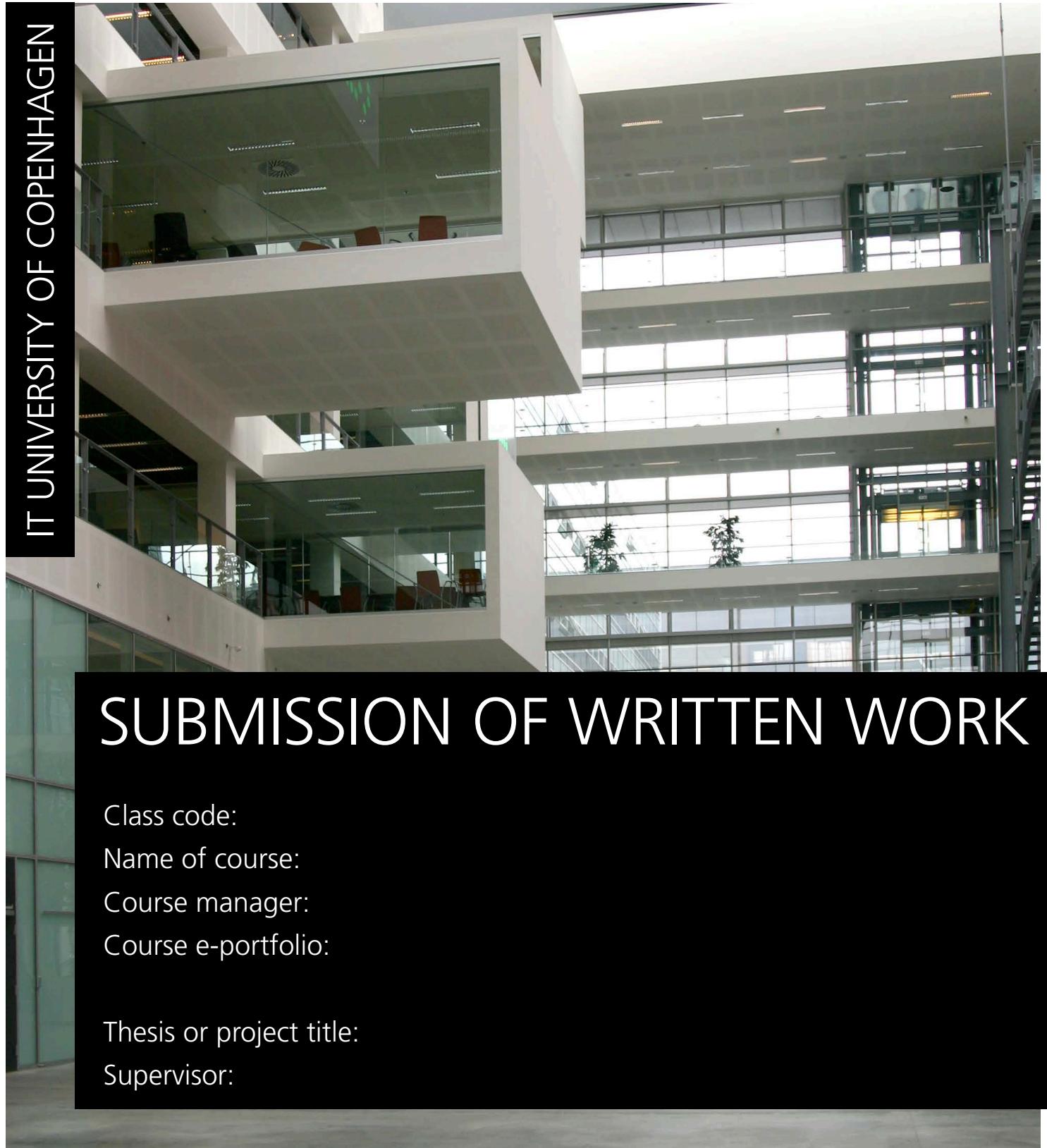
Name of course:

Course manager:

Course e-portfolio:

Thesis or project title:

Supervisor:



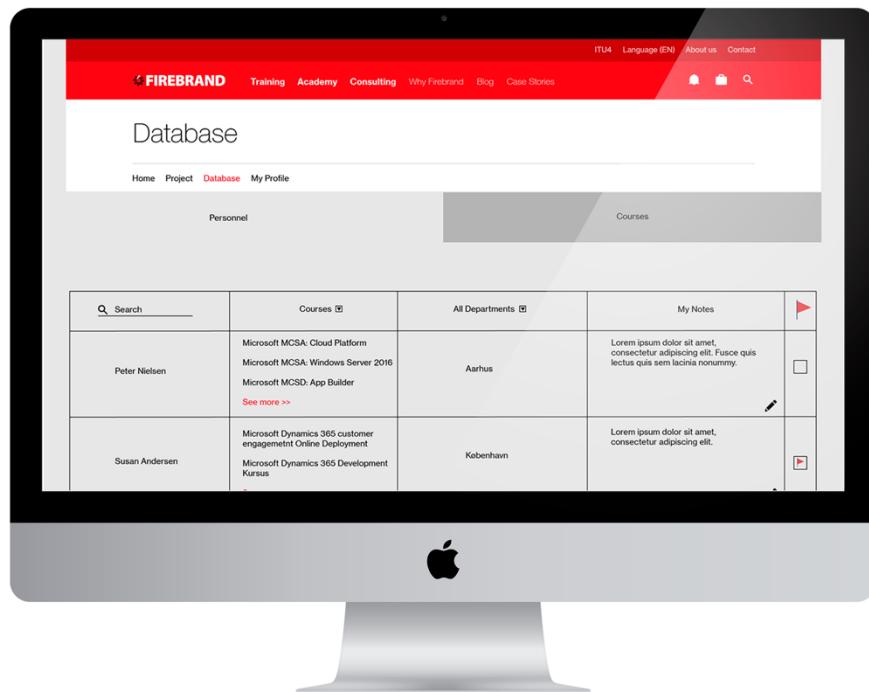
Full Name:

Birthdate (dd/mm/yyyy): E-mail:

1. \_\_\_\_\_ @itu.dk  
2. \_\_\_\_\_ @itu.dk  
3. \_\_\_\_\_ @itu.dk  
4. \_\_\_\_\_ @itu.dk  
5. \_\_\_\_\_ @itu.dk  
6. \_\_\_\_\_ @itu.dk  
7. \_\_\_\_\_ @itu.dk

# Customer Reporting

Concept Development with Industry



# Table of Contents

<b>1. Introduction .....</b>	<b>3</b>
1.1 Case description .....	3
1.2 Glossary .....	5
1.3 The concept: CustomerReporting.....	6
<b>2. Research design .....</b>	<b>8</b>
2.1 The interviews.....	8
2.2 Business Model Canvas.....	8
2.3 Value Proposition Canvas.....	10
2.4 Gaining customer insights .....	11
<b>3. Theoretical Framework.....</b>	<b>12</b>
3.1 Visual gestalt principles .....	12
3.2 Norman's Design principles.....	13
3.3 Sketching & wireframing .....	14
3.4 Testing .....	15
<b>4. Analysis of Firebrand and customers .....</b>	<b>16</b>
4.1 Understanding Firebrand .....	16
4.2 Understanding the customers .....	18
4.2.1 Interview guide .....	19
4.2.2 Key findings.....	19
4.3 Customer segment .....	22
<b>5. Concept development .....</b>	<b>23</b>
5.1 Gantt chart .....	24
5.2 Designing our concept.....	25
5.3 Testing our concept.....	27
<b>6. Features of CustomerReporting .....</b>	<b>28</b>
6.1 Features .....	29
<b>6. Concept analysis .....</b>	<b>33</b>
6.1 The revised business model.....	33
6. 2 Our concept in the Value Proposition Canvas. ....	35
6.3 User Interface.....	37

<b>7. Discussion .....</b>	<b>37</b>
<b>7.1 Technical aspects of CustomerReporting .....</b>	<b>37</b>
<b>7.2 Discussion of Customer Segment .....</b>	<b>38</b>
<b>7.3 Reflections on testing .....</b>	<b>38</b>
<b>8. Conclusion .....</b>	<b>40</b>
<b>9. Reference list .....</b>	<b>41</b>
<b>10. Appendix .....</b>	<b>42</b>
<b>Appendix 1: Final sketches of CustomerReporting.....</b>	<b>42</b>
<b>Appendix 2: Interview guide.....</b>	<b>50</b>
Who are we? .....	50
Case description: .....	50
Interview guide for the semi-structured interview: .....	50
<b>Appendix 3: Test guide .....</b>	<b>52</b>
<b>Appendix 4: Recordings .....</b>	<b>53</b>

# 1. Introduction

Today the success of a business is highly influenced by their availability online. Online digital systems are expected to provide valuable information instantly. Furthermore, they need to have an appropriate, pleasing design, in order to accommodate the desires of the user (Schlatter & Levinson, 2013). These expectations have influenced the market and forced companies to adopt and customise digital systems. The web is now most businesses' primary platform for customer communication. This presents a variety of possibilities for satisfying a customer's needs, particularly those regarding communication.

Firebrand Nordic A/S (henceforth referred to as Firebrand) is a Danish company, that trains and certifies thousands of individuals and businesses in specialised areas of IT and management. They do this by providing a range of courses, led by expert instructors. Firebrand is aware that for their business to succeed, online communication is essential. Therefore, they intend to further develop their existing website, to provide their customers with valuable information about the training of their customer's employees. Currently, the managers in a company have accounts on Firebrand's website. These managers can use their account to view courses their employees have attended in the past and those they can attend in the future. Firebrand is aware the functionality of these accounts could be expanded, in order to visualize more data that would be of use to their customers. This would enable Firebrand to provide a better service to their customers and, as a result, improve their business.

## 1.1 Case description

For the past months, we have been working closely with Firebrand, designing them an extended account platform for their customers. The communication between Firebrand and customers is mainly existing by phone, e-mail and through their website. On Firebrand's website, the companies have their own account, which the manager has access to. This account currently provides the managers with a limited amount of information regarding the courses their employees have taken and are to take in the future. The managers' current interactions with Firebrand's services are as follows:



Figure 1: The current user journey

When managers send their employees on courses, Firebrand collects a range of data, for instance pass rates, attendance and testimonials. All this data is stored in Power BI, a Microsoft developed data analytics system. This is not currently accessible by Firebrand's customers, however, this could provide them with valuable insight into the performance of their employees. Firebrand wants to be more transparent with respect to their data, by surfacing it to their customers. They currently do not know what data could be of value to their customers. Therefore, Frank Højgaard, the CEO of Firebrand, defined the case as follows:

*How do we build a compelling UI with Dashboards and progress reports on main objectives and integrate them into our current environment, based on the data customers want and need to help them make better decisions for their businesses?*

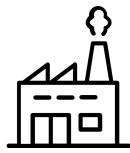
Our task was to examine the needs of Firebrand's customers and determine what features they desire in this extension of Firebrand's current account system. Firebrand wanted us to not only use the data from the Power BI, but also discover what other data their customers might want access to. In this case, we create value for Firebrand by investigating the needs of their customers.

Given the task and undertaking some initial research within the field of Firebrand's business, we developed the following research question:

*How can we create a user interface, which provides a variety of Firebrand Nordic's customers with their employees' data in a logical and useful manner, that will also be beneficial for Firebrand Nordic's business?*

## 1.2 Glossary

The following section is to define a shared language between author and reader. We will describe elements within our case, that can be misinterpreted if not introduced and explained properly. We will create an understanding of what services Firebrand provides and how their customers use these services.



The **customers** are companies that use Firebrand's services of providing courses to improve the knowledge of their employees. Customers both consist of relatively big companies with for instance 200+ employees and smaller ones with only around 20 employees.



Throughout this project, we have talked to **managers** of different companies (customers). The managers govern their company's use of Firebrand's services and it is their responsibility to keep track of the courses and how their employees are doing in regards to their training.



**Courses** are run by Firebrand. They consist of a series of training sessions focused on a broad range of subjects within IT and management. Typically, they include online learning material (e-learning) that is available for the employees before their courses. This is often short videos explaining a specific subject further. If the employees pass a course, they get a certificate.



The **employees** take courses in order to achieve certification and develop their skills in a particular area of IT or management. The employees are sent to courses by their manager.



Firebrand and their customers can set up a **project**, to help the customer achieve a desired goal related to the training of a team of their employees. To give an example: A company is launching a new product that requires a number of their employees to gain knowledge, about IT security and project management. The company contacts Firebrand and in collaboration they enrol their employees' courses, which will help the employees achieve the desired learning goals.

### 1.3 The concept: CustomerReporting

Through working with Firebrand's challenge of providing their customers a more valuable user interface the concept, *CustomerReporting*, was developed. Our concept is an extension of the existing online account system on Firebrand's website. It includes various new features that the customer's managers can access easily and at their own convenience. CustomerReporting consists of four different pages each containing relevant information on a company's training of employees. The four pages are named "Home", "Project", "Database" and "My profile". The following section will briefly describe what data is presented on each page and how this is relevant to a customer of Firebrand.

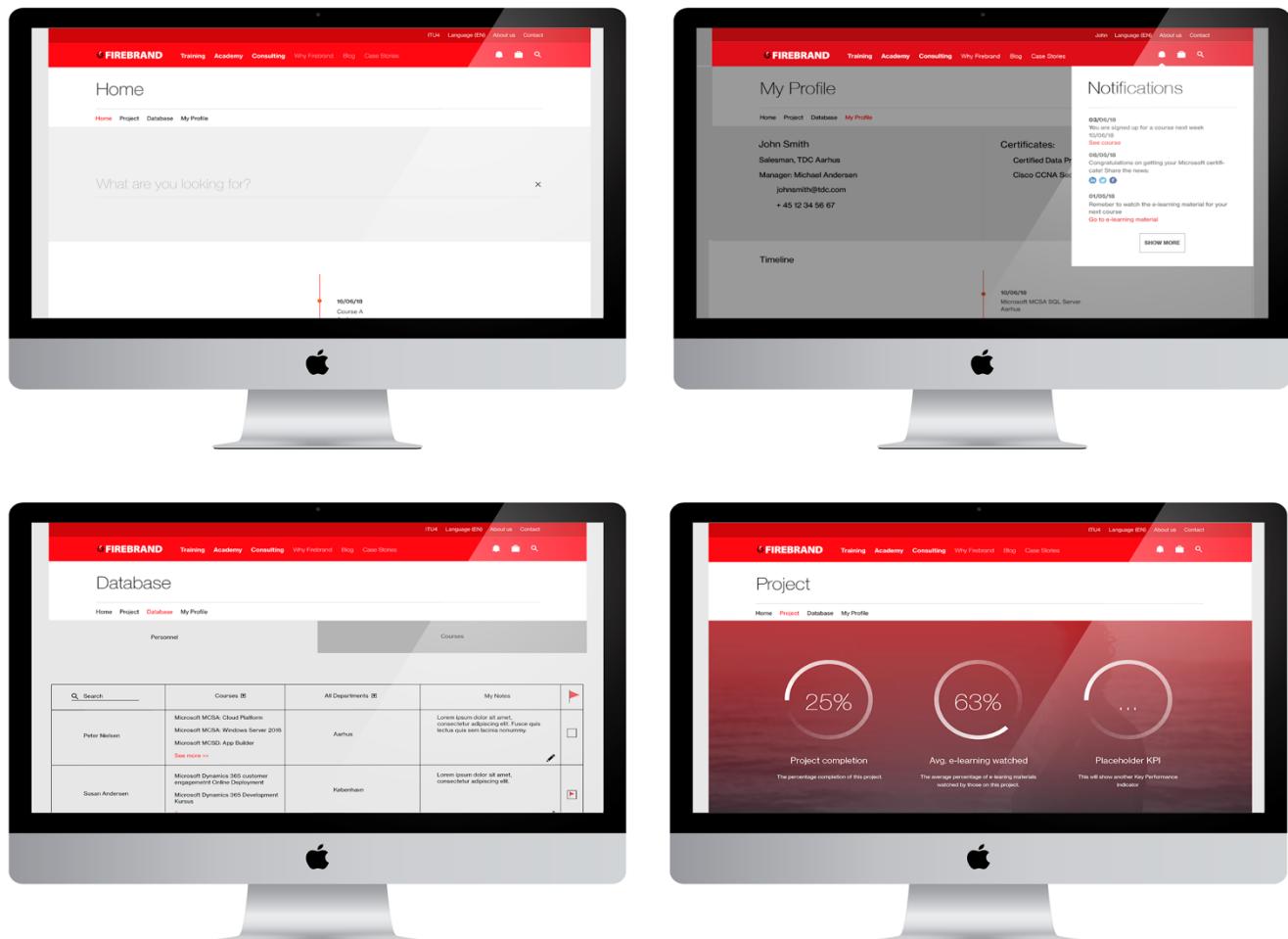


Figure 2: A visual extract of the four pages. To see full extension of all sketches, see appendix I

## Home

The first page managers see when logging into the account is 'Home'. On this page, the managers are presented with different key performance indicators<sup>1</sup> (KPIs), a timeline and a comparison tool. These give an overview of planned activities and statistics about training in the company in general, such as courses planned for employees and general pass rates for the company.

## Project

This page provides the details related to a particular project. Here, features such as the timeline and the KPI's are shown, but only in relation to a specific project. The details are customised for the specific project and are intended to highlight matters of significance to the managers in charge of the project.

## Database

This page is designed for the managers to view all the data they can access. Here, they can see every piece of data regarding their employees and every course Firebrand offers. This could for instance be an employee's name, contact information and the certificates the specific employee has obtained at the moment. Each course and employee is clickable and lead the managers to the appropriate employee page or the course page that we have designed.

## My Profile

This page contains information about the represented manager. It shows the manager's own certificates, a timeline with upcoming courses and KPI's presenting different stats on the manager.

A more detailed description of the design of CustomerReporting and each feature on the pages will be elaborated on later in this report.

---

<sup>1</sup> Fitz-gibbon defines KPIs as follows: "A performance indicator can be defined as an item of information collected at regular intervals to track the performance of a system" (Fitz-gibbon, 1990).

## 2. Research design

In the following section, we will explain the approaches used in the creation of our concept. Many methods were employed throughout this project, however, the research was primarily based on the *Value Proposition Canvas* presented in Value Proposition Design (Osterwalder et al., 2014) and the *Business Model Canvas* from Business Model Generation (Osterwalder & Pigneur, 2010).

### 2.1 The interviews

The primary method used to collect data in this project was qualitative interviews. The purpose of this method is to gain a better understanding of the thoughts and reflections of the target group (Brinkmann & Kvale, 2015). According to Brinkmann & Kvale (2015) it is important to make an interview guide in order to get a better overview of what sort of questions one would ask the interviewees and within what methodology. We defined a number of research themes, which then was translated into relevant interview questions (see appendix 2). This is done as the questions within the research theme rarely function well as interview questions (Brinkmann & Kvale, 2015). Furthermore, rather than relying on a strict script, the interviews were conducted in a semi-structured manner, allowing us to spontaneously ask follow up questions based on the interviewee's prior responses. This decreased the chance of missing important information as it allowed for further investigation into alternative, unforeseen areas (Blomberg et. al, 2003). By conducting semi-structured interviews, we thus gained a deeper insight into our target group and their needs, which directly shaped our concept.

### 2.2 Business Model Canvas

The Business Model Canvas is used to understand a business and develop an understanding of a specific business structure, as well as its functions. Osterwalder and Pigneur's (2010) business model consists of nine different building blocks: *Key Partners*, *Key Activities*, *Key Resources*, *Value Propositions*, *Customer Relationships*, *Channels*, *Customer Segments*, *Cost Structure* and *Revenue Streams*. The following table defines each block and how each is relevant when gaining a deeper understanding of a business.

Building block	Definition
Key Partners	The companions of suppliers and partners that make the business model work.

Key Activities	The most proficient activities that a company undertakes to operate successfully.
Key Resources	These are the most important resources that a company needs in order to maintain their Customer Relationships, create value and earn revenue. It can take a physical, financial, intellectual or human form.
Value Propositions	The products or services that generate value for a company's customers. The Value Propositions are created specifically for a certain Customer Segment in order to meet these customers' needs.
Customer Relationships	The relationship that a company establish with their Customer Segment. Customer Relationships are divided into different types of relationships specific to each Customer Segment.
Channels	The different ways a company communicates with their Customer Segments to provide a Value Proposition. The channels have several purposes that vary from evaluating a company's Value Proposition to deliver a Value Proposition to the customers.
Customer Segments	The customers, are the target group of the company. It is important to define the Customer Segments in order to create the most beneficial Value Proposition.
Cost Structure	The costs that a company has in order for the business model to work.
Revenue Streams	The monetary income generated from each Customer Segments.

Figure 3: A table defining the nine different building blocks of the Business Model Canvas (Osterwalder & Pigneur, 2010)

These nine different blocks of the Business Model Canvas should not be seen as independent blocks of the business, but as a whole in which they all depend on and influence each other (Osterwalder & Pigneur, 2010). For instance, if a company's channels are changed from email based correspondence to social media based correspondence, this could potentially create changes in The Customer Segment. The segment might change from just adults to also incorporate a younger segment.

Two of the blocks, Value Propositions and Customer Segments, are what makes the Value Proposition Canvas. In order to develop a successful concept, it is important that you are able to understand the pains and gains of your Customer Segments and how Value Propositions can be optimized in the best possible way (Osterwalder et al, 2014).

## 2.3 Value Proposition Canvas

As mentioned in the section above, it is important that you gain insight into who you are designing for and what would be of value to them. Their jobs may involve challenges that a designer would not anticipate. In relation to this, it might be difficult for a designer to get an overview of how a proposed design could help create value for the targeted group (Osterwalder et al, 2014). A tool that can help with this is the Value Proposition Canvas. The Value Proposition Canvas is a model that enables a business to validate if the Value Proposition fits the Customer Segment's needs (Osterwalder et al, 2014).

The canvas consists of the Customer Segment (right side of figure 4), that describes the context in which the targeted group works. Furthermore, it identifies what difficulties they experience and what their desired outcome is within this context. Osterwalder describes these as the *job contexts*, *customer pains* and *customer gains* (Osterwalder et al, 2014).

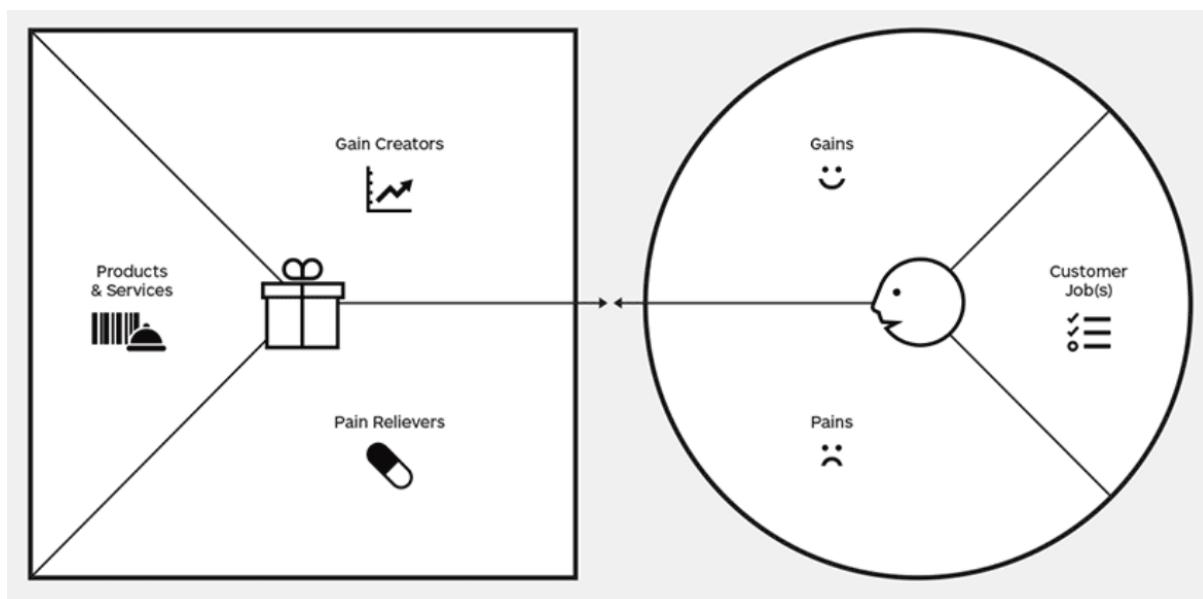


Figure 4: The Value Proposition Canvas consists of both Customer Segment and Value Map

Besides the Customer Segment, the Value Proposition Canvas also consists of a Value Map (left side of figure 4), which describes the product that a customer is offered and how this product can create value by offering what Osterwalder calls *pain relievers* and *gain creators* (Osterwalder et al, 2014).

The purpose of completing the canvas is to create a fit between the Customer Segment and the Value Map. This helps the designer to see if the product accommodates the customers' pains and gains, and thereby creates value for the targeted group.

## 2.4 Gaining customer insights

To fill out a Value Proposition, it is suggested one uses six different types of research techniques, that can help you understand the customers, their jobs, the pains and the gains (Osterwalder et al., 2014). We will elaborate on three of the techniques, which we found relevant whilst investigating Firebrand and their customers.

Icon	Technique	Explanation
	The data detective	This technique describes how you can use desk research to build on existing work. This might be research reports or prior customer data, that has been provided to work from. The data detective technique is useful early in the process, to gain insights into customer pains and gains.
	The journalist	This technique is described as an easy and cost effective way to gain relevant customer insights by talking to potential customers. Interviewing customers is a well-established practice, however, it is not without complications because the customers' answers may be different to how they behave in the real world.

	The scientist	<p>This technique gets the customer to participate in an experiment. This, provides fact-based insights that helps you to learn more about your customers.</p>
---	---------------	--

Figure 5: Accountant of three different techniques of research (Osterwalder et al., 2014, p. 106-107)

We used these three techniques throughout our design process to get a greater understanding of our Customer Segment and their needs. We will elaborate on this later in the report.

### 3. Theoretical Framework

In this section, we will account for the theoretical framework that has been used to form our concept. The theories consist of design related work to substantiate our decisions with regards to the visual aspects of CustomerReporting, such as the visual gestalt principles laid out by Lisa Graham (2008) and Don Norman's (2013) take on graphical user interface. Furthermore, we will explore theories regarding sketching and testing.

#### 3.1 Visual gestalt principles

*Ignoring Gestalt visual theory may result in unexpected interpretations by the reader, and therefore impede clear communication (Graham, 2008, p. 1).*

Gestalt is a German word which when translated means configuration. The theory comes from the field of psychology, but has had a big impact on many disciplines such as human computer interaction and visual design. Designers have been interested in gestalt theory because it is useful in explaining human perception and people's tendency to group visual elements (Graham, 2008).

There are many different gestalt laws. According to Graham (2008) some of the most visually important are described as follows:

Law	Explanation
Figure/ground	There should be contrast between background and foreground to make certain items visible.
Proximity	Items placed closer to each other provides meaning, enabling the observer to understand an element as part of a group.
Closure	When information is missing, humans have a tendency to visually close the gaps, especially in familiar forms, to complete the form which has been identified.
Similarity	Items, which appearance is similar, for example shape, colour, form are understood as part of a group.
Continuation	Humans have a tendency to search for relationships between shapes. One example of Continuation is when the eye follows along a line, curve or a sequence of shapes.

Figure 6: Explanation of visual gestalt principles (Graham, 2008)

These visual gestalt principles are useful when designing a user interface. By applying these principles, it helps the designer to place and form items, to give the user an understanding of what is coherent and what is not; supported by scientific research on human perception (Graham, 2008). Furthermore, it is important to note that even though the principles are described separately, they are interconnected and rarely only one can be applied when designing (Williams, 2015).

### 3.2 Norman's Design principles

Don Norman is an American computer scientist and professor that has written several books on different design principles, here among *The Design of Everyday Things*. He specialises in design, but also has a great interest in cognitive practices and how these should influence a designer's way of thinking. In the book, he explains the different principles that a designer should think about when creating a design. He incorporates different elements from cognitive psychology and uses this to argue for his design principles. He also mentions how emotions and human's reflective practices affects how we interpret design and how we take action (Norman, 2013).

In Norman's chapter about human-centered design he states that this type of approach is a philosophy. He argues that to create a good design, you need a good understanding of the people who are to use it.

*Human-centered design (HCD) is the process of ensuring that people's needs are met, that the resulting product is understandable and usable, that it accomplishes the desired tasks, and that the experience of use is positive and enjoyable (Norman, 2013, p. 219).*

To accommodate this, he details the following elements that should be considered when designing for people.

### Signifiers

When creating a graphical interface for screens, the designer needs a way of telling the user what can be done to the interface – for instance what can be clicked upon, what can be expanded and so on. Signifiers is what communicates where actions can take place. They can be both intentional and unintentional (Norman, 2013). An intentional signifier could be the word “PUSH” on a door, whilst an unintentional signifier could be a visible trail of footsteps made by people repeatedly having walked in the same trail (Norman, 2013).

### Mapping

Mapping has to do with conceptual models. It is a term originally used in mathematics, meaning the relationship between two elements (Norman, 2013). Mapping is very important when designing a layout of controls and displays. Mapping uses spatial correspondence between layout and affordances in a design and if this is done properly, it is easy to determine how to use the controls. This can also be related to the gestalt principle, proximity, which we defined as items placed close to each other to make the user see them as part of a group. Related controls should be grouped together to make sure that the user knows they are somehow related.

## 3.3 Sketching & wireframing

In our project, different design techniques have been used to develop the concept. The most substantial is wireframing. The following section will define the difference between a sketch and a prototype as well as account for wireframing.

### Sketching

Buxton (2007) defines sketches as a tool to use in the early ideation stages of the design process, as their purpose is to explore design possibilities, rather than confirm design solutions. When creating

sketches, he argues that they have to be quick, inexpensive and disposable, thus pencil and paper are preferable (Buxton, 2007). The aim of creating sketches are to avoid committing to an idea too early in the process as well as keeping an open mind for new suggestions (Buxton 2007).

As the design process continues to the later stages, prototypes should be created instead of sketches. The investment in prototypes are larger, making them difficult to dispose, thus fewer are created. The ones created are often more specific and refined, which is a better format for evaluating the design with a user. Furthermore, a prototype describes a design solution in contrary to sketches that suggest design possibilities (Buxton, 2007).

### Wireframing

When creating CustomerReporting, wireframing was a substantial tool. Wireframes are a technical document with lines, boxes and labels to show how a site will work (Marsh 2016). Their purpose is to tell the designer how to execute the design and to get a visual overview of the structure of the design (Marsh, 2016). The best wireframing tools are often pencil and paper but at some point, it is needed to be more specific and technically accurate thus digital tools such as Adobe's Illustrator software is required (Marsh, 2016).

## 3.4 Testing

Testing is a way to validate the designers' beliefs regarding how a system should work, but the designer's solution may not be what the end-user find most relevant. This is why it is important to do testing.

*Testing reminds you that not everyone thinks the way you do, knows what you know, uses the Web the way you do (Krug, 2006, p. 134).*

As Krug states, testing is important in order to create the most valuable system for the those who are going to use it. The assumptions the designer has before a test might not be accurate in regards to the users' needs, and the system may function in a different way in practice.

To execute a usability test, Dumas and Redish have described five characteristics of every usability test in *A Practical Guide to Usability Testing* (1999):

1. The main purpose is to improve the usability of a product.
2. The participants of the test shall be the intended users.
3. The participants are doing real tasks.

4. To observe the participants and record/note down their feedback.
  5. To analyse the data from recordings and notes based on the observations to find the problems and implement new changes.
- (Dumas and Redish, 1999, p. 22)

Usability means that the users of the product can execute their tasks quickly and easily. “Users decide when a product is easy to use” (Dumas and Redish, 1999, p. 4.). The main purpose of executing a usability test is to improve the usability of the product that is being tested. Another important factor of testing is not only to improve the product, but also to make the process of designing and developing the product easier (Dumas and Redish, 1999).

## 4. Analysis of Firebrand and customers

In the following section, an analysis of Firebrand and their customers will be presented. First, we will investigate the current business model of Firebrand. Secondly, a Customer Segment will be created based on desk research and interviews that we conducted ourselves.

### 4.1 Understanding Firebrand

To understand how the business of Firebrand functions, we filled out the nine different building blocks in the Business Model Canvas. The model was used as it helps the researcher understand how a company generates value, how the company earns money, and what costs it has (Osterwalder & Pigneur, 2010).

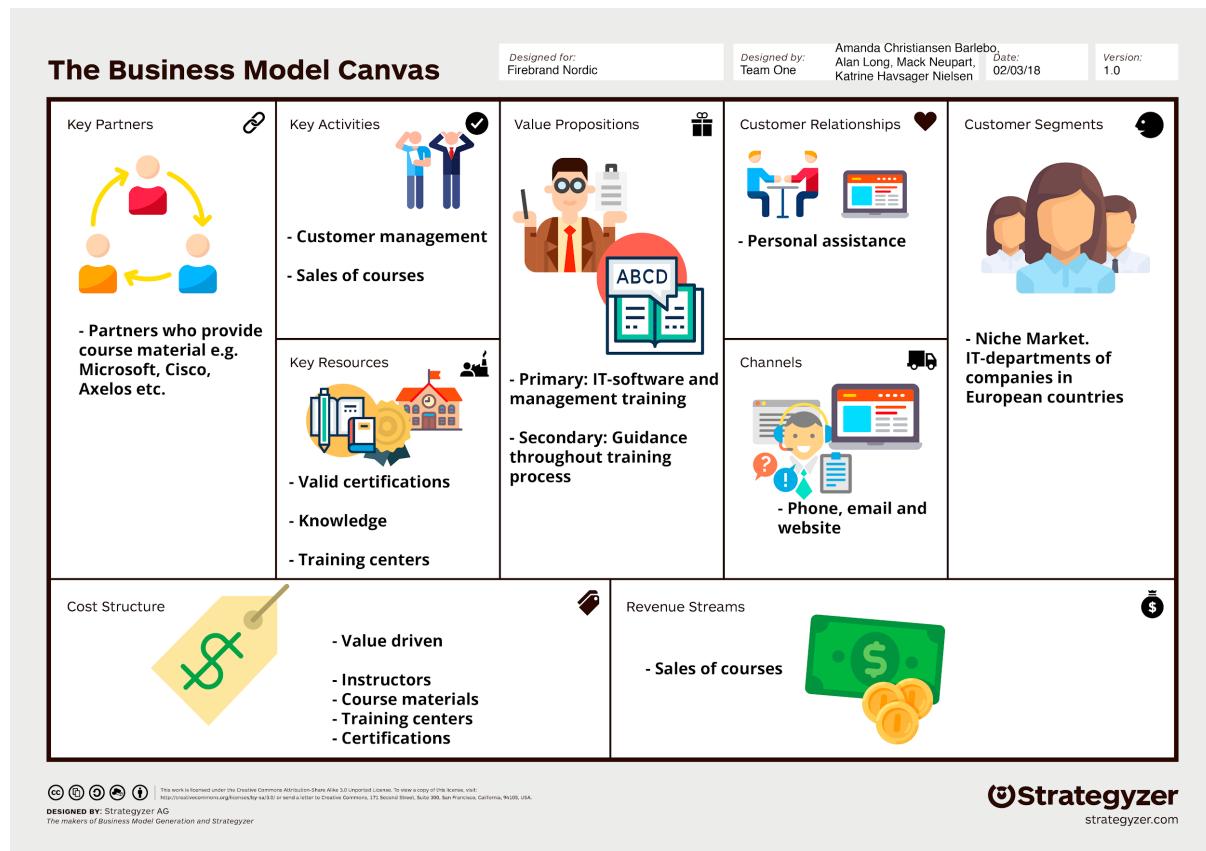


Figure 7: Business Model Canvas in relation to Firebrand

The nine building blocks of our Business Model Canvas can be seen in figure 7, and is elaborated in the following section:

**Key Partners:** Firebrand has a variety of key partners such as Microsoft, Cisco and Axelos. These are the partners who provides Firebrand with valid certifications.

**Key Activities:** Firebrand's key activities are customer management and sales of courses. These are the activities that enables them to offer their value proposition. The customer management consists of guiding their customers in which courses are relevant to them.

**Key Resources:** Firebrand has both physical and intellectual resources. Their most prominent intellectual resource is their ability to guide within the field of IT and management. Their physical resources consist of the training centers which employees attend whilst undertaking a course, but also the certification provided by their partners such as Microsoft.

**Value Proposition:** Firebrand offers training in IT and management. This is fundamentally the reason why customers choose Firebrand. Furthermore, they provide a broader service in which they guide their customers before, throughout and after the training process.

**Customer Relationship:** Firebrand offers personal assistance to their customers. They communicate with their customers both during the sales process and after purchase.

**Channels:** Firebrand communicates with their customers through channels such as their website, email and phone.

**Customer Segment:** Firebrand's Customer Segment consists of a niche market: specialised IT focused companies in European countries.

**Cost Structure:** Firebrand has several costs: The instructors that teach the courses, their training centers, accommodation for the employees, certifications and course materials from partners such as Microsoft.

**Revenue Streams:** Firebrand profits from the courses they provide to their customers.

## 4.2 Understanding the customers

In the following section, the customers are investigated in order to gain a better understanding of their daily tasks and values. Osterwalder & Pigneur's (2010) approach to concept development, suggest that to create a successful concept it is essential to understand the customers. Edvardsson & Olsson (1996) argues further:

*Customers who are not satisfied with their suppliers – because their needs, wishes and expectations have not been reasonably satisfied – are finding it increasingly easy to change suppliers* (Edvardsson & Olsson, 1996, p. 141).

We therefore decided to conduct semi-structured interviews. The purpose of the interviews was to understand what information managers would value throughout the process of training and tracking their employees through Firebrand. In addition, it allowed us to gain knowledge about the managers' work day which would enable us to define a Customer Segment, and thereby identify the customers' pains, gains and jobs.

#### 4.2.1 Interview guide

After undertaking an initial review of Firebrand and defining their business model, it thus became clear that an understanding of their customers was needed if we were to continue the development of our concept. We therefore conducted three separate semi-structured interviews with managers from companies that presently are using Firebrand's services. The managers are working in the following companies: TDC, Cloudeon and Inu:it. The first two interviews were conducted face-to-face but the third was carried out through Skype as the manager of Inu:it was not able to meet us in person.

As a framework for the semi-structured interviews, we created an interview guide. This helped us maintain a focus throughout the interviews to ensure we collected relevant, valuable knowledge through the conversation. The guide detailed the structure of the interviews, starting with open questions such as *How will a typical work day look like for you?* (see appendix 2) in order to create a more natural dialogue between interviewer and interviewee. Furthermore, this should stimulate the interviewees to describe experiences and implications in their work day.

The aim of the interviews was to get to know the customers' way of using Firebrand's services, both in regards to their use of the channels and also the existing account system on the website. We sought to get an idea of what functionalities they currently use, how often, and why they find these functions important in their daily work. The customers were also asked to describe what information on their employees they would find valuable and why this would be of value to them.

#### 4.2.2 Key findings

Throughout the three interviews several interesting arguments and thoughts were mentioned. The following section will present the key findings, categorised under five themes that we found most relevant. The five themes present the managers' current pains when executing different jobs in their daily work tasks.

##### **Lack of overview**

The managers' primary pain in the process of training their employees is their lack of overview. Currently the managers have to collect such information themselves by looking at their account on the website, contact Firebrand and talk to their employees. They all expressed frustration in that they do not have a single system with information on the employees' performance, but instead have to create one themselves through Excel sheets. Two of the three customers we interviewed said that they found the Excel sheets unmanageable and overwhelming. Using this software is time consuming and frustrating, especially as they have to do it every time an employee is sent on a course. Thus, they did

not help the managers to get an overview, even though this was the intention. Susanne Tørnkvist, from Inu:it, explicitly expressed her experiences with Excel sheets:

*[...]make a system that can actually track what's happening instead of sitting with all these Excel sheets which is a nightmare* (Susanne, inu:it\_1, 08:50).

In the first sentence, she also mentions a possible pain reliever to her; a system that can present her with relevant data. The two other managers expressed the same desire. This shows that a service that can provide them with a quick overview throughout the whole process of sending their employees on training courses, will be of great value for them in their work day.

### To feel important

During one of the interviews, a manager expressed that for him it is not only of great value to be presented with the data. He also wants to be able to actively engage with the data and manage it in his own way. He said as follows:

*If they just offer me different kind of things [data] then I don't get this success in my head, saying 'I created this'* (Mark, tdc\_1, 1:03).

He expressed the significance of feeling important in his own work. If he feels uninvolved in the process he will question his position as a manager, and thereby the feeling of "success" will not be reached. He made it clear, that the system should not replace his work tasks, but instead act as a tool to help him execute these tasks himself in a less time consuming way. It is thus essential to him that he is a part of the data analysis process. This made us aware of the fact that it might be important to some of the managers to have the ability to personalise the system depending on what they are seeking and furthermore, be able to manage data by themselves.

### Notifications

Another element mentioned in the interviews, is the fact that the customers have to call Firebrand to get simple and crucial information on the courses and their employees' performance. This could be information such as whether their employees have passed or failed exams. The managers expressed that they want to access such data themselves, instead of having to actively contact Firebrand. We encouraged them to explain this further whereas they used a notification system as an example of a good way to get crucial data in a simple way.

Susanne Tørnkvist explained the perks of notifications as follows:

*Then I know it (news from Firebrand) and I get it sort of presented to me, so I don't need to go into a tool and monitor it, but I get notifications when things are going somewhere different than in the plan. (Susanne, inu:it\_1, 17:30).*

This quote states that she wants an indication when something of a more critical level happens or differs from what is planned. An instance could be if the time frame of a course has been changed. Susanne Tørnkvist does not want to remember to call Firebrand to get such information instead she will be made aware of this through for example notifications on Firebrand's account system.

### Efficiency

Another element in the interviews, that they all seemed to mention was that they wanted a concept, which could make them more efficient in managing the training of their employees. In general, the managers feel as if they lack intel in the account system, that can enable them to make new actions. They want to be presented to data, which they can use for planning future training for their employees. This has something to do with all of the themes above. A solution that takes in consideration all the features they have mentioned would in general make the managers more efficient in their work tasks.

### Lack of advice

Firebrand wants to focus more on advising and guiding their customers throughout the process of sending employees on training courses. All interviewees pointed out, that they feel as if they have a lot of decisions to make themselves; decisions, which they do not feel they have the competencies to make properly as managers. They expressed the wish of Firebrand to take more action in suggesting them relevant courses and to guide them in regards to relevant certifications for the employees in their company.

### 4.3 Customer segment

The analysis of the conducted interviews showed a tendency in the customers' pains, gains and jobs. In order to define the Customer Segments, we discussed the features all interviewees mentioned as important for them and what they described as difficult in the use of Firebrand's current account system on the website.

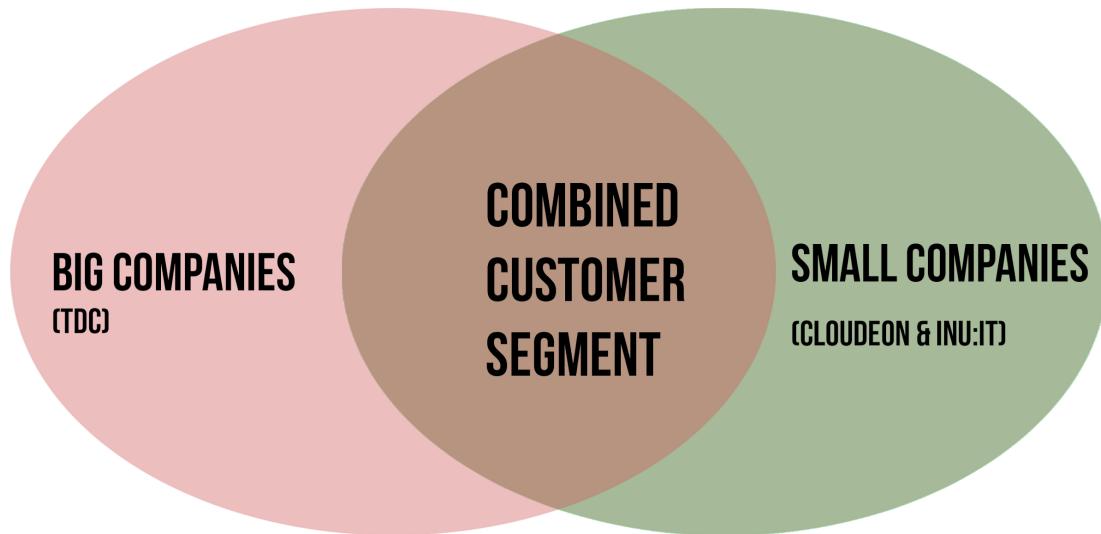


Figure 8: Visualisation of how we combine the Customer Segments

Firstly, we differed between big and small companies, because we found that their customer jobs differed from each other. For instance, the manager of TDC is only focusing on the management of TDC's employees training and development. In contrary, the manager of Cloudeon has several additional tasks besides the training of his employees. However, after the interviews were conducted we analysed their pains and gains to be very similar even though their use of Firebrand was quite different. Therefore, we decided to do a combined Customer Segment, as illustrated in figure 8, that would include features to the concept, which would relieve pains and create gains for both parts.

The Customer Segment was also discussed with Frank Højgaard at one of our meetings. He made it clear that our concept should not prioritize one type of customer over another. Therefore, it became clear that we needed to design for a combined Customer Segment to also meet Firebrand's requirements.

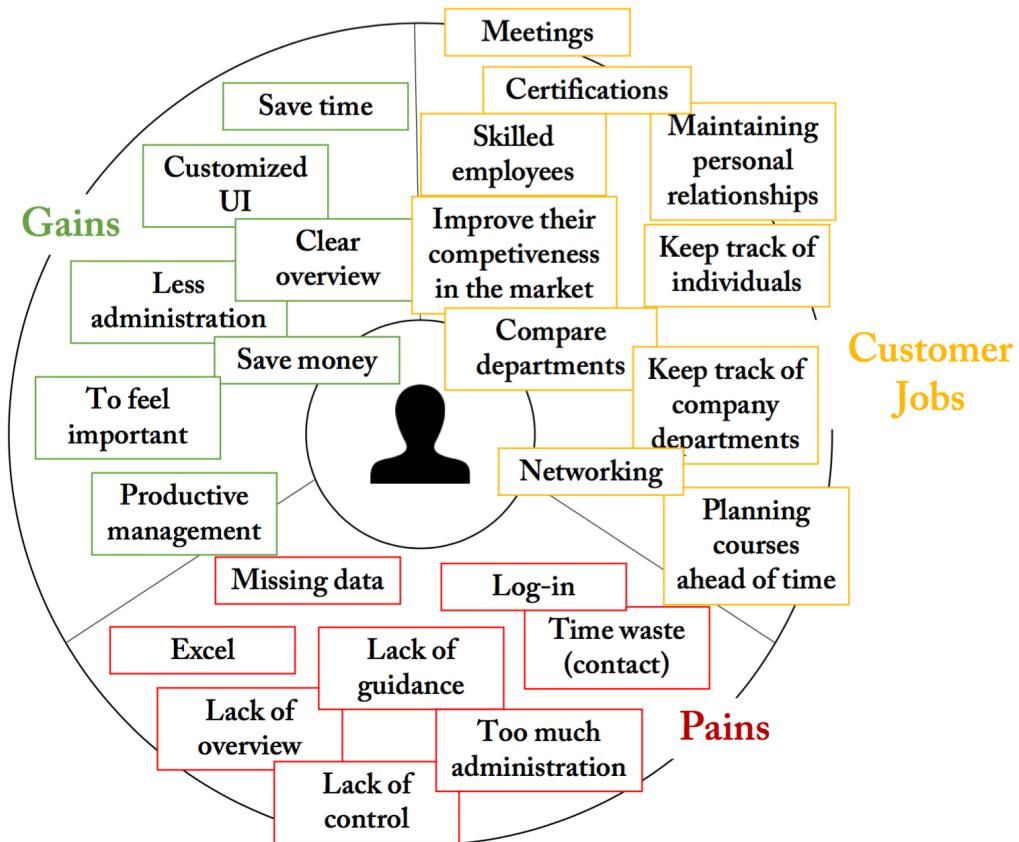


Figure 9: Diagram of the Customer Segment from the Value Proposition Canvas

Our Combined Customer segment therefore includes jobs, pains and gains for all three managers, that we talked to in the interviews. They were similar both in their pains and gains, but also their jobs.

## 5. Concept development

The following section will explain how we generated CustomerReporting based on an iterative process of first having several ideas and opportunities to narrowing it into one concept. Furthermore, it will outline our tests with two managers and describe how these influenced our final concept.

In the early stages of the project, we realised one of the main challenges to overcome was to assess what information was appropriate to present to the users of the interface. We found it necessary to determine how we could create a user interface that would benefit the customers to both establish a stronger relationship between buyer and supplier and create value for both parts.

It was apparent from day one the primary objective of the project was to develop a concept that was useful and effective. Details regarding aesthetics and implementation were left until we had a clear understanding of the case and Customer Segment. We had to address the wishes of Firebrand and to do this, investigate their customers' desires for our concept.

## 5.1 Gantt chart



*Figure 10: Gantt chart showing our planned process*

From the beginning of this project, we made a Gantt chart in order to keep track of time of both internal and external deadlines. We had deadlines both in regards to data collections, briefings for Firebrand's CEO, Frank Højgaard, and multiple hand-ins and supervisions.

We planned a meeting with Firebrand at the start of the project to make sure we were all on the same page when discussing the case. This meeting gave us a better understanding of how Firebrand functions as a company and how they currently interact with their customers. After this, we started our desk research as data detectives, the research technique proposed by Osterwalder (2014). We looked into existing data Firebrand keep about their services in Power BI. This gave us an idea of what was possible to do with the existing data, but also what might be missing. After this, we used another of Osterwalder's techniques, the journalist, to gain customer insights. This was done by conducting interviews with three different customers. The interviews were executed within two weeks and afterwards analysed. The findings led us to discuss different ideas for the concept that would accommodate the findings from each interview. Lastly, we executed our experiments as scientists (Osterwalder et al., 2014), this was done by testing the features and usability of our concept.

## 5.2 Designing our concept

*It is only through feedback collected in an interactive iterative process involving users that products can be refined (Abras et al., 2004, p. 5).*

Generating ideas for our concept was generally done through an iterative process by presenting and testing different features with both the managers and Frank Højgaard. Our interactions with both partners as well as their feedback, led us to reflect upon design solutions in order to refine our concept and thus improve it. The following section will describe how our development of CustomerReporting was carried out and what methods was used during this process.

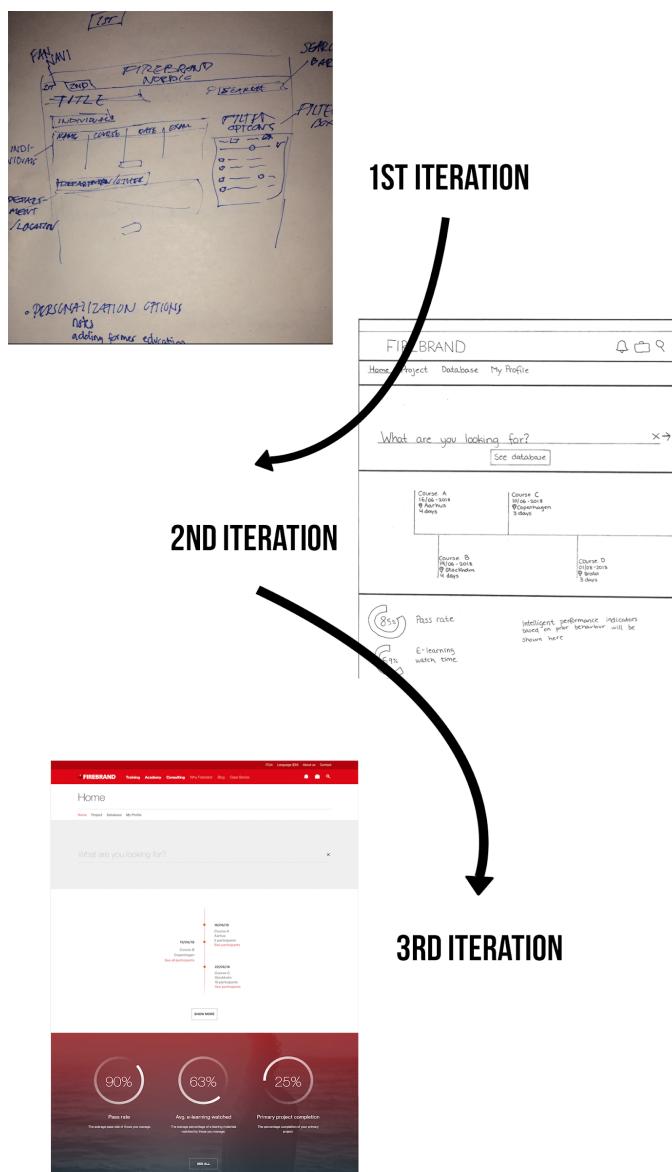


Figure 11: Examples of our sketches to show the iterations

In the early phases of developing CustomerReporting, we mainly used sketching to brainstorm design possibilities. After conducting interviews and creating the combined Customer Segment, we were able to establish some of the core functionalities of our concept, thus the sketching process began. We drew the first sketches on paper. This is according to Buxton (2007) an easy and cheap way to create suggestions for a design idea. The sketches were rough outlines of the structure of the pages and each of their features (see figure 11). The sketches consisted of many design possibilities which we reviewed with Frank Højgaard to get his feedback on our current ideas. We hoped that he would be able to identify possible business killers of our features presented in the first sketches. Business killers are the hypotheses that could have a critical impact or even blow up an idea, therefore those should be identified early in the process (Osterwalder et al., 2014). We wanted to identify these business killers before meeting with Firebrand's customers to be sure that our thoughts on the design also accommodated Firebrand's requirements and desires.

After the meeting, we reviewed and re-evaluated our first sketch. We agreed on features and their placement on the different pages. This led us to create wireframes showing the structure of each page as well as the features they would contain (see figure 11). The wireframes were presented to the manager of Cloudeon to have a potential user commenting on the concept's functionalities and content. The different pages and their features was explained to him. His reactions and suggestions was noted down for us to improve the concept. Based on the manager's inputs we iterated one last time.

We sketched new wireframes in Adobe Illustrator to represent the different web pages that included improved features and changes based on the manager's feedback. The wireframes were then turned into a semi-functional prototype by using Preely, which is a software tool that makes it possible to do an interactive sketch based on png files. Preely makes it possible to make areas on the pages clickable so the managers would be able to shift between pages. Our concept was though still not fully functional but we imitated it by using Preely. Buxton (2007) defines this technical imitation as Wizard of Oz, and underlines the importance of using a low-fidelity technique to simulate an interactive experience (Buxton, 2007). He describes, "Such a system should be cheap, quick to realize, disposable, not the real thing, and only have sufficient fidelity to serve its intended purpose" (Buxton, 2007, p. 240). Preely made it possible for us to create a system that could give the managers a feeling of the interaction with our concept and the general flow on the web pages.

### 5.3 Testing our concept

As mentioned in the previous paragraph, we tested CustomerReporting with the three managers, that we previously interviewed, to validate the features we decided on implementing in our concept.

#### The first test

The first test was executed with Niels Nancke from Cloudeon. This was not a usability test but more of a focus group meeting. Krug (2012) states that focus groups are good for testing early to get opinions from users on the content. We did this test very early in the design process to get feedback on the features we had planned on implementing in the concept. He commented on the second iteration sketches and provided us with valuable insights about what features he found relevant and less relevant in his work day.

#### The second test

After discussing the feedback, we got from the meeting with Niels, we made the third iteration, and tested this with the manager Mark Wöhlers from TDC. For this test, we used the software-program, Preely, to present our prototype, which gives a low-fi interactive experience of how the web-solution would work. During the test, we made Mark think aloud. This made him orally tell us all his concerns, issues and thoughts on his interactions aloud, which in theory could make sure that we get all details about his impressions of our concept (Nielsen, 2012). To ensure we had some relevant data the test was audio-recorded in order to analyse and implement possible new findings. For the test, we used Dumas and Redish's five principles and created a test-guide (see appendix 3). The guide consisted of several questions that would make the manager use the interface as he would have done in a normal work day. The questions related to both the usability of the prototype but also the content. An example of one of the navigation questions is: "Where would you see upcoming courses for your employees?" and an example of a question regarding content is: "Can you comment on the data that's provided in the database page "Is it useful, and what other data could be useful?". We used these questions to get our test person to navigate through our prototype as well as commenting on the content of each page we had created.

After the testing, Mark Wöhlers confirmed that our ideas and implementation of these would benefit him in his work day. For instance, he mentioned how the timeline helped him getting a quick overview of planned activities:

*The timeline gives a good visual overview, it could be refreshing with a bit of colours or icons*  
(Mark, tdc\_2, 11:27).

Here, he mentioned that we could add some more visual design to improve the look of the timeline. Another element he suggested was a new function, that we decided on implementing as well. This was a function that would make the manager able to export the data into Excel sheets. His suggestion contradicts the findings from our interview as some of the interviewees expressed their frustrations in regards to Excel sheets. However, we decided this function could be beneficial as long as it is only an optional feature. As a result of this, we added a small export function to each page.

In general, Mark confirmed that a good overview was established through our concept.

*I think for me as a manager it gives a great overview, and for me, as Mark, as a profile, it also gives an easy overview. I like that* (Mark, tdc\_2, 39:00).

It was of great knowledge to get this confirmation from one of the potential users. It shows, that CustomerReporting satisfies the customers of Firebrand and thereby will create value for both parts.

## 6. Features of CustomerReporting

CustomerReporting is a user interface made for Firebrand's customers with an account, that presents different types of data regarding their employees' educational development. As mentioned earlier, Firebrand already has an account system for their customers and the task they gave us was to further develop the account system to visualise relevant data for each company.

The aim of CustomerReporting is for managers to be presented with a clear overview of the training and projects that their company is currently a part of. The managers will be able to compare data such as their companies' pass rates, net promotor score (NPS) and time spent on projects so far. CustomerReporting consists of four pages; Home, Database, Project and My profile.

The purpose of **Home** is to give managers a quick and easy overview of the upcoming courses, data on their training that is relevant for them at the moment.

**Database** is a page, that contains all data available for the managers in a filterable list. This page is divided into two sections; 'Personnel' which gives an overview of all employees and relevant data on them, and the page 'Courses' which consists of data about the different courses that Firebrand provides.

The **Project** page shows data in regards to a specific project. For instance, it contains a list of all the employees who are a part of the project and what courses that are planned.

**My Profile** is a personal profile for the manager logging into the account. This shows the individual's own contact information, certificates, the planned courses for the manager and statistics such as pass rates.

On the four pages, features have been incorporated in order to relieve some of the customers' pains as well as create an easier workflow during their jobs. These will be elaborated in the following section.

## 6.1 Features

In the following section, we will give an explanation of the aim with each feature of our concept. Each feature is generated on a base of our interview findings, and will therefore be of relevance to Firebrand's customers.

### Notifications

One of the key features, that we have implemented, is the notification system. Our research made it very clear that the customers wanted a system that is proactive. The notification system should therefore both be visible on the managers' accounts on Firebrand's website as well as sending them emails. The managers should only receive crucial information through the notifications. An example would be an employee not attending a course, in which they were registered to attend. This feature aims to reduce the time taken for the managers to access critical information that impacts their business. The graphical interface choice of this feature is a bell made due to similar systems being prevalent on modern operating systems and software in general. We expect all users to be familiar with the conceptual model of a bell representing notifications.

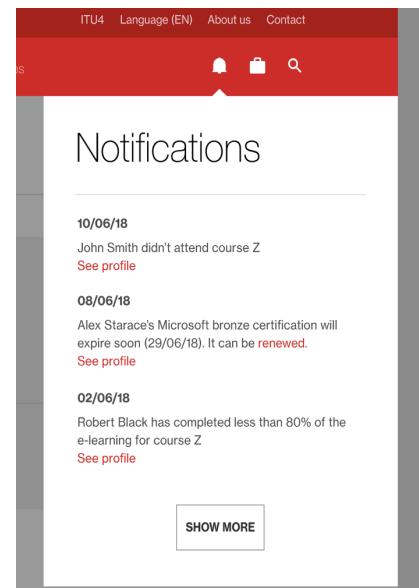


Figure 12: Screenshot of notification feature

## Search tool

In CustomerReporting we have implemented a search tool. This would provide the managers with an easy and fast way to access the information that our concept contains. A broad range of queries can be entered and suggestions will be made as the manager types, based on information relevance to the user. From the managers' employees to a specific course, search is intended to be a powerful tool for a user to access desired pieces of information.

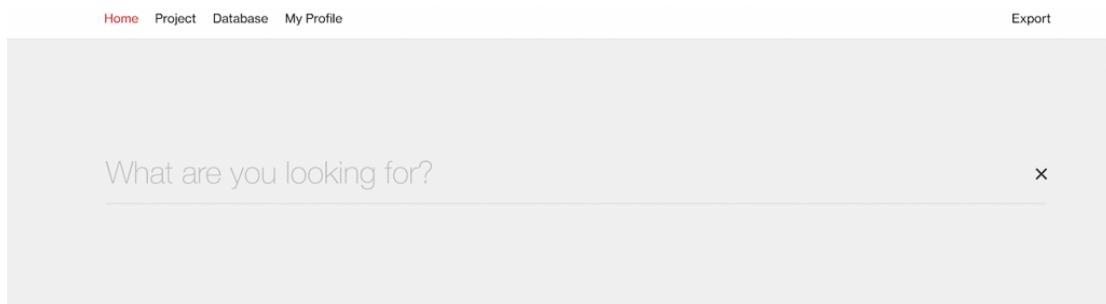


Figure 13: Screenshot of the search tool

## Timeline

In our concept the timeline provides the managers with a visual overview of upcoming courses for their employees. Customers will now have access to this information immediately. In this feature, they gain access to both dates, a list of the employees attending the courses and where the courses take place. As the default setting it shows the courses that are to be taken in the nearest future, but the timeline can be expanded, by clicking the "Show more"-button.



Figure 14: Screenshot of the Timeline

## Dashboard

Another feature, we have created is a Dashboard, which is composed of a selection of KPIs. In CustomerReporting, the KPIs are indicators for the performance of an employee, a course or a project. The KPIs are designed to be presented in a dynamic manner to ensure that they are always appropriate for the managers. This means the information shown can differ from one company to another and is selected by its relevance at the time the account system is being used. In the picture, the following KPIs are represented; the percentage average pass rate of their employees, the average percentage of their watched e-learning material and the managers primary project.

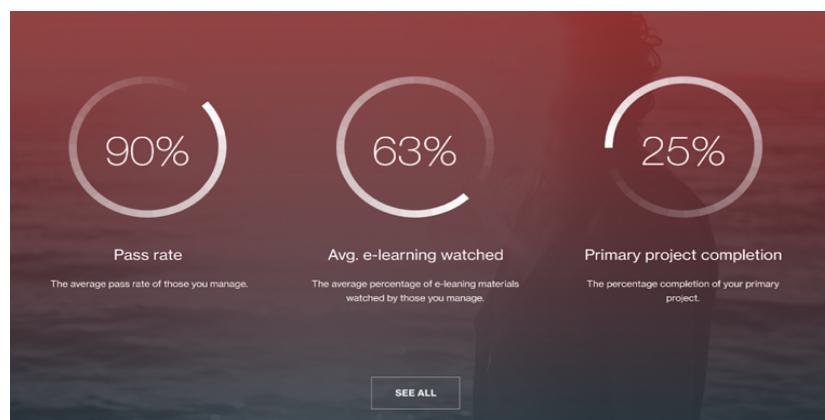


Figure 15: Screenshot of the dashboard feature

## Comparison tool

Comparison tool is a feature, that we have developed to allow the managers to compare multiple items. This is relevant, for instance, if a manager wants to compare two different employees with the intention of making their certifications the same. Here the tool would give a quick overview of what certificates are missing for them to have the same profile. Additionally, it can also compare other data, such as two courses or two projects.



Figure 16: Screenshot of the comparison tool

## Employee & Course profile

All employees and each of the courses has a page with more specific intell about them. This can be accessed when clicking on a specific employee or on a specific course on the Database page. The pages will contain information and statistics relating to the individual or a course, for instance KPIs. These pages illustrate data that is relevant for the manager in regards to planning future training of the employees.

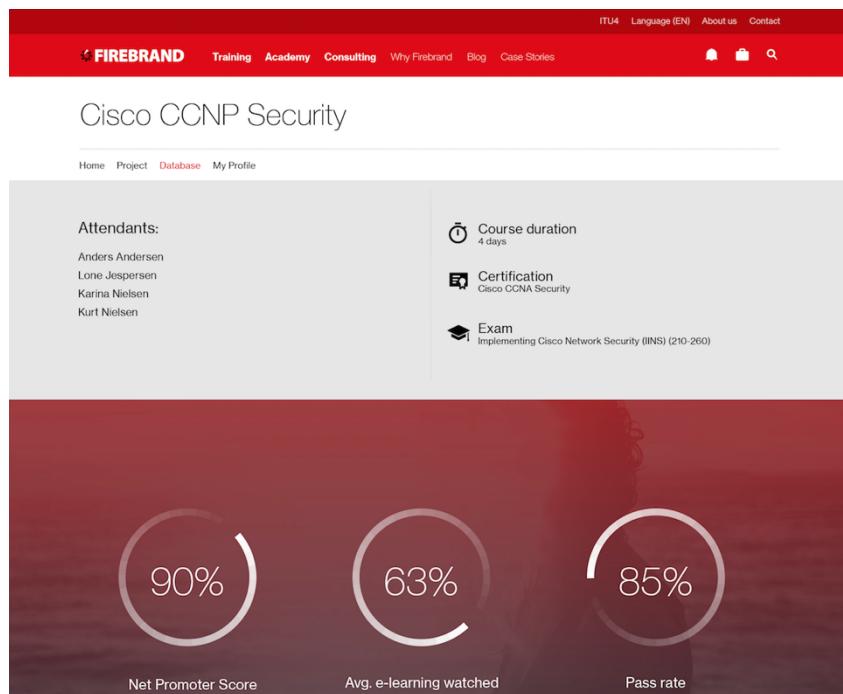


Figure 17: Screenshot of a course page

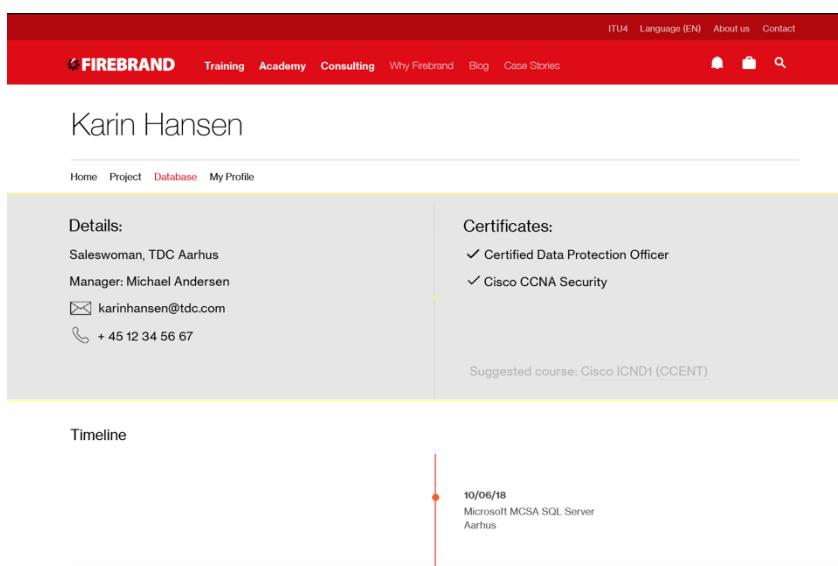


Figure 18: Screenshot of an employee page

## 6. Concept analysis

In the following section, we will analyse and discuss various aspect of CustomerReporting, focusing on the approaches presented by Osterwalder et. al. (2010; 2014), the designed user interface and the user journey.

### 6.1 The revised business model

As our concept developed we reviewed Firebrand's business model to understand what affects our concept has, if implemented, to their business. In figure 19 we show this with the changes in green text.

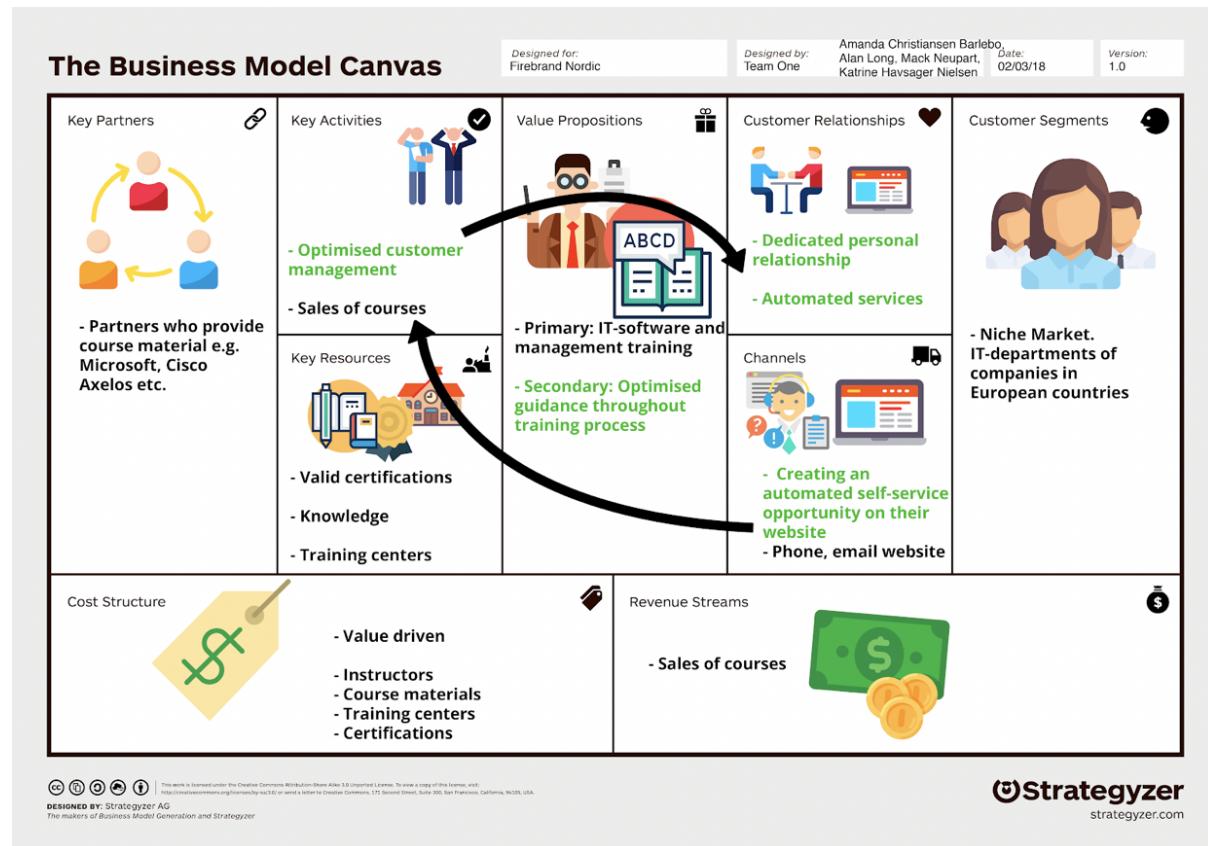


Figure 19: Our Business Model Canvas

As seen in the Business Model Canvas (see figure 19), CustomerReporting will not primarily change their value proposition but instead it will change their channels. As accounted for earlier the different building blocks are not to be seen as independent, thus, by changing the channel, some of the other buildings blocks of the Business Model Canvas are also affected; such as key activities and customer relationship.

The key activities are affected by the new channel, since our concept provides an automated, self-service system. This system gives the customers an opportunity to access data on their employees' performance and the courses they are to take or have taken, instead of calling Firebrand to get this data. The customers will thereby have more time to be advised in what steps to do next, for instance which courses would be helpful for their business. The new key activity will therefore be to advise the customers in regards to courses and the data they have gotten access to through our concept.

CustomerReporting creates change in the Customer Relationship as it establishes a relationship based on automated services. Automated services are according to Osterwalder (2010) a type of relationship that mixes customer self-service with automated processes. Customer self-service is defined by the customer being able to help themselves without contacting the provider, whereas automated process is a system that incorporates algorithms that can recognise customers and their characteristics to offer them information that is relevant (Osterwalder & Pigneur, 2010).

However, in our concept, the Customer Relationship is not only based on an automated system, but also on dedicated personal assistance. This type of assistance is based on the company dedicating a lot of time to each customer, which results in a personal relationship between both parts (Osterwalder & Pigneur, 2010). Giving Firebrand's customers a tool to see their employees' data gives both Firebrand and their customers a reason to open up for a more expertised talk, which will help them create a relationship that is based on dedicated personal assistance.

At last, CustomerReporting also affects Firebrand's secondary value proposition (see figure 19), as it potentially will optimise the guidance of their customers throughout the training process. It will for instance optimise the managers' user journey as they no longer need to call Firebrand to get knowledge on simple information such as the location of a course or their employees' performance. Figure 20 maps the user journey created by our concept. A user journey illustrates how a customer engages with a certain company (Richardson, 2010). It shows the steps a customer needs to take to reach a specific goal as well as the touchpoints where he/she is in contact with the company (Richardson, 2010). The illustrated user journey shows a manager's interaction with CustomerReporting.



Figure 20: User journey after implementing our concept to Firebrand's business

## 6. 2 Our concept in the Value Proposition Canvas.

In order to visualise and understand how CustomerReporting fits the Customer Segment, we have created the Value Proposition Canvas (see figure 21) We believe that our concept creates a fit between the Customer Segment and the Value Map. CustomerReporting generally accommodates the different pains and gains, that we found when analysing our customers. Where the customers had pains such as 'missing data' and 'lack of overview' we have added the pain relievers 'clearer overview of data', 'access to more data' and quick overview of employee insights'. We have also opened the opportunity for Firebrand to give their customers more guidance and advice in choosing courses for their employees.

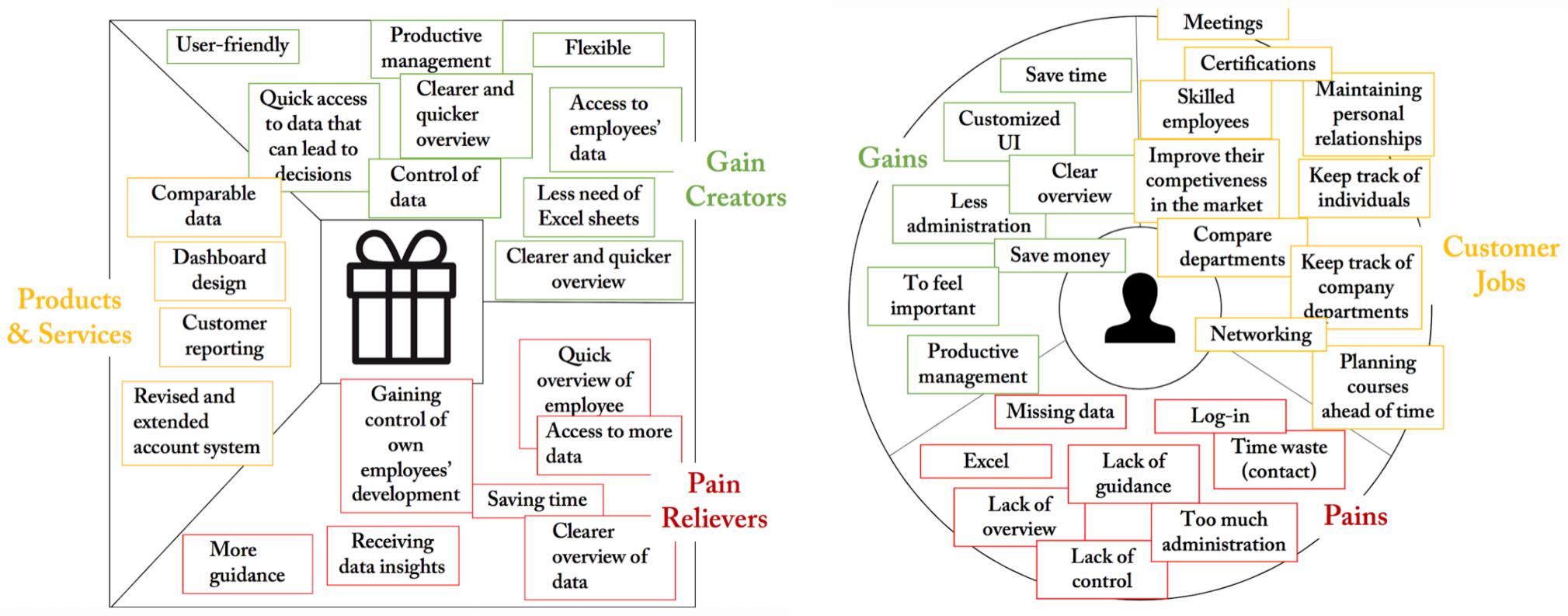


Figure 21: Our Value Proposition Canvas

## 6.3 User Interface

When designing CustomerReporting we took into consideration the visual gestalt laws and Don Norman's design principles. Especially the gestalt laws revolving similarity and continuation has been considered. Since some of the features we have developed are located on more than one of the pages, we, therefore, wanted the features to be recognisable. The visuals of the features do not change on each page, only if the location of them differs depending on the relevance.

Besides using the laws revolving similarity and continuation, we have also thought very carefully about mapping and proximity. This can generally be seen by the way we have grouped the text on the different pages. We found it crucial to make sure, that the managers know what text belongs where, especially on a page like 'Database', where a lot of information is presented.

# 7. Discussion

In the following section, we will reflect upon different aspects in our process. Firstly, we will discuss the technical aspect of implementing our concept. Secondly, we comment on our Customer Segment and how we decided to define this, and lastly, we reflect upon how we tested our concept.

## 7.1 Technical aspects of CustomerReporting

From the beginning of this project Frank Højgaard has been clear; the company desires a concept that solves their problems, rather than one that is necessarily simple to realise. We have tried to strike a compromise between functionality and complexity however addressing the customers' wishes was a priority.

Throughout this paper, we have not touched upon any technical difficulties in regards to implementing CustomerReporting to Firebrand's website. We feel as it is important to mention our awareness of possible implications of a future implementation. For CustomerReporting to be possible to implement, Firebrand needs to collect more data on their customers' employees such as e-learning watch time. To be able to track each employees' average e-learning watch time depends on a technical skill which we do not know if Firebrand possess. All we can argue for is that the information is relevant to the customers. Even though, most of the data which is shown for the managers in our

concept is data that Firebrand already has in their own database, it will still require some technical work to implement the data as how we have suggested.

Since our task was not to create a back-end solution, we do not claim to have deep technical insight beyond these general statements. Therefore, we expect Firebrand to do their own, more thorough investigation into the challenges of implementing our concept.

## 7.2 Discussion of Customer Segment

During our process we decided early on, that we would do a combined Customer Segment based on the three customers we were in contact with. We made this choice based on the fact, that we found similar desires in the interviews with each of the managers. We also talked to Frank Højgaard, who wanted us to make a concept that was fitting for a larger segment of his customers, and not only meet the requirements of either big or small companies. Therefore, we chose to do a combined Customer Segment, since this seemed to be more fitting when having to design for all of them.

However, this might have resulted in a more imprecise design, that does not fulfil the needs and desires for each customer. Some of the features might be irrelevant to one, but to another. Also, the three customers we have been in contact with was somewhat defined and chosen by Firebrand. These might not be representative for all the customers who are to use the system. Perhaps, we would have gotten different insights if we had defined the Customer Segments based not solely on qualitative interviews but also a questionnaire survey. Questionnaire surveys can reach a wider audience and is not as time consuming as qualitative interviews (Hansen & Andersen, 2009). Thus, we could have sent them out to a wide range of customers and thereby collect more data. This might have given us other pains and gains for the Customer Segment which could have resulted in a completely new design.

Another way to address this issue could be to get additional feedback on our concept from more customers who has not been involved in our process. This would help us validate whether or not CustomerReporting can be seen as helpful to more than only the three managers we have been in contact with.

## 7.3 Reflections on testing

When reflecting upon the executed tests, it can be discussed whether or not they are enough to validate our concept. Our tests were conducted on two test persons at different stages in the design

process. Especially the last test we conducted with Mark Wöhlers could have been executed more properly.

Firstly, the prototype he was presented with was only semi-functional. Preferably, we would have presented him with a functional prototype, where every link and page worked as intended. In this way, he would have been able to interact more with the prototype and hereby get a better understanding of our design. This could have provided us with deeper insights relating to the designed user interface. Because of the time scope, we had to work within, we were not able to do a fully functional prototype. Secondly, it would have been preferred to conduct this type of test with more managers, since they might have a different opinion on and impression of the design. It can thus be argued that we should have tested CustomerReporting on more managers to make accurate statements about the influence of our design. Further testing could have provided us with more feedback on our concept and thereby, give a deeper understanding of its values and implications.

Krug on the other hand describes, "Testing one user is 100 percent better than testing none" (Krug, 2006, p. 134). He states that testing with only one or a few users will always be of more value than testing with none. It can thus be argued that even though we only tested our concept on a few managers, we still gained useful insights and was confirmed, that CustomerReporting is accommodating some of the manager's needs.

Another form of testing, that could increase the validity of CustomerReporting would be to plan a workshop. The workshop should include a group of managers and us as designers. This session would be to encourage the managers to form a shared discussion around the features and the usability of our design. In this way, both the managers and designers could participate in shaping the concept. Potentially, such a workshop could lead us to explore new directions.

## 8. Conclusion

Throughout this project, we have accomplished to create a compelling user interface with dashboards and progress reporting. We have used methods proposed by Osterwalder (2010; 2014) to understand the customers of Firebrand and to account for the changes that CustomerReporting are making to their business. The research question was formed as follows:

*How can we create a user interface, which provides a variety of Firebrand Nordic's customers with their employees' data in a logical and useful manner, that will also be beneficial for Firebrand Nordic's business?*

Our concept consists of an account system, CustomerReporting, implemented in Firebrand's current website. The account system created has four pages called "Home", "Project" "Database" and "My profile" to accommodate the customers' pains and needs. We found through our research that customers of Firebrand lacked an overview of their employees' data in regards to tracking and training results. From the beginning of the project, Frank Højgaard made it very clear that for us to help Firebrand's business we needed to meet the customers' need. We found that the customers needed a system that could present valuable data in a logical and useful manner. We believe our concept to some extent meet the requirements of the customers, whilst it was confirmed by Mark Wöhlers at our last test. In our concept, the managers are presented with data, which enables them to make wiser decisions faster and easier for their company. The function, that enables them to see suggested courses is something that could result in great value for Firebrand.

CustomerReporting, however, shall not be seen as without any complications. We have discussed some of the issues regarding implementation, methods and testing.

Based on our research, CustomerReporting will provide Firebrand's customers with valuable data in a logical and useful manner. This will improve Firebrand's digital availability and communication and hereby help improve their customer relationship and channels in the Business Model Canvas. In the end this will all be beneficial both for Firebrand's business and their customers.

## 9. Reference list

- Abras, C. et al (2004). 'User-Centered Design', in Bainbridge, W. (ed) Encyclopedia of Human-Computer Interaction, 1st edn, Sage Publications, Thousand Oaks, retrieved 25th of May 2018 from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.94.381&rep=rep1&type=pdf>
- Blomberg, J., Burrell, M. and Guest, G. (2003). *The Human-Computer Interaction Handbook*. Lawrence Erlbaum Associates, Publishers.
- Brinkmann, S. and Tanggaard, L. (2015). *Kvalitative Metoder* (2nd edition). Hans Reitzels Forlag. Pp. 29-53, 521-531.
- Buxton, Bill (2007). *Sketching User Experiences*. Elsevier Inc. Pp. 105-123, 139-151, 235-243.
- Dumas, J. and Redish, J. (1999). *A practical guide to usability testing*. Hassalo St, Portland, Oregon: Intellect. Pp. 1-25.
- Edvardsson, B. & Olsson, J. (1996). *Key Concepts for New Service Development*. The Service Industries Journal. Pp. 140-164.
- Fitz-Gibbon, T. C. (1990) *Performance Indicators*. BERA Dialogues. Pp. 1-5.
- Graham, L. (2008). *Gestalt Theory in Interactive Media Design*. Journal of Humanities and Social Sciences.
- Hansen, J. & Andersen, B. H. (2009). *Et sociologisk værktøj: Introduktion til den kvantitative metode*. Hans Reitzel.
- Krug, Steve (2006) *Don't make me think (2nd edition)*. New Riders. Pp. 130-160.
- Marsh, J. (2016). *UX for beginners - A crash Course in 100 Short Lessons*. O'Reilly Media, Inc.
- Nielsen, J. (2012) *Thinking Aloud: The #1 Usability Tool*. Retrieved the 25th of may 2018 from: <https://www.nngroup.com/articles/thinking-aloud-the-1-usability-tool/>
- Norman, A. D. (2013) *The Design of Everyday Things*. Basic Books. Pp. 1-36, 217-246.
- Osterwalder, A. and Pigneur, Y. et. al. (2014). *Value Proposition Design*. Wiley & Sons.
- Osterwalder, A. and Pigneur, Y. (2010). *Business Model Generation*. Wiley & Sons.
- Richardson, A. (2010, May 20). *Using Customer Journey Maps to Improve Customer Experience*. Retrieved May 20, 2018, from <https://hbr.org/2010/11/using-customerjourney-maps-to>.
- Williams, R. (2015). *The Non-Designer's Design Book* (4th edition). Peachpit Press. Pp. 11-94.

## 10. Appendix

### Appendix 1: Final sketches of Customer Reporting

Project	Participants	Pass rates	My Notes	Action
Microsoft Dynamics 365 customer engagement Online Deployment	Anette Sørensen Søren Petersen Karina Andersen <a href="#">See more &gt;&gt;</a>	Average pass rate: 77% Your pass rate: 83%	Write something...	
Certified Data Protection Officer (CDPO)	Tina Nielsen Nina Petersen Søren Andersen <a href="#">See more &gt;&gt;</a>	Average pass rate: 77% Your pass rate: 83%	Consectetur adipiscing elit.	
Microsoft MCSA: Cloud Platform	Søren Andersen Daniel Nielsen	Average pass rate: 77% Your pass rate: 83%	Consectetur adipiscing elit. Fusce quis lectus quis sem lacinia nonummy.	
Microsoft MCSD: App Builder	Anders Andersen Daniel Nielsen Søren Petersen <a href="#">See more &gt;&gt;</a>	Average pass rate: 77% Your pass rate: 83%	Consectetur adipiscing elit. Fusce quis lectus quis sem lacinia nonummy.	
Cisco CCNP Security	Kristina Andersen Stine Nielsen Jørgen Petersen <a href="#">See more &gt;&gt;</a>	Average pass rate: 77% Your pass rate: 83%	Consectetur adipiscing elit.	

[Show all](#)

**Firebrand**

We dedicate our work to form the brightest minds to create better solutions for stronger businesses. We have done so since 2001 and have trained, certified and prepared thousands of people for the future.

[Read more](#)

Firebrand Nordic A/S  
Skoleholmen 19 - 21  
2670 Greve  
Denmark  
+45 68 18 43 20  
[info@firebrand.dk](mailto:info@firebrand.dk)  
CVR: 31 74 68 33

**Contact us**

Press  
[About us](#)  
[Contact](#)  
[Career](#)

**Quick links**

**Connect with us**

ITU4 Language (EN) About us Contact

**FIREBRAND** Training Academy Consulting Why Firebrand Blog Case Stories

Database

Home Project Database My Profile

Personnel Courses

Search	Courses	All Departments	My Notes	
Peter Nielsen	Microsoft MCSA: Cloud Platform Microsoft MCSA: Windows Server 2016 Microsoft MCSD: App Builder <a href="#">See more &gt;&gt;</a>	Aarhus	Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce quis lectus quis sem lacinia nonummy. 	<input type="checkbox"/>
Susan Andersen	Microsoft Dynamics 365 customer engagement Online Deployment Microsoft Dynamics 365 Development Kursus <a href="#">See more &gt;&gt;</a>	København	Lorem ipsum dolor sit amet, consectetur adipiscing elit. 	<input type="checkbox"/>
Karin Hansen	Certified Data Protection Officer (CDPO) Cisco CCNP Security <a href="#">See more &gt;&gt;</a>	København	Write something...	<input type="checkbox"/>
Anders Andersen	Cisco CCNP Security Microsoft MCSA: Cloud Platform Microsoft MCSD: App Builder <a href="#">See more &gt;&gt;</a>	København	Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce quis lectus quis sem lacinia nonummy. 	<input type="checkbox"/>
Tina Petersen	Microsoft MCSA: Cloud Platform Microsoft MCSA: Windows Server 2016 Microsoft MCSD: App Builder <a href="#">See more &gt;&gt;</a>	Aarhus	Lorem ipsum dolor sit amet, consectetur adipiscing elit. 	<input type="checkbox"/>

Show all

**Firebrand**

We dedicate our work to form the brightest minds to create better solutions for stronger businesses. We have done so since 2001 and have trained, certified and prepared thousands of people for the future.

[Read more](#)

**Contact us**

Firebrand Nordic A/S  
Skoleholmen 19 - 21  
2670 Greve  
Denmark  
+45 88 18 43 20  
info@firebrand.dk  
CVR: 31 74 68 33

**Quick links**

Press  
About us  
Contact  
Career

**Connect with us**

ITU4 Language (EN) About us Contact

**FIREBRAND** Training Academy Consulting Why Firebrand Blog Case Stories

**Cisco CCNP Security**

Home Project Database My Profile

Attendants:

Anders Andersen  
Lone Jespersen  
Karina Nielsen  
Kurt Nielsen

Course duration 4 days

Certification Cisco CCNA Security

Exam Implementing Cisco Network Security (IINS) (210-260)

Net Promoter Score  
The NPS stats for this course

Avg. e-learning watched  
The average percentage of e-learning materials watched for this course.

Pass rate  
The average pass rate for this course

Pick two things to compare

Cisco CCNA Security x Cisco ICND2 (CCNA) x

**Firebrand**

We dedicate our work to form the brightest minds to create better solutions for stronger businesses. We have done so since 2001 and have trained, certified and prepared thousands of people for the future. [Read more](#)

Firebrand Nordic A/S  
Skølkøbrennen 19 - 21  
2670 Grøve  
Denmark  
+45 88 18 43 20  
info@firebrand.dk  
CVR: 31 74 68 33

**Contact us**

Firebrand Nordic A/S  
Skølkøbrennen 19 - 21  
2670 Grøve  
Denmark  
+45 88 18 43 20  
info@firebrand.dk  
CVR: 31 74 68 33

**Quick links**

Press  
About us  
Contact  
Career

**Connect with us**

**Karin Hansen**

Home Project **Database** My Profile

**Details:**

Saleswoman, TDC Aarhus  
Manager: Michael Andersen  
✉ karinhansen@tdc.com  
📞 +45 12 34 56 67

**Certificates:**

- ✓ Certified Data Protection Officer
- ✓ Cisco CCNA Security

Suggested course: Cisco ICND1 (CCENT)

**Timeline**

- 10/06/18 Microsoft MCSA SQL Server Aarhus
- 02/07/18 Certified Wireless Network Administrator Copenhagen

**SHOW MORE**

**Pass rate**  
Karin Hansen's average pass rate on all courses

**Avg. e-learning watched**  
The average percentage of e-learning materials Karin Hansen has watched.

**Courses completed**  
The percentage completion of Karin Hansen's planned courses.

Pick two things to compare

John Smith x

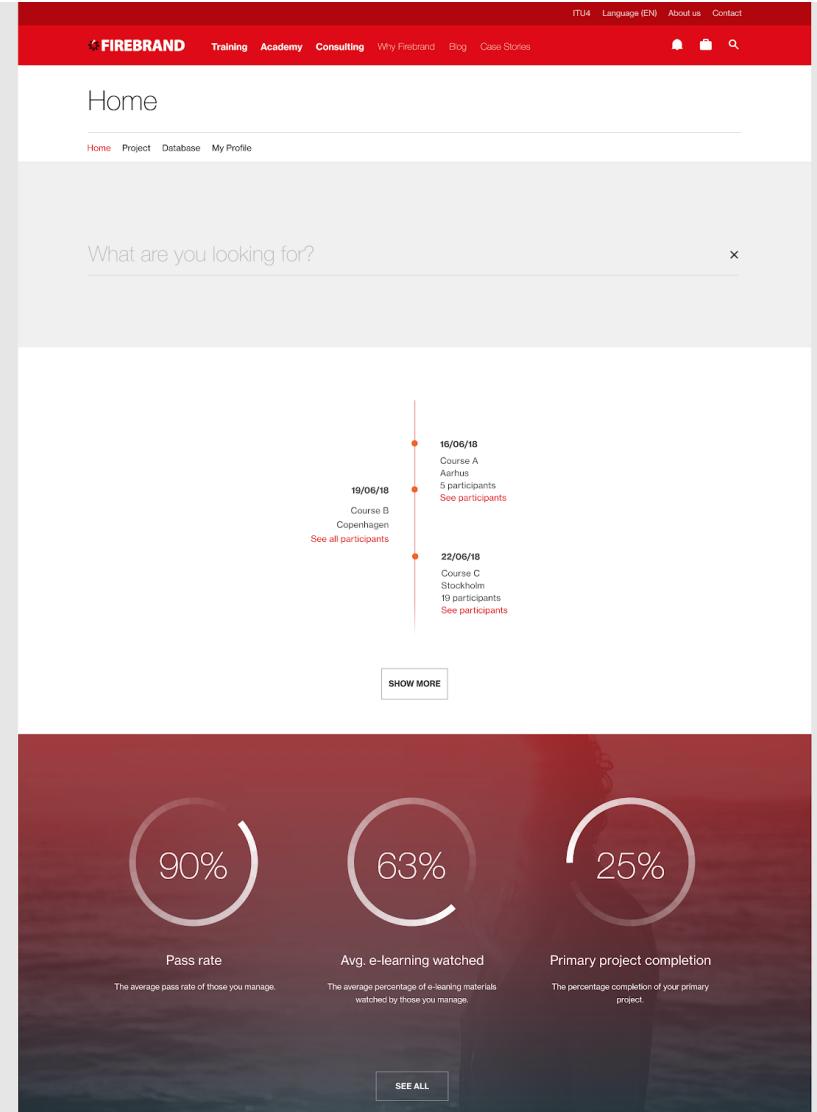
Anders Andersen x

**Firebrand**  
We dedicate our work to form the brightest minds to create better solutions for stronger businesses. We have done so since 2001 and have trained, certified and prepared thousands of people for the future. [Read more](#)

**Contact us**  
Firebrand Nordic A/S  
Skolehjemmet 19 - 21  
2670 Grønne  
Denmark  
+45 88 18 43 20  
[info@firebrand.dk](mailto:info@firebrand.dk)  
CVR: 31 74 68 83

**Quick links**  
[Press](#)  
[About us](#)  
[Contact](#)  
[Career](#)

**Connect with us**



The screenshot shows the FIREBRAND website homepage. At the top, there is a red navigation bar with the FIREBRAND logo, links for Training, Academy, Consulting, Why Firebrand, Blog, and Case Stories, and icons for mobile devices and search. Below the navigation bar, the page title is "Home". A search bar asks "What are you looking for?". Below the search bar, there is a list of upcoming courses:

- 16/06/18 Course A Aarhus 5 participants [See participants](#)
- 19/06/18 Course B Copenhagen [See all participants](#)
- 22/06/18 Course C Stockholm 19 participants [See participants](#)

A "SHOW MORE" button is located below this list. Below the course list is a dark banner with three circular performance metrics:

- Pass rate: 90% (The average pass rate of those you manage)
- Avg. e-learning watched: 63% (The average percentage of e-learning materials watched by those you manage)
- Primary project completion: 25% (The percentage completion of your primary project)

A "SEE ALL" button is located at the bottom of this banner. Below the banner, there is a section titled "Choose two things to compare" with two user profiles: "John Smith" and "Anders Andersen". At the bottom of the page is a dark footer with links for Firebrand, Contact us, Quick links, and Connect with us.

Notifications

03/06/18 Andrew Nelson didn't attend Cisco CCNA Security [See profile](#)

08/05/18 Congratulations on getting your Microsoft certificate! Share the news! [See profile](#)

01/05/18 Kent Hansen's Microsoft bronze certification will expire soon (29/09/18). It can be [renewed](#). [See profile](#)

SHOW MORE

19/06/18 Course B Copenhagen See all participants

02/07/18 Course D Stockholm 7 participants See all participants

10/07/18 Course F Aarhus 6 participants See all participants

19/06/18 Course H Aarhus See all participants

19/06/18 Course I Aarhus 10 participants See participants

22/06/18 Course C Stockholm 10 participants See participants

04/07/18 Course E Copenhagen 2 participants See participants

10/07/18 Course G Stockholm 5 participants See participants

22/06/18 Course I Aarhus 10 participants See participants

SHOW MORE

Pass rate

90%  
The average pass rate of those you manage.

Avg. e-learning watched

63%  
The average percentage of e-learning materials watched by those you manage.

Primary project completion

25%  
The percentage completion of your primary project.

SEE ALL

Choose two things to compare

John Smith x

Anders Andersen x

**Firebrand**

We dedicate our work to form the brightest minds to create better futures for your business. We have done so since 2001 and have trained, certified and prepared thousands of people for the future.

[Read more](#)

**Contact us**

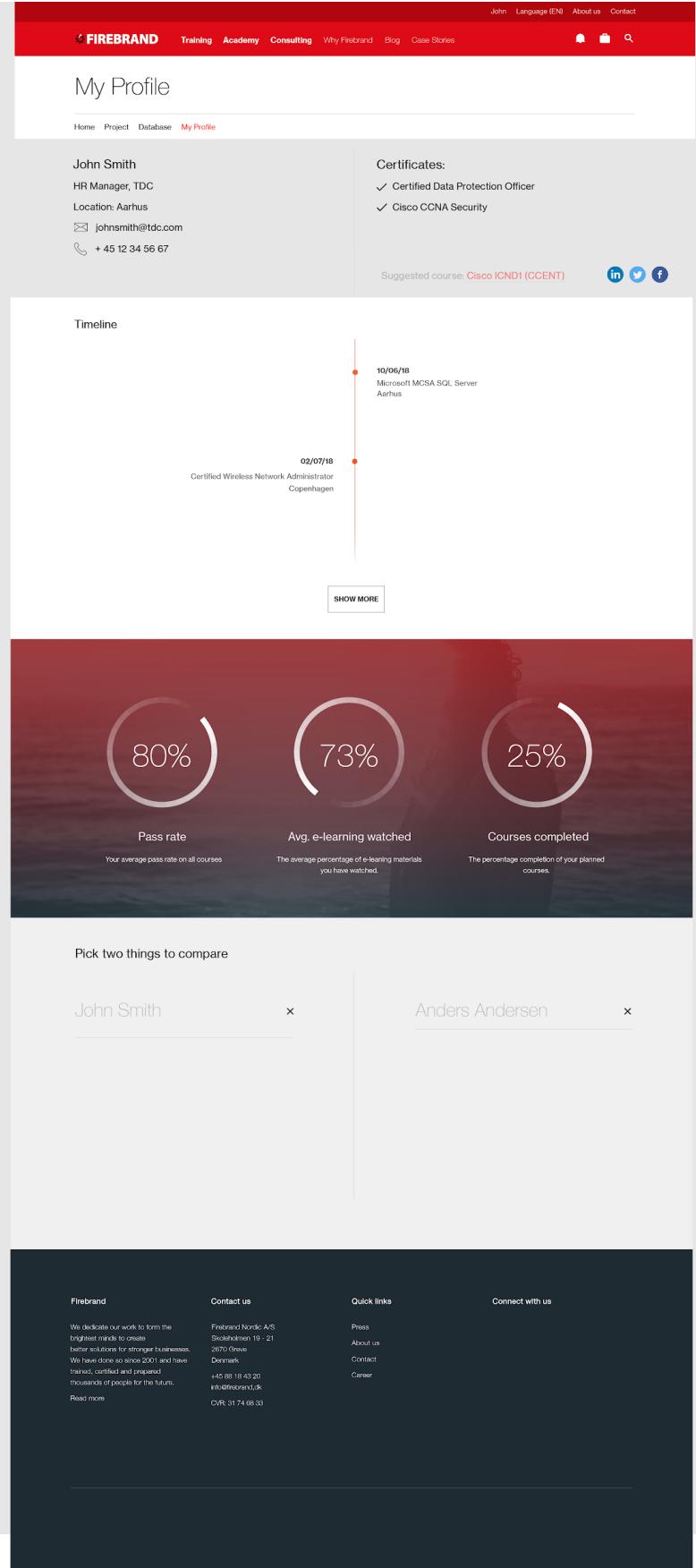
Firebrand Nordic A/S  
Stockholmsgade 19-21  
2000 Copenhagen  
Denmark  
+45 33 18 43 20  
[info@firebrand.dk](mailto:info@firebrand.dk)

**Quick links**

Press  
About us  
Contact  
Career

**Connect with us**

OR: 31 74 65 32



**My Profile**

John Smith

HR Manager, TDC  
Location: Aarhus  
✉️ johnsmith@tdc.com  
📞 +45 12 34 56 67

**Certificates:**

- ✓ Certified Data Protection Officer
- ✓ Cisco CCNA Security

Suggested course: [Cisco ICND1 \(CCENT\)](#)

**Timeline**

- 10/06/18 Microsoft MCSA SQL Server Aarhus
- 02/07/18 Certified Wireless Network Administrator Copenhagen

[SHOW MORE](#)

**Pass rate**  
Your average pass rate on all courses

**Avg. e-learning watched**  
The average percentage of e-learning materials you have watched

**Courses completed**  
The percentage completion of your planned courses

Pick two things to compare

John Smith      Anders Andersen

**Firebrand**

We dedicate our work to form the brightest minds to create better solutions for stronger businesses. We have done so since 2001 and have trained, certified and prepared thousands of people for the future.

[Read more](#)

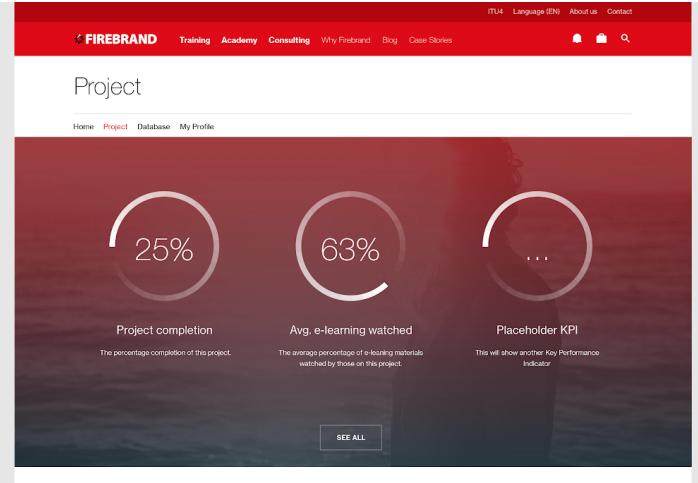
**Contact us**

Firebrand Nordic A/S  
Sankt Jørgens Vej 10 - 21  
2670 Gentofte  
Denmark  
+45 88 18 43 20  
info@firebrand.dk  
CVR: 31 74 68 33

**Quick links**

Press  
About us  
Contact  
Career

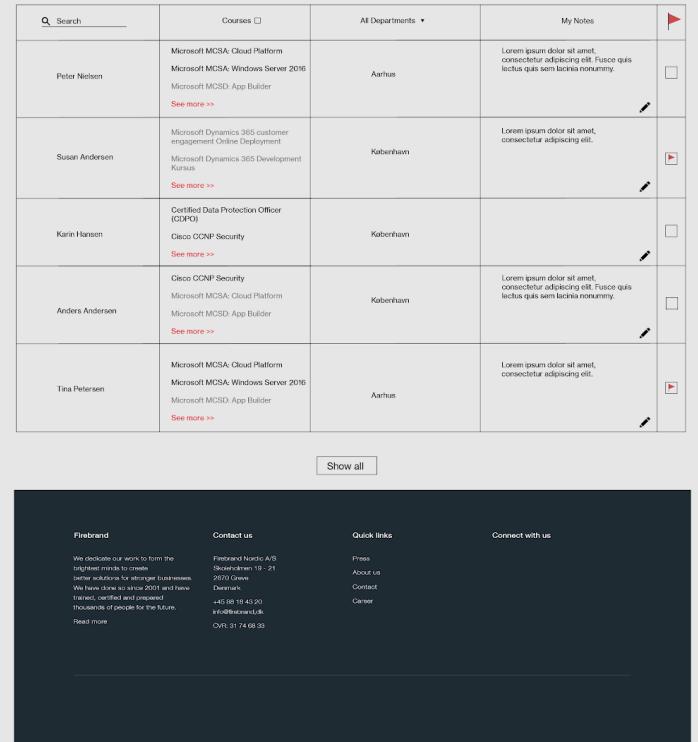
**Connect with us**



The Project page displays three circular KPIs: 'Project completion' at 25%, 'Avg. e-learning watched' at 63%, and 'Placeholder KPI' with an ellipsis. Below the KPIs is a 'SEE ALL' button. A 'SHOW EARLIER' button is located above a timeline of course completions. The timeline shows the following events:

- 04/05/18: Course B, Copenhagen, 8 participants (See all participants)
- 12/05/18: Course D, Stockholm, 7 participants (See all participants)
- 23/05/18: Course F, Aarhus, 6 participants (See all participants)
- 01/05/18: Course A, Aarhus, 5 participants (See participants)
- 10/05/18: Course C, Stockholm, 19 participants (See participants)
- 19/05/18: Course E, Copenhagen, 2 participants (See participants)

The timeline ends at 'Project complete' with a 'See details' link.



The Courses page lists five employees with their training history:

- Peter Nielsen: Microsoft MC3A: Cloud Platform, Microsoft MC3A: Windows Server 2016, Microsoft MCSD: App Builder. Aarhus. My Notes: [Note icon]. See more >
- Susan Andersen: Microsoft Dynamics 365 customer engagement Online Deployment, Microsoft Dynamics 365 Development. København. My Notes: [Note icon]. See more >
- Karin Hansen: Certified Data Protection Officer (GDPR), Cisco CCNP Security. København. My Notes: [Note icon]. See more >
- Anders Andersen: Cisco CCNP Security, Microsoft MC3A: Cloud Platform, Microsoft MC3A: Windows Server 2016, Microsoft MCSD: App Builder. København. My Notes: [Note icon]. See more >
- Tina Petersen: Microsoft MC3A: Cloud Platform, Microsoft MC3A: Windows Server 2016, Microsoft MCSD: App Builder. Aarhus. My Notes: [Note icon]. See more >

At the bottom of the page is a 'Show all' button.

## Appendix 2: Interview guide

Interview guide (1-2 hours)

*Firebrand Nordic UI web-pages.*

Who are we?

Give an introduction of who we are and why we are conducting this interview.

Case description:

Firebrand Nordic would like to be more transparent in the data which they collect from the participants attending their courses. Therefore, they would like to share the collected data with their customers (you) but they want to make sure that the shown data will be important and relevant to their customers (you). Our purpose is to understand what data their customers (you) value and what their (your) opinions are on this project.

Initially ask for consent - 'Are you okay with us recording all audio from this point on? Are you also aware that this will be used through our research project? Finally thank them for the participation and offer them feedback on the findings the project produces.

Interview guide for the semi-structured interview:

Research themes	Interview questions
What is the general practise in a company, that uses Firebrand Nordic's services.	<p>What are your responsibilities within the company?</p> <p>How many employees do you have?</p> <ul style="list-style-type: none"> <li>- How often do you have contact with them?</li> <li>- And on what channels?</li> </ul> <p>How will a typical work day look like for you?</p> <ul style="list-style-type: none"> <li>- What is your typical tasks during a day?</li> </ul>
The customers' use of and general thought on Firebrand Nordic's services.	<p>Where/how did you get to know Firebrand Nordic?</p> <p>How is Firebrand Nordic relevant for you/the company?</p> <ul style="list-style-type: none"> <li>- In what context do you use Firebrand Nordic?</li> <li>- How often have you used Firebrand Nordic? <ul style="list-style-type: none"> <li>- How satisfied are you with the services Firebrand Nordic provide?</li> </ul> </li> </ul> <p>What programs do you find to be the most relevant for your business?</p>

	<ul style="list-style-type: none"> <li>- How many employees have you put through the different programmes?</li> <li>- What do you seek to accomplish by putting your employees through these programmes?</li> </ul>
Valuable data	<p>What information is important for you to know when your employees have been on a course?</p> <ul style="list-style-type: none"> <li>- How do you get this information? <ul style="list-style-type: none"> <li>- Do you have contact with Firebrand Nordic?</li> </ul> </li> <li>- How do you keep an overview of your employees' courses? <ul style="list-style-type: none"> <li>- What course they have been taking? If they passed exams and results?</li> </ul> </li> <li>- How often do you check this sort of information? - in what context?</li> <li>- If you were to pinpoint the three most valuable information you could get from Firebrand Nordic, what would it be? <ul style="list-style-type: none"> <li>- Why these three things?</li> <li>- How often would you check this information?</li> </ul> </li> </ul> <p>If you were to facilitate a project that required a handful of your employees to do courses at Firebrand Nordic - What sort of service would you like Firebrand Nordic to provide?</p>

## Appendix 3: Test guide

Navigation tasks:

- How would you find an overview of your employees?
- Where would you see upcoming courses for your employees?
- Can you find a profile of one your employees?
- Try adding a note to Karin Hansen
- Try to find the course (Cisco CCNP Security)
- Find your own contact information
  - See your notifications
  - See all your future courses

Questions regards navigation/usability/content:

- How do you find the navigation tab (names, order etc.)
  - Would you find any other tabs relevant?
- How would you describe the overall navigation on the prototype? (confusing, easy)
- What are your thoughts on the timeline? (when would it be useful)
- Are the 3 KPI's we have chosen relevant (if yes, why or what else would be useful to see)
  - What suggestions do you have for project KPIs
- Can you comment on the data that's provided in the database page (is it useful, and what other data could be useful?)

## Appendix 4: Recordings

To access recordings, find the folder “Appendix\_4\_audiofiles”

Tdc\_1.m4a

Conducted 16th of March

1:11:58

Tdc\_2.m4a

Conducted 4th of May

00:45:07

Cludeon\_1.m4a

Conducted 20th of March

00:47:37

Inu:it\_1

Conducted 15th of March

00:27:19

Inu:it\_2

Conducted 15th of March

00:22:57