IMPROVING THE SHOWCASING
OF SERVICE PRODUCT PORTFOLIO WITH
DESIGN METHODS
– Case ABB Drives

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// Abstract

As service business keeps on growing, the ways of presenting and visualizing the usually abstract services become increasingly important. This thesis discusses the design process of improving the showcasing of the ABB Drives Service's portfolio. The goal is to make the global service product portfolio of ABB Drives more understandable and useful with chosen design methods.

ABB Drives develops and manufactures frequency converters. To make the most of the drives and assure the high performance of the technology, ABB Drives is offering different services to the customers globally. The services are displayed and communicated in a certain way internally at ABB and I'm going to study whether the current way could be improved, or could that be looked into in a better, more user friendly way. At the moment, the services are displayed on a SharePoint site for the ABB personnel and that is the platform on where the portfolio is displayed also in the future.

As a designer, I'm using the methods of service design, user experience design and information design in the thesis. In order to improve the showcasing of the portfolio with user–driven approach, I gathered user insight both domestically and globally from several countries and that insight is used during the design process. Results from the user research and the ABB brand guidelines will steer the design of the final outcome.

The outcome of the thesis is a concept that shows how the services are visually displayed and categorized in a new way. In addition, the relations and differences between the services are depicted in the visualization so it supports the organization and its activities. The concept can be implemented with further development after the thesis is delivered.

// Tiivistelmä

Kun palveluala kasvaa, yhä tärkeämpään asemaan nousevat keinot, joilla yleensä abstraktit palvelut esitetään ja visualisoidaan. Opinnäytetyössäni esittelen muotoiluprosessia, jonka pyrkimyksenä on kehittää tapaa, jolla ABB Drives Servicen portfolio esitellään. Tavoitteena on tehdä ABB Drivesin globaalista palvelutuoteportfoliosta ymmärrettävämpi ja käytännöllisempi valittuja muotoilukeinoja käyttämällä.

ABB Drives kehittää ja valmistaa taajuusmuuttajia. Jotta taajuusmuuttajista saadaan täysi potentiaali irti ja niiden teknologinen suorituskyky varmistetaan, ABB Drives tarjoaa asiakkailleen tajuusmuuttajiin liittyviä palveluja globaalilla tasolla. Palvelut esitellään sisäisesti tietyllä tavalla, ja opinnäytetyössäni aion tutkia, voisiko käytössä olevaa tapaa parantaa vai voisiko asiaa katsoa uudesta, paremmasta ja käyttäjäystävällisemmästä näkökulmasta. Tällä hetkellä palvelut esitellään SharePoint–sivulla ABB:n henkilökunnalle, ja se on myös alusta, jolla portfolio esitellään vastaisuudessakin.

Muotoilijana tulen käyttämään tässä opinnäytetyössä palvelumuotoilun, käyttäjäkokemussuunnittelun ja informaatiomuotoilun keinoja. Kehittääkseni portfolion esitystapaa käyttäjälähtöisesti, keräsin käyttäjätietoa niin kotimaisella kuin globaalillakin tasolla ja tuota tietoa hyödynnän muotoiluprosessini aikana. Lopputuotoksen suunnittelua ohjaavat käyttäjätutkimuksen tulokset, toimeksiantajan vaatimukset sekä ABB:n brändiohjeistus.

Opinnäytetyöni lopputuloksena on konsepti, joka kuvaa, kuinka palveluportfolio esitetään visuaalisesti ja miten palvelut on kategorisoitu uudella tavalla. Lisäksi palveluiden väliset yhteydet ja erovaisuudet kuvataan visualisoinnissa niin, että organisaatio ja sen toiminta siitä hyötyvät. Konseptin jatkokehitys ja toteutus ovat mahdollisia opinnäytetyön valmistumisen jälkeen.

Tekijä: Miika Lehtinen

Otsikko: Palvelutuoteportfolion esitystavan kehittäminen muotoilun keinoin – tapaus ABB Drives

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Koulutusohjelma: Muotoilun koulutusohjelma
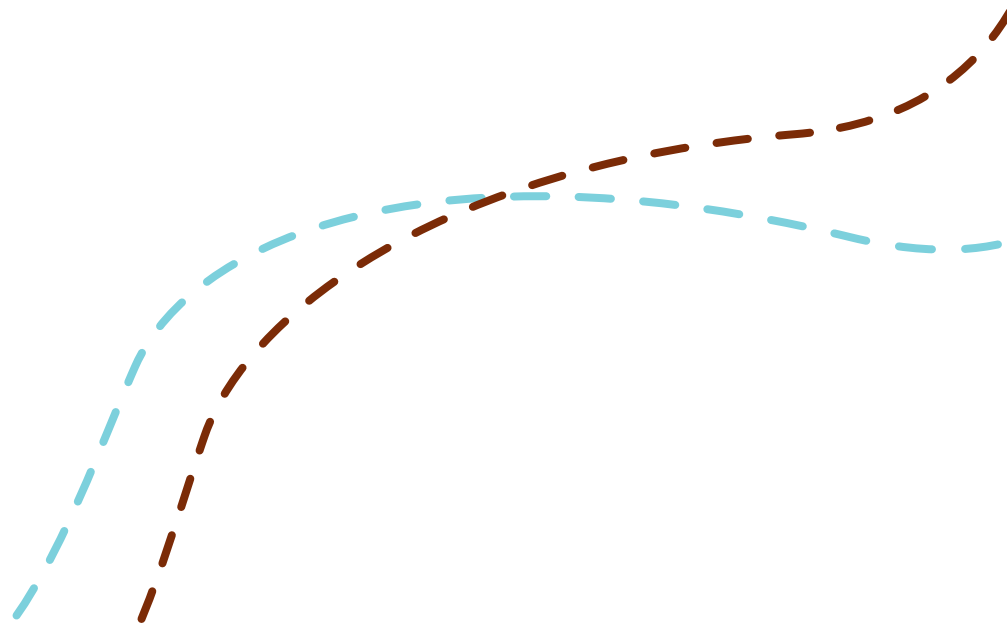
Suuntautumisvaihtoehto: Teollinen muotoilu

Ohjaajat: Metropolia: Tuomo Äijälä, Ville–Matti Vilkka
ABB: Marjukka Mäkelä, Ilkka Kihniä

Avainsanat: Palvelumuotoilu, informaatiomuotoilu, käyttäjäkokemus, palveluportfolio, kommunikaatio

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1 Introduction

1.1 My Role as Designer

What is expected from me at the BA level design thesis is to bring the service design aspect and the usage of design methods to the showcasing of the service product portfolio. The thesis is conducted and delivered for ABB Drives that is a business unit in the ABB organization. To be more specific, the Product group of Drives Service that deals with all the services related to the ABB frequency converters. I will be involved with the Design team and the Global Service Product Management team. I'm workin under the supervision of the Design Manager and theHead of the Global Service Product Management team.

The personal goals for me in this thesis are to develop my skills as a designer and to grow in the professional point of view. Especially, I'm aiming to develop the skills to choose, validate and apply theories and practices from the field of design and to implement those into the design process. Moreover, the subject of research in design is something I want to explore in this thesis and hopefully continue to improve in my profession afterwards. In overall perspective, I am pursuing to develop my abilities in managing and scheduling the design process and I hope to prove my professional capabilities within those areas with this thesis.
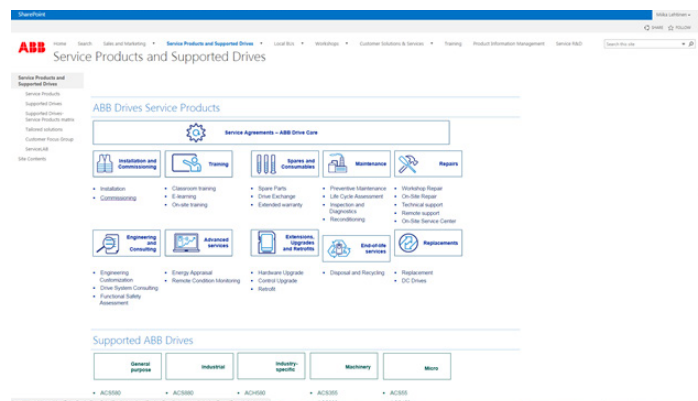

Picture 1. Drives. (ABB Media Bank 2011)

Picture 2. The current service portfolio and the categories. (ABB Drives Service 2017)

Picture 3. The Current SharePoint site displaying the portfolio. (ABB Drives Service 2017)

1.2 Brief

The brief I was given was to study the current state of the global service product portfolio of ABB Drives and then to improve it as an UX designer with the chosen design methods. The portfolio is communicated through a SharePoint site at the moment (Picture 3) and that is the platform on which the future design is going to be on. What is expected is to make the service product portfolio more understandable especially for the sales people in Local ABB Sales units in different countries via visualization and the usage of infographics. Improving the portfolio could be handled in a more detailed level through one case example (e.g. the remote condition monitoring service).

The goal for the thesis is the improvement of the visual communication of the current service product portfolio for all of the user groups. In addition, to make it easier for the local sales units to gain an understanding and information of different services they need, and to clarify the portfolio so that it is clear what the differences are between those various services.

There could be two concepts as an outcome: a more realistic one that is implementable in the current situation and one that could be a little bit more future-oriented (e.g. something with virtual aspects). The final outcome is going to be on a concept stage at the end of the thesis and not to be implemented during the thesis.

1.3 Signifigance of the Thesis

The significance of the topic that revolves in the context of services, service portfolios and also the executed process in order to resolve the service design problem are defined in three different points of view. The aspects that are treated next are: the significance for the industry, for the client and for the user.

The significance for the industry: When the service business keeps on growing, the ways how the usually abstract services are explained and visualized become more and more important. In addition, the designers are in the key position in that. Moreover, the amount of information is vast all over the industries and the receiver has to gain the correct information needed. The design of the information is valuable to the business.

Significance for the client: ABB Drives has a vast portfolio of service products and at the time the portfolio might not be as understandable and user–driven as it should be. There might be cases where the current state of communication with the portfolio makes it difficult to sell the services for customers. Thus, using design methods in the improvement process is valuable for ABB Drives.

Significance for the users: It is important that the person who reads through the service portfolio understands the services and can make the decision of acquiring or suggesting the service products needed.
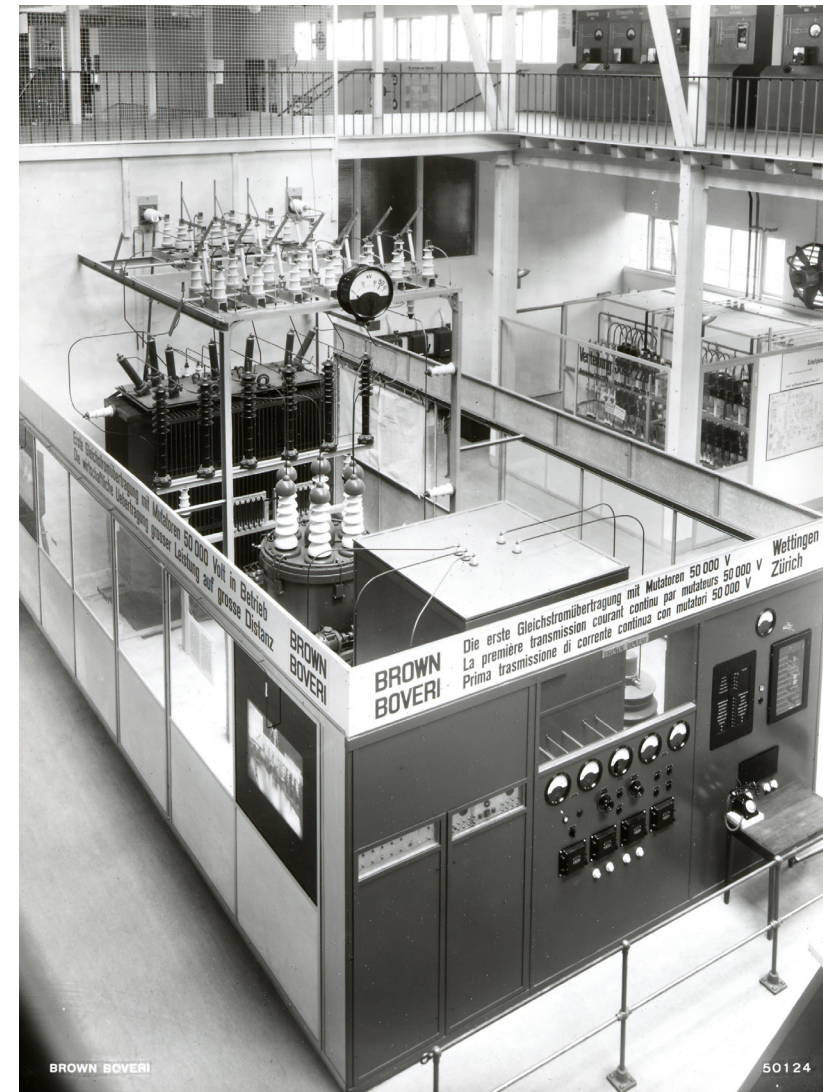
Picture 4. Brown Boveri rectifier from 1939. (ABB Media Bank 2017)

1.4 The Client

1.4.1 ABB

Picture 5. Strömberg Factory 1922. (ABB Media Bank 2017)

Historically, ABB is mainly the outcome of the 1988 merge of two major electrical engineering companies in Europe, ASEA of Sweden and Brown Boveri (later BBC) from Switzerland, the establishment of both dates back to the late 19th hundreds. ABB is a pioneering technology leader that works in the field of energy, industry, transport and infrastructure and is the global leader in power and automation technologies. ABB is also leader in digitally connected and enabled industrial equipment and systems. Company operates in more than hundred countries worldwide and the installed base of over 70 000 control systems connects 70 million devices. (ABB in Brief 2017)

Organization wise ABB is consisted of four global divisions according to the customers and industries it serves. The divisions are called Electrification Products, Robotics and Motion, Industrial Automation and Power Grids. The divisions themselves are consisted of more specific business units (BU) that focuses on certain industries or product categories. For example under the Robotics and Motion division are three business units called Drives, Motors and Generators and Robotics. (ABB in Brief 2017)

Although ABB is primarily the product of ASEA's and BBC's merge, there have been many smaller acquisitions and mergers with different technology companies. One example of those is Strömberg, the Finnish company offering electromechanical products, that was acquired in 1988. Currently ABB is headquartered in Zurich, Switzerland. (ABB History 2017)

1.4.2 ABB Drives

Industry consumes over 40 percent of all the electrical power in the world and almost 70 percent of all of that industrial electrical energy use goes to the powering of electric motors. By adjusting the speed, frequency and moment of the electric motors, motor's consumption of energy can be cut down to half. Drives are designed to adjust those factors. Drives work so that they convert fixed frequency AC power into variable frequency and voltage AC power. The industries that utilizes drives are HVAC (heating, ventilation and air-conditioning), food, textile, pulp and paper, water and wastewater, metal, cement, chemicals, mining, marine and offshore, oil and gas and power generation. (ABB Drives 2017)

ABB is the leader in the drive market. The ABB Drives unit in Finland develops and manufactures low voltage drives and the software tools to all the applications and industries globally. The factory in Helsinki is the leading unit in the development of the drives in ABB. (ABB Oy 2017)

In order to make the most of the drives and assure the high performance of the technology, ABB Drives is offering different services to customers globally. These services are categorized and displayed internally in several different ways. The ways are presented later on in the thesis.

The global service products in the service product portfolio are organized in following categories: Installation and Commissioning, Training, Spares and Consumables, Maintenance, Repairs, Engineering and Consulting, Advanced services, Extensions, Upgrades and Retrofits, End-of-life services and Replacements. Each of the categories includes one to five services.
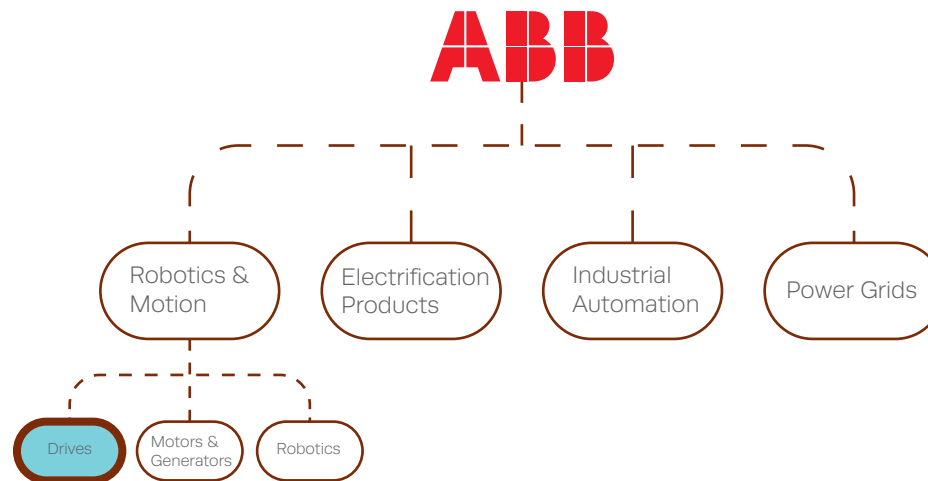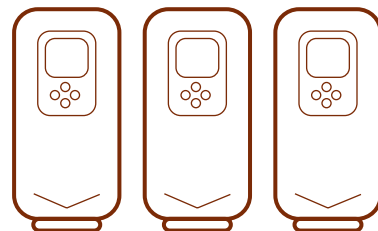
2 Methods

2.1 Methodological Approach

The framework of my thesis is consisted of service design, information design, user experience (UX), the user and the ABB brand. The methods of service design, UX design and information design that will be applied in the thesis and in the process, are going to be covered in their own following chapters. The user–driven approach will be in the center of the design process continuously through the thesis. The final outcome have to fit into the ABB brand, so that is going to be explored later through the ABB brand guide.

The user interface (UI) design as such and the look & feel of the SharePoint site are almost completely outlined off of this thesis, based on the brief I was given and the fact that I'm going to focus on the visual communication of the service portfolio and not to the actual web site working on the SharePoint platform. In addition, I will not take into account contents of any of the services itself or how they are delivered to the customer, I will concentrate only on how the services are showcased and communicated to the user.

The areas that are discussed in the context of ABB in the thesis are as follows:

> defining the current state of the service portfolio,
>
> defining the users and user needs for information sharing,
>
> designing a concept of how to communicate the service portfolio.

// Framework of the Thesis
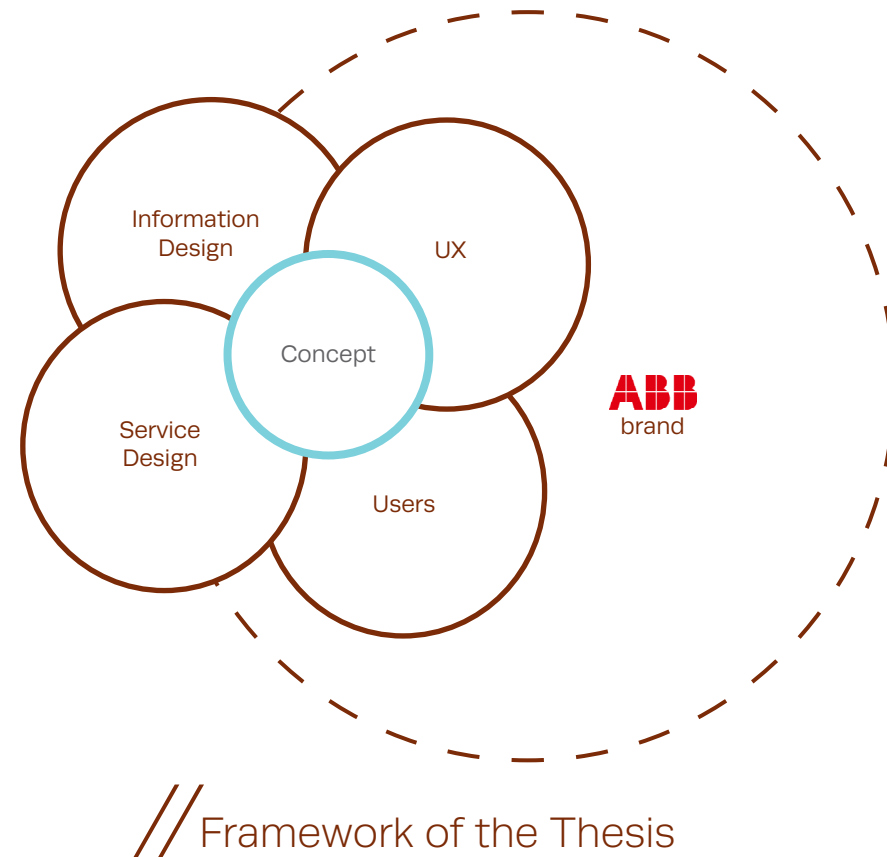
2.1.1 Service Design

I will explore the brief and the goals in the context of service design. Although I'm not creating any new services or developing an existing one as such, part of the delivering and selling services and what happens in the back stage of the service provider is the internal communication about the services. So why an industrial design thesis is taken into the service design approach? According to Ben Reason, Lavrans Løevlie & Melvin Brand Flu, principles from different fields are influencing service design in a major way, most important being industrial design. Other ones include branding and marketing. (2012, 1)

Service design is the creative process that aims to address services from the perspective of customers. On one hand, the usefulness, usability and desirability of the services from customer's point of view are the goals for which service designers strive for in their work. On the other hand, from supplier's point of view, effective, efficient and distinctive services are in the aim. (Mager, eds. Miettinen & Koivisto 2009, 35) Balancing between those points of view is essential in successful service design.

Because this thesis revolves around existing services and the notion of the internal communication being in the core, there are some important convergences with service design principles. As Birgit Mager describes in the Service design definition in the design dictionary, the restructuring of existing services is as much of challenge in in service design as the development of innovative new services (Mager, eds. Miettinen & Koivisto 2009, 15).

In the case of internal communication related to services, service design approach deals especially with the employees and the organization itself. There are usually communicational challenges in between units and teams inside large companies (Alhonsuo, Rytilahti & Jylkäs, eds. Rytilahti & Miettinen 2016, 35). Also the behavior, experiences and emotions have an important role in how the services are delivered to the customers (Jylkäs, Tikkanen & Jeminen, eds. Rytilahti & Miettinen 2016, 18). Derived from those perspectives, one goal for me is to study how the employees in this case feel about the service portfolio.

The involvement of the personnel of local ABB's is essential from the service design point of view. The notion of co-creation where in this case the staff is involved in the creative process, is often mentioned in conjunction with service design (Reason etc. 2016, 11–12). Birgit Mager also points out that co-creation means not only integrating the client in the creative but also in the exploration process (Mager, eds. Miettinen & Koivisto 2009, 38), which I will take into a major role in this thesis. The knowledge is most detailed in the client's know-how and it will be essential for me to utilize that.

To get the customers to order the services, it is important to understand the basic need of information at phase of acquiring services. Communication of information is often a challenge for customers who in most cases are less well informed about the costs, timings and the performance of the service operator. (Reason etc. 2016, 29) It is essential in my case to get the ABB service sales to be as well informed internally as possible about the different aspects of the service portfolio.

There are a tight connection with service design to the interaction and experience design (Mager eds. Miettinen & Koivisto 2009, 35) and I will be addressing that connection also. In addition, portfolio positioning and portfolio management will be an area to look into in a section of this thesis. That is because is service design is used in a substantial manner, it has to be connected to the business strategies (Mager eds. Miettinen & Koivisto 2009, 35).

2.1.2 User Experience

As mentioned before, user experience (UX) design is relatively close to the service design approach. For instance in this ABB Drives Service portfolio case, it is important to think the solutions for the service design challenge through the point of view of the users. The way the users experience the showcasing of the portfolio, has to be taken into account. There are certain principles in the UX design that are essential when the defined brief is tackled.

Don Norman and Jakob Nielsen defines UX as the overall interaction of the end-user with the company, its services and its products. In pursuing the ultimate user experience, it is essential to meet the exact needs of the customer. According to Norman & Nielsen, the overall interaction can be viewed from multiple perspectives: engineering, marketing, graphic design, industrial design and user interface design. They key to high-quality UX is the complete merging of all of those. (NNGroup 1998)

I am striving to improve the way of displaying the portfolio with the user-centered approach. Therefore the disciplines of UX design are relevant to be mixed with the service design point of view. Hoa Loranger describes that in the core of UX design, is the notion of fulfilling the users' wants and needs and to design them to be as easy and pleasing to use as possible. UX is concerned with everything that affects the user and the different disciplines and stakeholders have to be pulled together in order to create effective UX. (Loranger 2014) My approach into the brief is to play my part in the bigger picture of the UX in ABB Drives.

One UX method that will be in the core of my user research, is qualitative interviews. They are usually open–ended and the subjects can in considerable scope direct the interview to adjust to their own experiences (Crouch & Pearce 2012, 71). This from of interviewing needs the interviewer to be an active listener (Crouch & Pearce 2012, 112–113) and I consider that as one of my strengths. And as Crouch & Pearce put it, the researcher's, in my case the designer's, goal is to capture the experiences and perspectives of the interviewees as close to reality as possible.

Another principle that is commonly used in UX and UI is the gestalt principles of form perception. The gestalt principles derives from the 1930s and 1940s German psychology approach to study how structures and forms are perceived in the environment (Soegaard 2002). The most common gestalt laws are, as defined by Mads Soegaard in the Glossary of Human Computer Interaction: the laws of proximity (objects that are closer together are related), similarity (objects with similar properties are related, e.g color or shape), common fate (objects that move in same direction and speed forms units), symmetry (objects are perceived as symmetrical wholes), closure (perceptions of closing up or completing objects) and figure–ground (figures and grounds with dual perceptions). (Interaction Design Foundation) Because I'm dealing with services that are visually displayed in relation to one another, the forms and how they are perceived by the user is something to consider.

2.1.3 Information Design

One significant part that has a theoretical impact on the thesis is the concept of information design. Information design is designing the manners of representation of information as understandable as possible (Koponen, Hildén & Vapaasalo 2016, 19). According to Koponen, Hildén & Vapaasalo (2016, 20), the term information design is used especially in the context of designing the visual format of information. Since the goal for my thesis is to improve the service product portfolio with especially visualization and the visualization choices are going to be crucial in the outcome, it is important to study the general means and perceptions in the field of visualization. Thus, I will cover the basics of information design in my thesis.

Information design started to separate theoretically from graphic design in the 70s when the design consultancy Pentagram started to use the term information design to describe their methods and activities to emphasize the basic mission in graphic design: the design of information and communication. Information design was established totally as its own field after the Information Design Journal was founded in 1979. (Koponen etc. 2016, 20)

Information designs has two major sub–categories, infographics and visualizations. Where infographics, being explanatory graphics, support communication, visualization is exploratory and, therefore, reveals new features in the content. Visualization as a term can also be used with various other meanings. It is defined that generally the term is used in the context of the whole process, both the turning of data into visual form and the visual outcome of the process. Therefore, in terminology, visualization is the high–level term under which infographics and the actual visualizations settles. (Koponen etc. 2016, 22–23) I will be using the term in this thesis to describe the process and its outcome and not the sub–category of visualizations. In the context of BA level design thesis, the high–level use of the term is more comprehensive.

The visualization of information and the design that is put into the process have to be as clear as possible with the users in mind. The content and the purpose of the visualization have to come before the impressive looks of the outcome, that is in this case the model of presenting the portfolio visually. As Koponen, Hildén & Vapaasalo depicts (2016, 32), there is one rule that has to be followed in every case: "Choose the way of representation that generates as clear outcome as possible." All the other rules are made to be broken.

One the other hand, as Koponen, Hildén & Vapaasalo points out (2016, 77), the more aesthetically pleasant the visualization is, the more understandable it also is. They base this argument on the UI related research conducted by Andreas Sonderegger & Juergen Sauer in 2010. The comparison might be accurate but it has to be remembered that the visualization can't be all about aesthetics, it has to also communicate to the reader clearly. After all, that is the main goal for me too.

2.1.4 Methods In Conclusion

Service design and UX design will all have approximately equally big impact on my thesis. The methods are in fact, crossing each other as mentioned. Although they can be seen as individual methods and theories behind them might vary. UX design is intrepreted to be considering the whole experience with the company, where as service design is mainly about services. However, in both of them, the user / customer is in the core.

Information design, as earlier described is about designing the information. Therefore in hierarchy, it settles under the UX and service design. Information design must be taken into account in every case, no matter of the definitions of other methods, when there is any links to communication or showcasing of information.

I will look into the the showcasing of the portfolio from all of the previously mentioned aspects. The UX and service design are closely linked together and they will affect the way I will approach the design challenge user–centered. Therefore, those will be guiding the process continuously. Information design as such affects in the visualization itself and plays bigger part mainly in the latter phase of the process.

UX Design

Brief

Service Design

Final Concept

Information Design
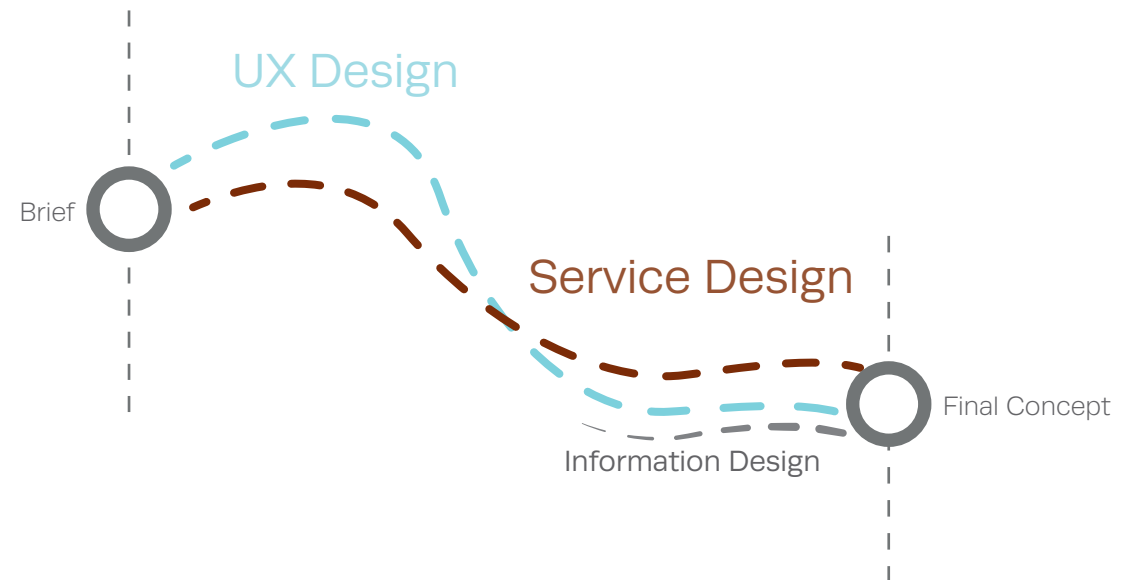
// The Methods along the process.

2.2 Portfolio Management

2.2.1 About Portfolio and Its Management

Picture 6. Mineria in Escondida Chile. (ABB Media Bank 2017)

Portfolio is the collection of products and/or services that the company has to offer. The term portfolio might be referred to when talking about the offering at the moment but it usually also features the items that are on the R&D phase. For the customers, the portfolio is communicated in only so that the current offering is showcased.

Portfolio management is a dynamic decision process where new products or projects are evaluated, selected and prioritized, existing projects may be accelerated, killed or de–prioritized. Also the resources are distributed within active products. (Cooper, Edgett, & Kleinschmidt 2001, 3.) The goals for portfolio management usually are value maximization, balance and strategic direction. Well managed portfolio is a combination of pursuing those goals, although sometimes there might be a potential for conflict between the goals. (Cooper, Edgett 1997.)

2.2.2 Portfolio Management at ABB Drives

In order to understand more of the matters that affects the portfolios at ABB Drives, I interviewed the Development Manager at ABB Drives, whose expertise are the matters related to portfolio management. We discussed the topic and the portfolio management process in general. There is plenty of theory about the portfolio management in literature but the practices and terminology differs in the context of ABB, thus to hear straight from the person was important to understand what happens in the background. During the interview, the Development Manager introduced and displayed the portfolio management process in ABB Drives and the different kinds of portfolio management models that are in use.

First, the product portfolio process in ABB was presented by the manager. In general, the portfolio displays the so-called active products that are in the offering at the moment and the products that are in the development. The products might be at their end-of-life stage and from some point onwards not to be in the offering. A roadmap term is used when describing the individual product life cycle and the portfolio can be seen as a combination of roadmaps for different products that shows what is the timeline for certain products. Also the portfolio as a whole can be referred as the product portfolio roadmap.

The product portfolio is not the only way of handling the portfolio management in ABB. The interviewee says that besides the concrete products, there is also a concept of idea portfolio in use at ABB. The idea portfolio is a collection of ideas about new products or related to existing ones. The third form of managing the portfolio is the project portfolio. However, according to the Development Manager, that is not always so clearly separated from the actual product portfolio and either it should not.

The whole concept of managing the portfolio is a multi-staged process. Interviewee lists the main phases in the portfolio management: recognizing of ideas and product roadmaps, categorizing (whether it is a new product or an upgrade to an existing one), evaluating the value and balancing the R&D briefcase. And last but not least, he logically stresses the importance of resources: the capability in terms of personnel and budget. Therefore, in conclusion, the manner of how the products or services are showcased in the portfolio is only a glimpse of the work that is put into the process. However, in this case, it is important to understand the processes of how the specific services that are displayed in the SharePoint site have found their way to the portfolio.

2.3 Design Process

The design process I'm utilizing in this thesis is the double diamond design process that was defined by Design Council in 2005. The double diamond design process was introduced by Design Council as part of a study and the graphic model was created to reflect the general design process. Process and the visual mapping of it, are divided into four separate phases: Discover, Define, Develop and Deliver and the idea is that every other phase widens the scope of the process and every other narrows it done, reflecting the ways of thinking among the designers. Basically, the stages or phases have a starting point and an ending point and in the middle of the four phases is the definition of the brief. (Design Council 2015)

The Design Council has determined (2015) the phases so that the Discover phase is the start of the project and the phase where the research is done and the dilemma or topic is approached from different aspects. Next, the Define phase is about analyzation and interpretation of the findings in the first phase and after this stage comes the definition of the final brief. Third phase is where the design of the solutions happens, the Develop phase. Finally, in the Deliver phase, the goals are met and the product or service is final and delivered. The double diamond process is utilized as the basis of many other design process models. For instance, it is used in the Service Design Toolkit created by Jyväskylä University of Applied Sciences together with service design consultancy Palmu (Jyväskylä University of Applied Sciences 2012).
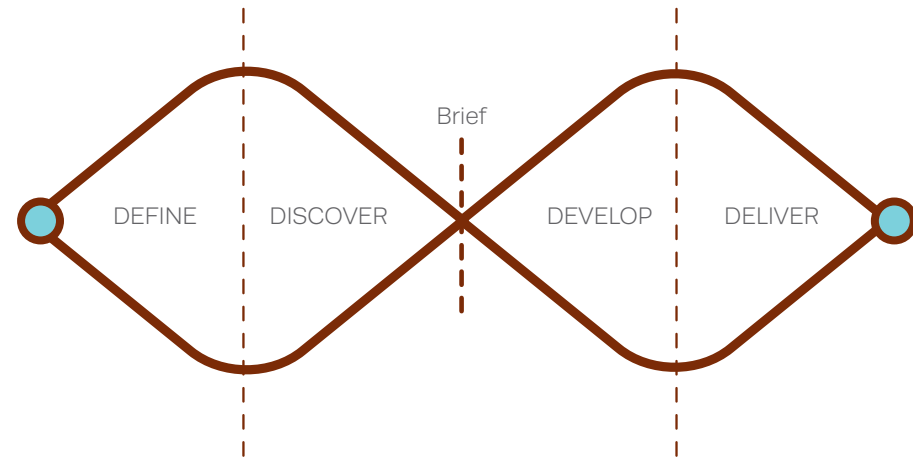
Adaptation of the double diamond process by the Design Council 2005.
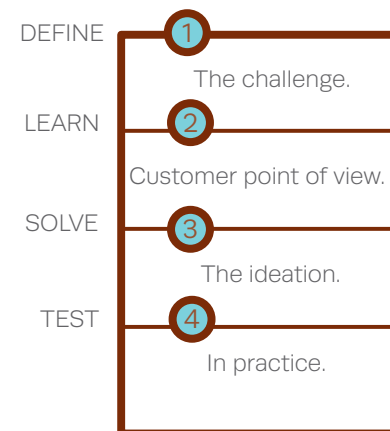
Adaptation of the process from the Service Design Toolkit by Jyväskylä University of Applied Sciences 2012.

For me, this way of mapping the process is clear and it makes complex projects easier to manage and schedule. Those are the main reasons for me to use the double diamond process in my work. However, the double diamond process as such, is not suitable for this thesis. Therefore, I'm going to slightly alter the contents of it to make it better support the expected outcome that in this case is not going to be an end–product. Almost complete lacking of the fourth stage in my thesis, will affect the process model that I'm going to use. In my work the Design Council's Develop and Deliver stages are going to change in a way that the Develop stage's content will be spread onto the fourth stage as well. The Deliver stage's delivering aspect is going to be taken account only in the further development section.
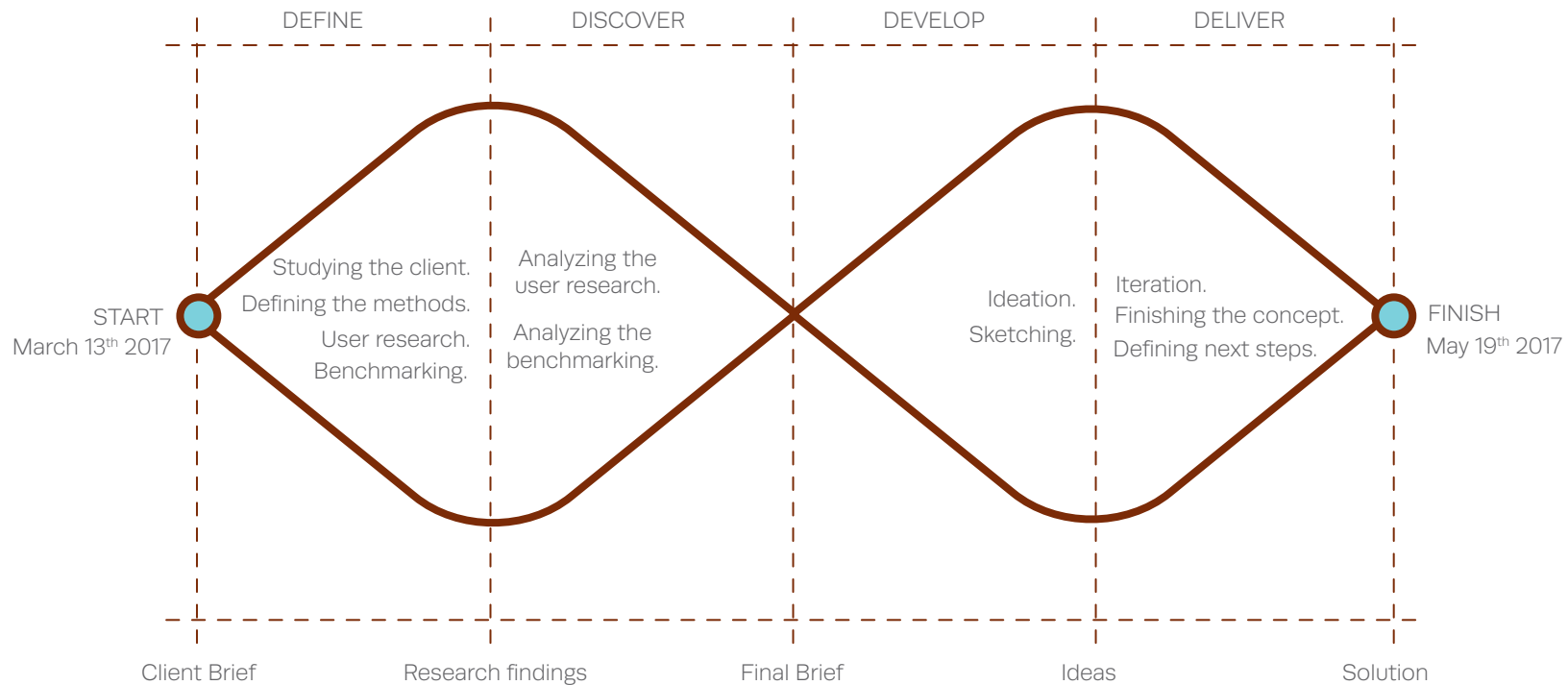
Thus my design process consists of four stages as the Design Council's model but the contents vary slightly:

Discover: Researching the topic and the theories. Also some user research and benchmarking.

Define: Analyzing the results from user research and benchmarking.

Develop: Ideation, sketching and iteration.

Define: Iterations with the more–to–the–end brought visualization of the portfolio (compared to the original double diamond's finished outcome). Defining how to continue.

DEFINE | DISCOVER | DEVELOP | DELIVER

START
March 13th 2017

Studying the client.
Defining the methods.
User research.
Benchmarking.

Analyzing the user research.
Analyzing the benchmarking.

Ideation.
Sketching.

Iteration.
Finishing the concept.
Defining next steps.

FINISH
May 19th 2017

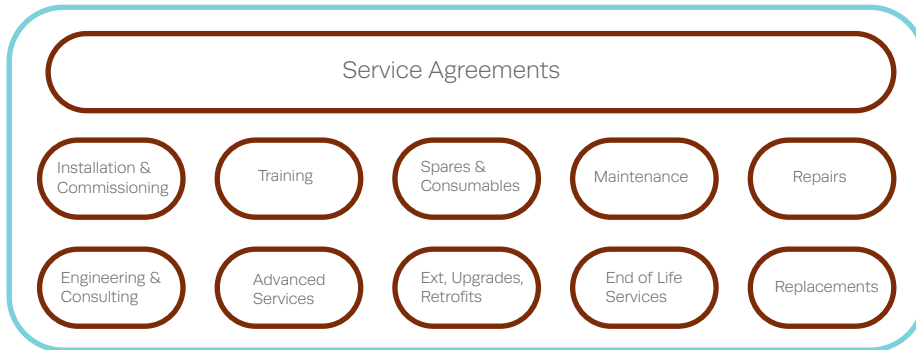Client Brief | Research findings | Final Brief | Ideas | Solution
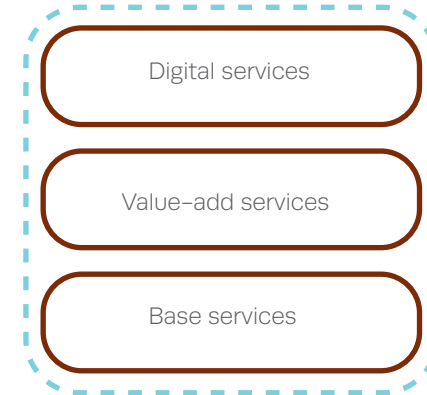
2.4 Service Design Challenge

There are several ways in which the service product portfolio has been showcased at ABB Drives. The context determines the way of communicating the portfolio and the people who it is communicated to differs according to that. There are a few ways of categorizing the portfolio. Those ways are: the accounting structure, the revenue based structure, the process based drive life cycle, the product based and the need based. The different ways are visualized on the next page. At this point the accounting structure is used that categorizes the services in ten different categories and each category has a title and a symbol.

The interaction of abstract systems is in most cases best expressed visually than in long passages of text (Crouch & Pearce 2012, 171). In my case the abstract systems are the services and the interaction between them is the categories and differences depicted in the portfolio. So, the service design problem that is going to be in the core of the thesis is to determine whether the current accounting structure and the way it is visualized, is the most understandable for the user or could it be improved with design methods. The portfolio overview has to support people in various positions and from different backgrounds. That leads to the question: which are the design methods that are the key in finding the solution to the problem?
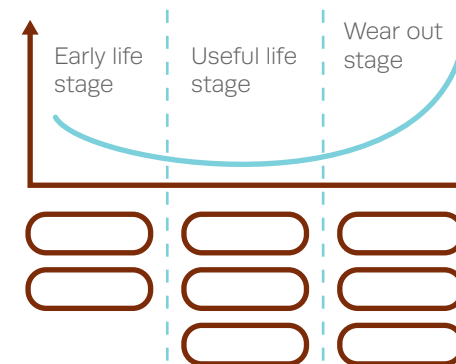
// Accounting Categories

Service Agreements

- Installation & Commissioning
- Training
- Spares & Consumables
- Maintenance
- Repairs
- Engineering & Consulting
- Advanced Services
- Ext, Upgrades, Retrofits
- End of Life Services
- Replacements

// Revenue Based Categorizing

- Digital services
- Value–add services
- Base services

// User Need Based Categorizing

- Performance Improvement
- Operational Efficiency
- Life Cycle Management
- Rapid Response

// Process Based Categorizing: Life Cycle

- Early life stage
- Useful life stage
- Wear out stage

Above are different ways to categorize the services that have been used at ABB Drives.

3 Research
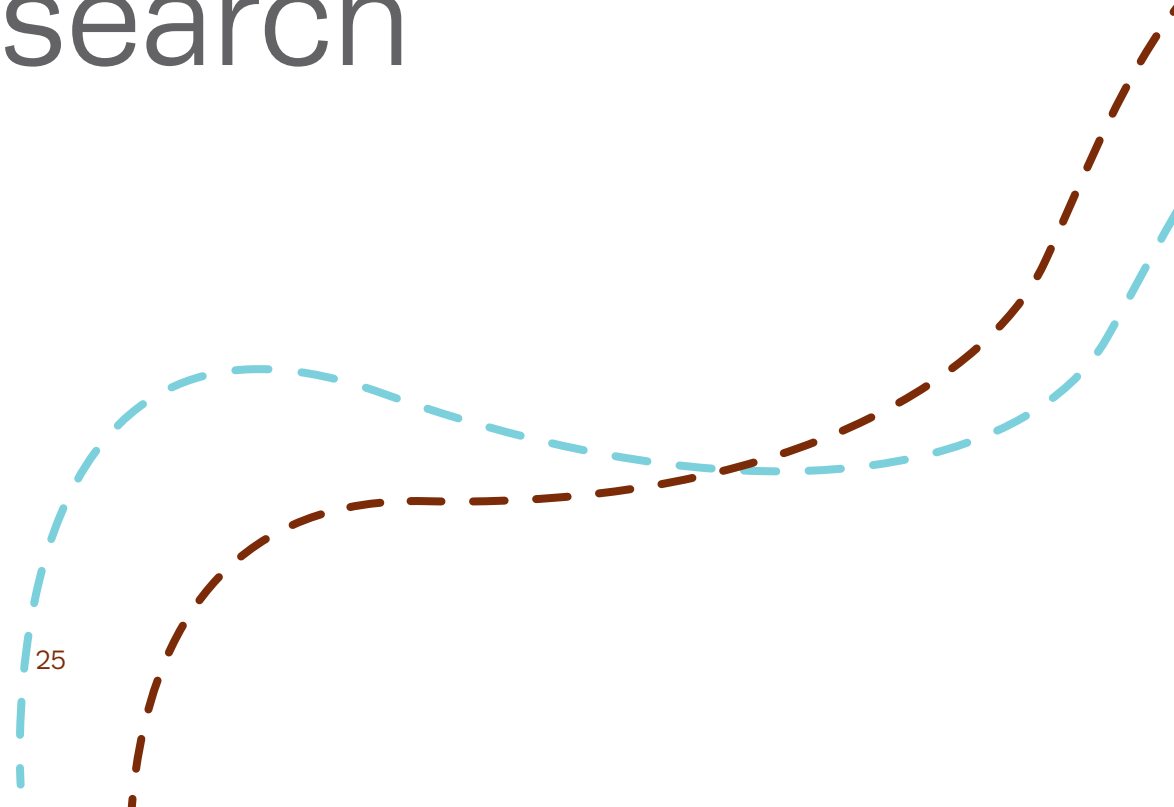
3.1 Benchmarking

The two main competitors in the drive market for ABB are Siemens and Danfoss. I benchmarked their services related to the drives and also services from other fields of technology that they have to offer. What made the benchmarking challenging concerning my thesis and topic, was the fact that the service portfolio I'm dealing with in ABB is for internal use, so I couldn't get access to competitors' equivalent ways of showcasing their services to their employees.

To broaden the benchmarking, I looked into other technology companies and their service offerings. Once again, I had to content myself with the material they let customers to see. The technology corporations I chose to benchmark were Nokia Networks, IBM, General Electric, and Cisco. The idea was to choose several companies that settled broadly across the field of technology.

The overall conclusion after the benchmarking process is that the way of communicating the services to the customers is rather traditional. Usually, the websites have brief descriptions of each service and the collection or portfolio of the services is displayed just as a listing of the services. Because of the restrictions for internal materials, I cannot take a stand on what is the way of communicating the portfolio to the own personnel in other companies.
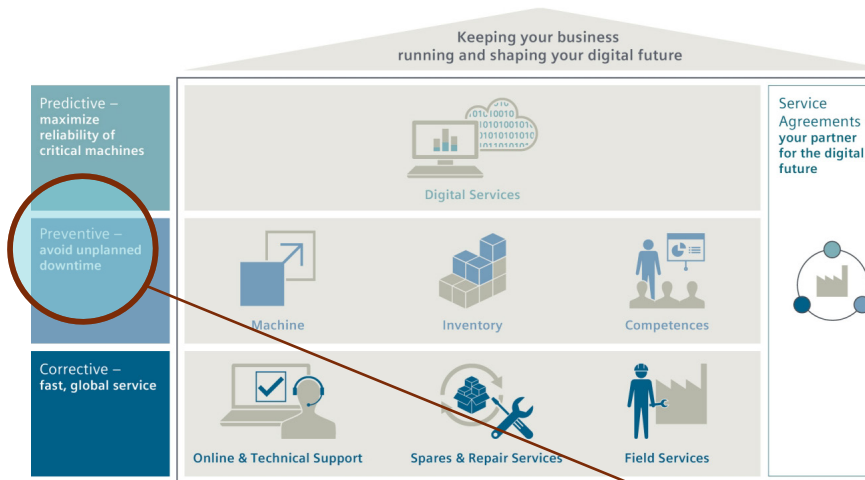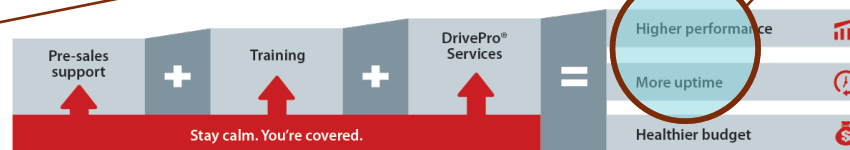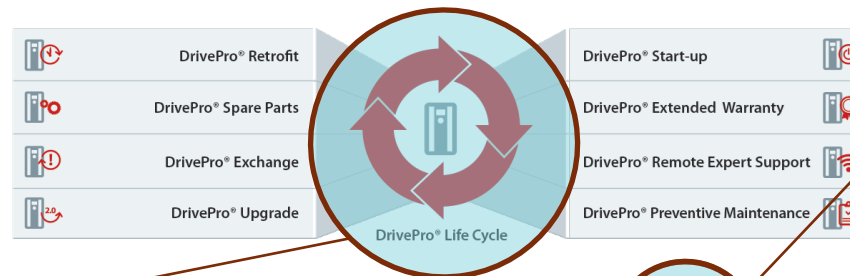
Competitors' Ways of Showcasing
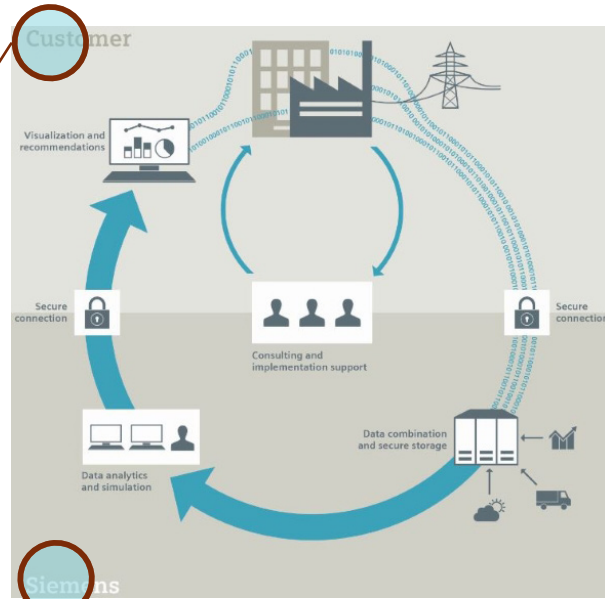
Pictures 7. Siemens Digital Services. (Siemens 2017)

Pictures 8. Siemens Service Overview. (Siemens 2017)

Picture 9. Danfoss DrivePro® Services. (Danfoss 2017)

Siemens uses a graphic illustration that is divided into the customer and the provider sections. It does not give so detailed description of the actual process but it has to be reminded that this is mainly for marketing use and not to fully present the process.

Life cycle is used at Danfoss as the basis for showcasing the services. However, it doesn't truly show in the visualization which service is meant for certain stage of the life cycle.

Competitors use the benefit based categorizing of the services. The overviews are in general level and the visualizations are simple and easy to understand for the end–user, the customer.

Traditional Ways of Showcasing

Picture 10. General Electrics Power Conversion Services. (GE 2017)

Picture 11. Cisco Services. (Cisco 2017)

Picture 12. IBM Systems Services. (IBM 2017)

The most used way of showcasing the portfolio is presenting the categories as blocks or as plain listing. The categories are based on the services' features or for which field of the company's competence the services are targeted.

Case: Nokia Network's Way of Showcasing

Nokia Networks user different ways of showcasing its service product portfolio. Whether the way is flower like (Picture 13) or based on a timeline (Picture 14), it is visually appealing and shows a lot of information.

Although there are some cons with the pros. For instance, the timeline (Picture 14) is more of a history of the services than presentation of any relevant infromation about services.
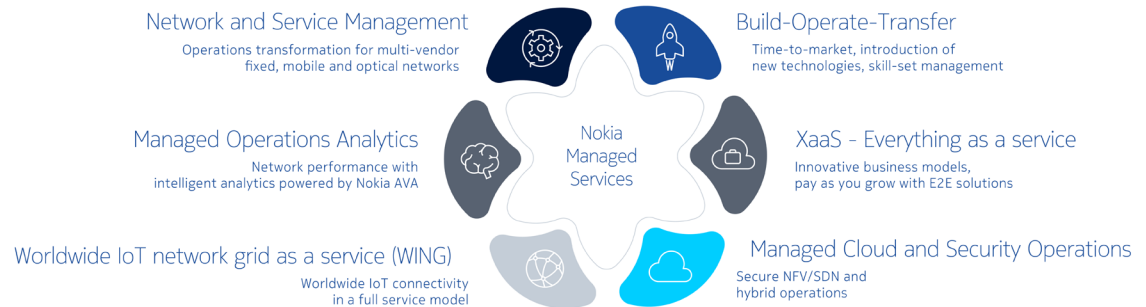
Picture 13. Nokia Networks Managed Services Flower. (Nokia Networks 2017)
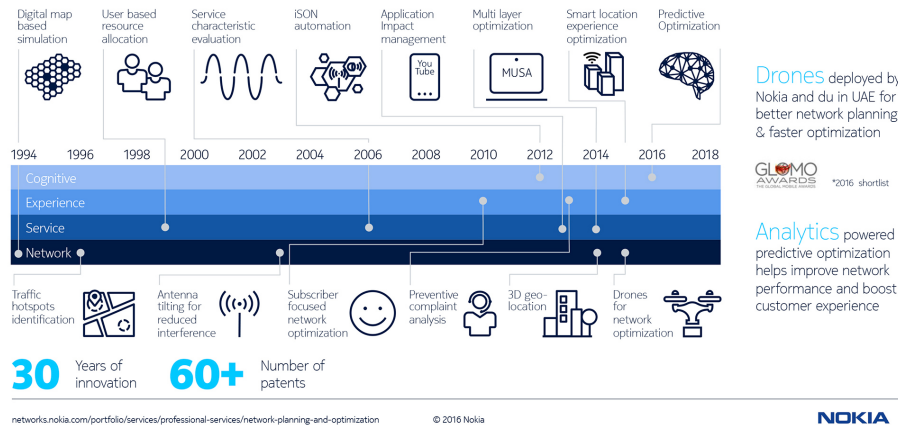
Picture 14. Nokia Networks services. (Nokia Networks 2016)

Picture 15. Listing of Nokia Networks Managed Services. (Nokia Networks 2017)

3.2 User Profiles

The SharePoint site, on which the portfolio is showcased, is used among various types of users that deals with sales, product management and operational matters. Because the portfolio is displayed on the site, the users of the site are the ones for whom the communicating of the portfolio is also for. The visualized structure of the service products is specifically for the ABB personnel and not to be published publically. Although, the visualized portfolio could be used in sales activities and so be helpful in customer situations.

For my thesis, the approach is limited to three user groups that mainly operates on the site. These three main user groups are the Global and Local Product managers and the sales people in the local ABB sales units.

// Global Product Managers: Responsible of a certain service product. Creates and distributes material and information of services in the service product portfolio.
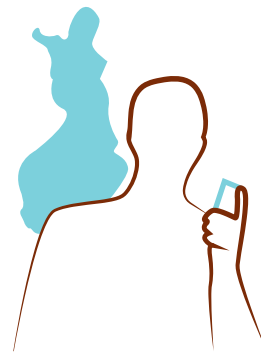
// Local Product Managers: Responsible for localizing services. Reads through the material that has come from the global level and either translates it or orders the translation to the local language. Creates and updates the local version of the global site.
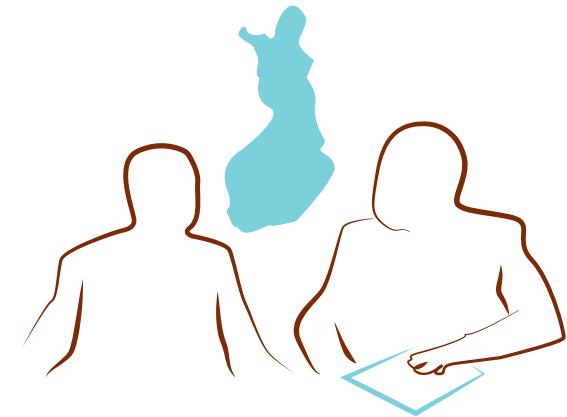
// Local sales people: Goes in for information that can't be found from the local site. Checks whether there is more recent material on the global than on the local site.

3.3 Gathering User Insight

3.3.1 Interviews

In order to gather the user insight on the Drives Service product portfolio and the global SharePoint site, I conducted few user interviews. I chose the method of user interviews because I needed to get close to the users of the site and to get the first hand insight about the service product portfolio and how its communication is understood in the local sales units. Pirkko Anttila writes about the conducting of interviews that when the knowledge in need is about various persons' attitudes, opinions, experiences or observations (as is in my case) different interviews and questionnaires opens up as research methods. The methods can be defined according to the researcher's distance to the subject and what are going to be the analyzation methods. (Anttila 2000, 230)

Roughly, the persons to interview were chosen based on their position and the using of the SharePoint site. At this point, I was in the position to determine who and how many to interview. The dilemma is the same that Christopher Crouch and Jane Pearce describes in Doing Research in Design (2012, 69–70). They point out that in qualitative research, it is enough to understand in some depth the experiences of a small group of people and the involvement of large numbers of participants is impractical. Because the focus is on the global level and also on contrary, the local ABB units, the interviewees were from the local ABB in Finland. The choose was also based on the location and on the idea that after the interviews, there could be further gathering of insight from other countries' local ABBs.

The interviews were conducted as theme interviews. As Sampsa Hyysalo describes, in the theme interviews, the interviewer has structured the interview but it is conducted more openly and with adaptating to the interviewee's answers (Hyysalo 2009, 132). The reasons I chose the theme interview method were the fact that I didn't know all the facts and practices involved in the topic and the freedom the more openly structured interview gives in the situation, which can lead into discoveries outside the defined questions. In fact, according to Hyysalo, theme interviews are useful in determining the actions of the users when the interviewer has some knowledge but is not sure that all the meaningful facts are known. Also the openly structured questions can lead to even surprising findings. (Hyysalo 2009, 132)

Interviews were constructed roughly of four themes which were discussed during the session. The themes were the current SharePoint site & the portfolio, using the site & portfolio, information (what kind of information and in what form) and localizing. I held three separate interviews and they were held in Pitäjänmäki office and although one was conducted via Skype connection. The sessions were recorded and I also took notes during the interviews. Afterwards, I transcribed the interviews based on the audio recording and my notes. The transcription was done to help to understand the content and for the analyzing phase that would follow after all the interviews were held.

//Themes that the interviews followed:

1. Current SharePoint site
2. Using the site
3. Information, (in what form, what kind of)
4. Localizing the global model

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3.3.2 Survey to Other Countries

After the interviews were conducted, transcribed and lightly analyzed, it was clear that some insight was going to be needed also from other local ABBs. The insight from those other countries was going to be acquired in order to back up the findings and thoughts that had risen from the interviews in Finland. After all, it was the communicating of the global portfolio that was in the development, so the other countries were also to be taken into account.

In the beginning of the design process, there were discussion about interviewing subjects also from other countries via Skype or teleconnection. It turned out after some consideration that it wouldn't be necessary to gather the insight abroad via interviews. The insight could be gathered also with some less time–consuming methods. There were several reasons for the choosing of another method besides the interviews. Firstly, the fact that it would be more reasonable to use the first interviews as the base of the research and to back up those with some other way of gathering the insight. Secondly, in order to stay on the schedule of the design process, it was more effective to find methods that are not so time consuming, keeping in mind the extent and the time frame of BA thesis.

The optional method was chosen to be an online survey. The questions were defined based on the interviews and the results from those, to support the findings that arouse from the results. The survey was constructed with Surveypal because the Design team has license for the service. Survey was designed to be brief and to–the–point and it was a mix of open questions and choose–a–choice questions.

The survey was sent to people in three different countries and market areas that ABB has the interests to grow on. The specific countries chosen to be China, USA and Germany. The subjects for whom the survey was sent, were a small group that was specifically picked. There were subjects from two of the three defined user groups: local sales persons and local product managers. Expectations for amount of the answers weren't too high, more vital was to get the correct people to answer and get some valuable insight.

// Part of the actual SurveyPal questionnaire

4 Results & Analysis

4.1 User Insight Analysis

4.1.1 Interviews

After the user interviews were conducted and transcribed, I divided them to sections according to the themes that were used in the interviews themselves. There were repeating notions that occurred in different theme sections varying on the context, e.g. the localization topic arose in almost all the themes and not just in the interviews' part about localizing. Because the themes were rather vast and held more sub themes underneath, I did some reconstruction concerning different topics. I clustered the interviews and made some deductions from the results. The clusters were current SharePoint site, current materials, challenges in sales activities, English & translations, localizing and improvements from the users.

When we discussed on the SharePoint site that is in use at the moment, there were slightly different opinions about the overview of the portfolio. The sections on which the service products were divided was seen as logic and rather easy to understand and that was something both the manager level and sales worker level agreed on. However, the Service Agreement being positioned on top of all the other services was interpreted differently varying on the position of the interviewee, managers felt it to be on the right place but sales personnel interviewee was confused of the position. The local head of sales and product managers, who uses the global site more often, discussed also how they utilize the global structure of the portfolio when turning it into the local version.

The discussion concering current materials and the challenges in the sales activities might not be relevant for me in this thesis but there were some important insight regarding the bigger picture of improving the service portfolio and the communication. Interviewees felt that current leaflets, service product descriptions and the division between customer and personnel material are important and there is no need to change them. Although the sales personnel's point of view was that in the customer situations, the material could sometimes be a bit too complicated. In addition, according to sales personnel, sometimes it is challenging to argument certain services for customers if there is presumptions among customer. For instance, one competitor sells drives as maintenance–free and that makes it challenging for ABB sometimes to sell the maintenance services.

Some remarks arouse from the themes of localizing and translating of the global site. Firstly, the global site wasn't that familiar for the sales representitive. The localizing and translating were seen as resource consuming in the manager level and interviewees spoke about that it would be beneficial to have some sort of best practices about the localizing process. Besides that, the notion of ready–made solutions and examples of service sales was something that was seen as important and what isn't offered globally at the moment.

The users also gained some ideas about what could be new features or improvements to the current situation. As earlier mentioned, there were wishes of a model or a frame of the portfolio and the site that could easily be used when creating the local version of the global one. In addition, the option of seeing what solutions other countries have carried out, was mentioned as a new feature that could be useful. Or as one interviewee said, the global site should be a door to everywhere. The benefits for the end–users of the services should also be argued more bravely in the site and the visual aspect could support all that in general.

In conclusion, the interviewees were quite pleased with the overview of the global site and no major changes are necessary according to the user research at this point. However, I made some conclusions that will matter in defining the design drivers for the concept. The localizing aspect have to be considered in the outcome so that it needs to be easily translated and communicated in different countries. The showcasing of the services should also have clear visual style so it doesn't distract the user.

"

We have a similar site, to make it easier to navigate the global site.

Drive Service should more bravely argue with the benefits.

I don't think it is necessary to recategorize the services.

The way the services are grouped should be supported by the visuals.

"

4.1.2 Survey

From the survey, I drew some conclusions that are in line with the findings of the actual interviews. The quantity of the answers isn't essential in the qualitative research, it is the few chosen participants and their answers that matter the most. From that point of view, I managed to gain helpful feedback that supports earlier research.

Overall, the global SharePoint site and the portfolio overview were familiar in all of the target countries and the site is in weekly use for at least with the managers. Usually, the site is used for looking up information of services and contacts. It is also the forum for checking up all the latest information. One subject said that in the future it will more likely to be used to better understand the offerings and how they align with local offerings.

The overview of the portfolio is experienced among the participants as simple and intuitive. The main page / overview of the portfolio is found make it easy to spot the services and material related to those. Mentions of features that would be helpful to have in the site are related to the discussion in the interviews earlier. Case studies or ready–made solutions are mentioned as well as the claim for braver value positioning and details about the services' benefits to the end user.

As predicted, I found out that the interviews were a good way of getting relevant user insight because the feedback from the survey supported the insight gotten from those interviews. The results are a good basis, in defining the design drivers.

"

I will likely use it more often in the future to better understand the offerings.

I think it's simple and intuitive.

I think that a lot of the material –– could use more value positioning and details about the benefits of each service to an end user.

It would be helpful to have more case studies/success stories.

"

4.1.3 Summary of the Results

As conclusion, the user research revealed certain aspects that have to be taken into notice solution wise. User research shows that there are things to be improved but the categorizing as such is something that the users are pleased with. The current method is mostly understandable and practical as such, according to the users.

What is notable, is that the localizing itself needs to have some sort of enhancing. The global way of showcasing the structure of the portfolio is used when localizing the local ABB's sites. So the improvement doesn't have to consider those categories but the localizing should be taken into account. The means of visualization could be the answer to that.

The depicting of each service is seen to have pros and cons currently. The improvement could deal with bringing the benefits more to the foreground so the arguing about the services could be more efficient in customer situations. In relation to that, every country is going through the same challenges in sales and also making solutions to those challenges. So the option of seeing what other countries have come up with is a feature to be considered.

4.2 The Design Drivers

Based on the brief, results of benchmarking and the user research, I defined four design drivers that are going to be criteria that are used when evaluating the design decisions.

Design drivers that guide the design of the concept:

Has to visually help the understanding of the services.

Has to be a helping tool in the localizing process.

The differences / relations between services has to come clear.

Has to be suitable for the ABB Brand.

4.3 Debriefing

After the first half of the design process, it is time of defining the brief. In this case, the brief was given and defined rather detailed in the start of the project by the client and me, so at this point it is preferred to revisit the original brief. Some changes occurred and the circumstances have changed during the process, so instead of defining the brief, there is enough of reason to do some debriefing.

Firstly, at the middle of the project it turned out that it is more reasonable to deliver only one concept than designing also another one as it was suggested in the brief. There was an idea about the second concept engaging somehow virtual aspects but it is not essential to explore that field in this thesis. It would not be implemented as a virtual tool and it would not even be suitable in the meaning of being just a way of showcasing the service portfolio.

Secondly, the decision was made on an iteration meeting (8th of May) with Ilkka Kihniä, the Head of Global Service Management team, that the concept of displaying the portfolio should be revolving around the idea of categorizing the services according to the resources they're delivered on: workshop, on–site, helpdesk etc. That is an idea that is not directly drawn from the user research. However, this major design driver was added to guide the designing of the concept.

5 Solution

5.1 Towards the Concept Design

I started designing the concept by sketching with Adobe Illustrator. The sketches were simple and pretty rough but the most important thing was to figure out the different options of visually categorizing the services. I used basic shapes to sketch the services related to each other and those sketches were supposed to be only the first round. But some iterative sessions with the client showed that these ideas weren't something to continue with.

I continued the sketching and had some references from different kinds of maps that for me and based on the research I did, would have suited to be a way of showcasing the portfolio in a new way.
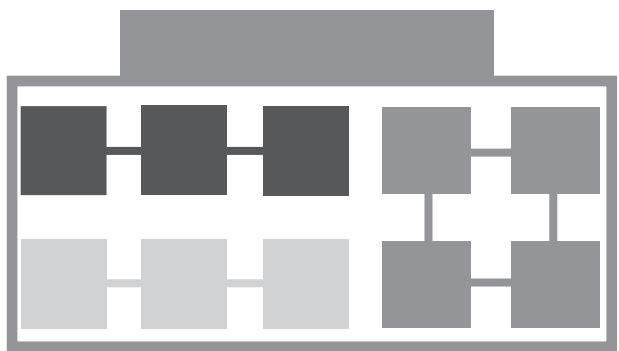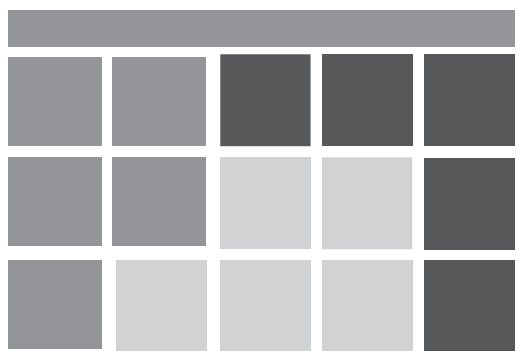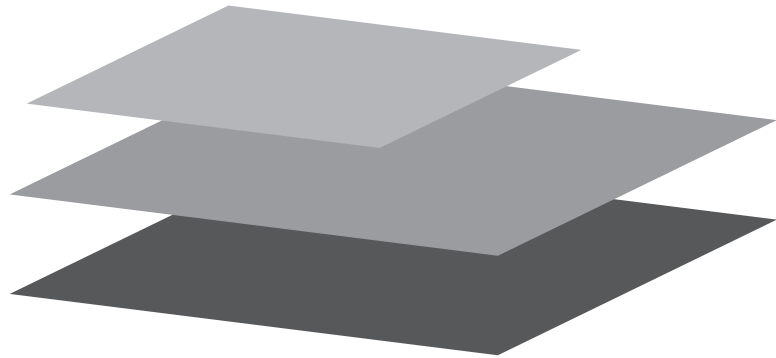
Sketches of the Base/Value–add/Digital based categorizing of the service products. The colors and also the sizes and relations of the shapes would be the defining factor. In the early meetings with the client, it was hoped to somehow incorporate the Base/Value–add/Digital service product categorizing. So that is the reason for the three different colors.
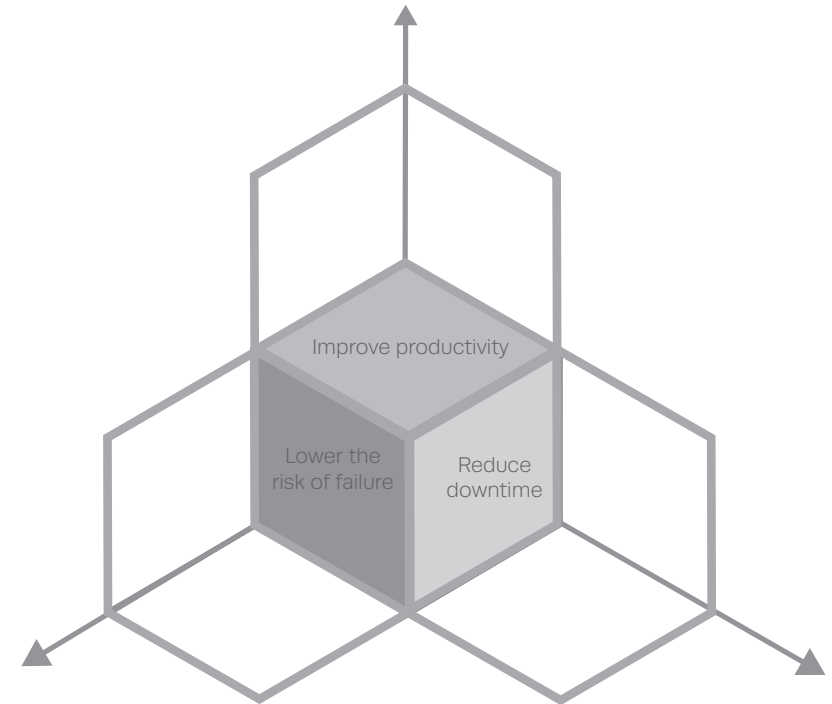
From the user research, it was clear that the representives of the local ABB sales units wanted to have some kind of stronger approach from the benefit point of view. I suggested that the services could have been presented with three categories (Lower the risk of failure, Reduce downtime and Improve productivity). The client disagreed because the services are not easily divided into these categories and that approach was left aside.

5.1.1 Iteration

I held a couple of iterative meetings with the client, which had an effect to the final concept of the showcasing of the portfolio. I shared my ideas and concerns in those meetings and I had some good iterative feedback. That was essential because I naturally didn't have the knowledge o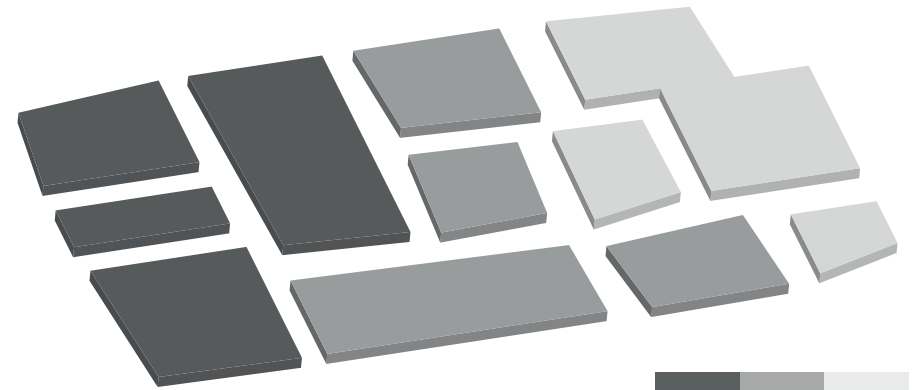f the services and the reasoning behind categorizing. For example, I got information on what the base, value–add and digital services are and what could be new ways of dividing services into categories.

However, decisions were also made that didn't really go along with the benchmarking and user research. I presented the results of the user research but the choice was made by the client not to take those into account. And that is why some of the ideas I had did not get a pass from the client and we decided to change the focus from the users slightly towards a more client–based solution. After all, I had reasoned with my findings but in the end client has the final word.

After the first iterative meeting, happened the debriefing that I described earlier in this thesis. From that meeting, I added one more design driver. There were some changes again after that debriefing, about the categorizing of the services. The delivery based categories altered again and those eleven categories were merged and shifted the contents a bit by the client and me. Some kind of undescribed wow–effect was desired by the client but I argued that just seeking a wow–effect could lead into missing the original goal of delivering the message via internal communication.

As a result, the focus shifted even more away from the original brief of improving the showcasing of the portfolio and the actual SharePoint site, with the sales personnel as one of the main user groups.
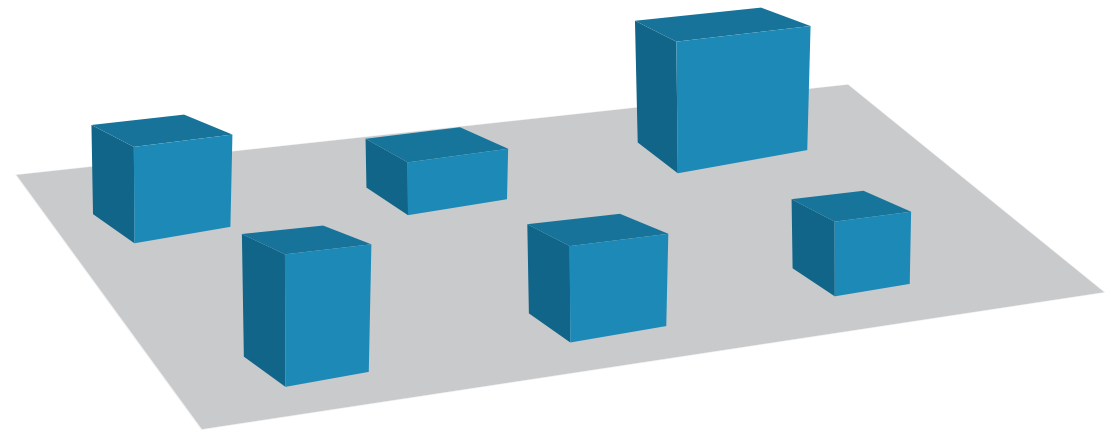
Sketches of approaching the portfolio and the categories from a map perspective.

43

Service Category

Life Cycle
Management

Performance
Improvement

Operational
Efficiency

Rapid
Response
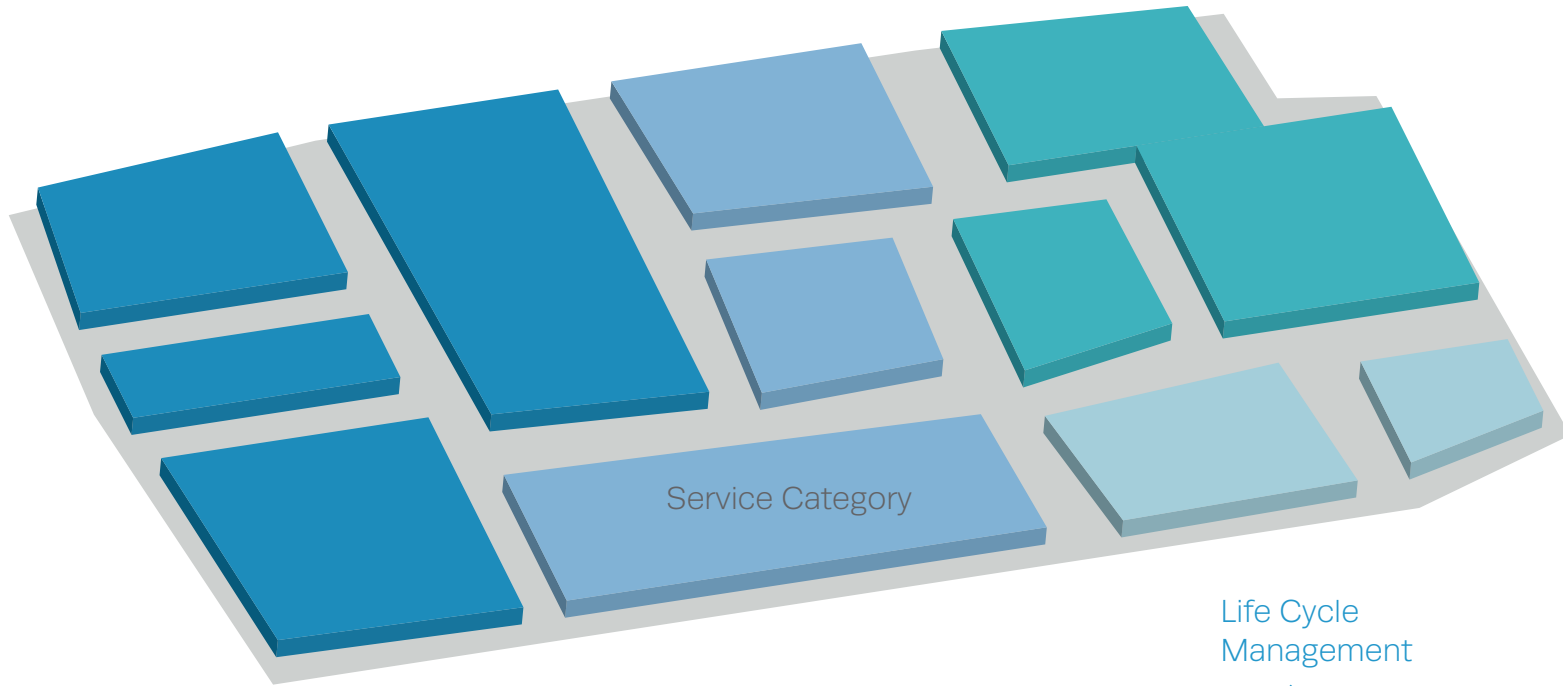
The services were recategorized by the client as a new way of looking at the services. I suggested to use a map–like visualization of the portfolio. The "buildings" being the categories. New categories based on the delivery or the resource they depend on as follows:

Support Services

Spare Parts Sales

Consulting Services

On–site Services

Workshop Services

Retrofits, Upgrades & Modernization

Advisory Services

Contracted Services

Predictive Maintenance

Remote Assistance & Remote Condition Monitoring

Optimization
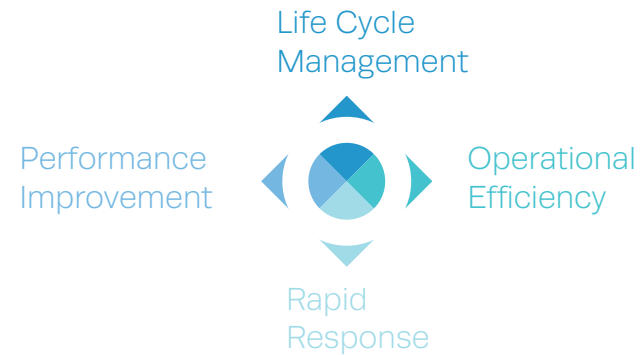
Based on user research, I tried to combine the benefit based approach to the visualization with colors and a compass that would have fitted to the map. However the client did not want to proceed with this approach, so I did not continue to develop the idea. The map was meant to have 3D symbols representing the categories but I did not go there based on client's wishes.

5.1.2 Reconsidering the Design Drivers

The design drivers that I defined earlier after the first half of the process changed a bit in the debriefing that happened after some iteration with the client. In addition to the four drivers I defined, I added one more. The fifth design driver came from the iteration session the client and that shifted a bit the direction of the concept.

Has to visually help in the understanding of the services.

Has to be a helping tool in the localizing process.

The differences / relations between services has to come clear.

Has to be suitable for the ABB Brand.

Delivery based approach to the services.

Has to include also the revenue based categorizing.

5.1.3 ABB Brand

I wanted to keep the relation to the ABB brand as a design driver so the outcome would fit in the ABB material from the brand perspective. However, I didn't want to go too deep into the brand guides because there might have been some restrictions that would have been too much of an obstacle.

I chose to take into consideration the guidelines for using some of the brand elements. The basic brand elements include the ABB logo, the ABB font called ABBvoice and also the brand colours and the red ABB cursor (ABB Brand Portal 2017). It is not essential for me to use all of the brand elements, but for example the ABB logo is important to keep in the design.

ABBvoice

// ABB Brand Elements. (ABB Brand Portal 2017)
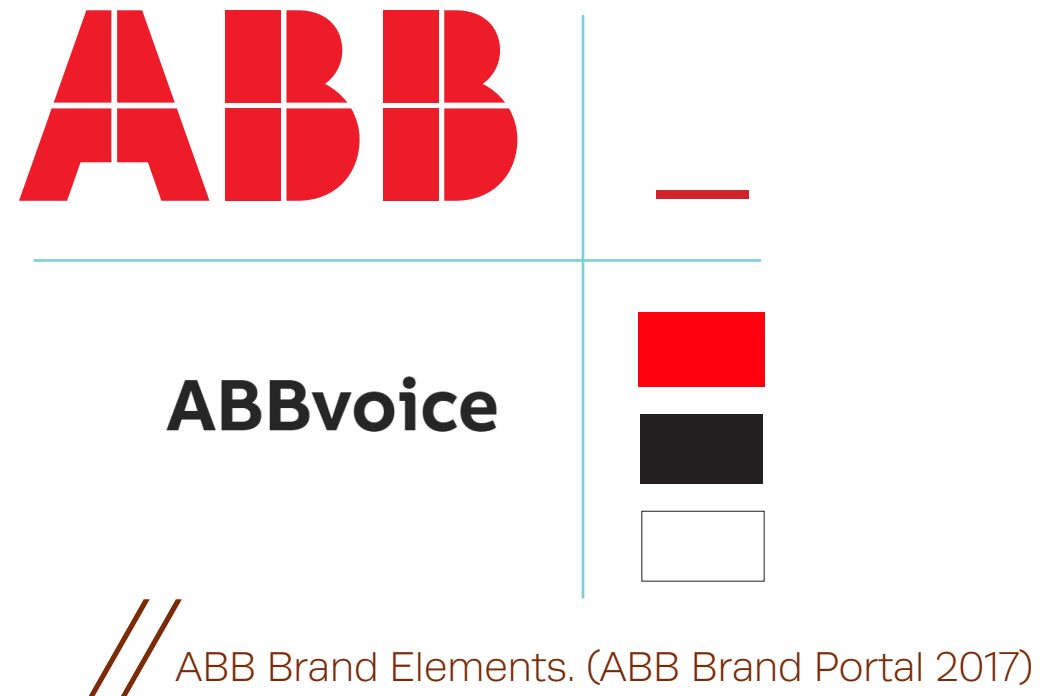
5.2 The Showcasing of the Service Product Portfolio

5.2.1 The Service Product Categories

In order to keep the user–centered approach all the way to the end of the concept, we kept iterating with the service categories with the client. Client had recategorized the service products to eleven different categories based on the delivery of those services.

I was keen on having less categories because that would be the more user friendly way. The less categories, the more there are confused readers of the portfolio. We got a few categories off the client's suggestion and there were eight categories left. Those service product categories were based still on the delivery point of view. In addition to that, the delivery categories can be organized under the Base/Value–add/Digital categories.

Workshop Services	Consulting Services	Contracted Services
Support Services	On–site Services	Predictive Maintenance
Spare Parts Sales	Advisory Services	Optimization

Retrofits, Upgrades & Modernization

Remote Assistance & Remote Condition Monitoring

Workshop Services	Spare Parts Sales
Training & Support	Advanced Services & Consulting
Contracted Services	ABB Ability™ for Drives
On–site Services	Retrofits, Upgrades & Modernization

5.2.2 The Drives Service Product Portfolio

The final proposal for the showcasing of the services is a simple visualization that shows the services categorized in two different ways: the Base/Value–add/Digital categories and the new delivery categories which has eight different service product groups. The global showcasing of the service products is easily localized and can be used as the main overview of the portfolio on the SharePoint site or on a leaflet. Services are depicted and categorized based on the delivery of the service product.
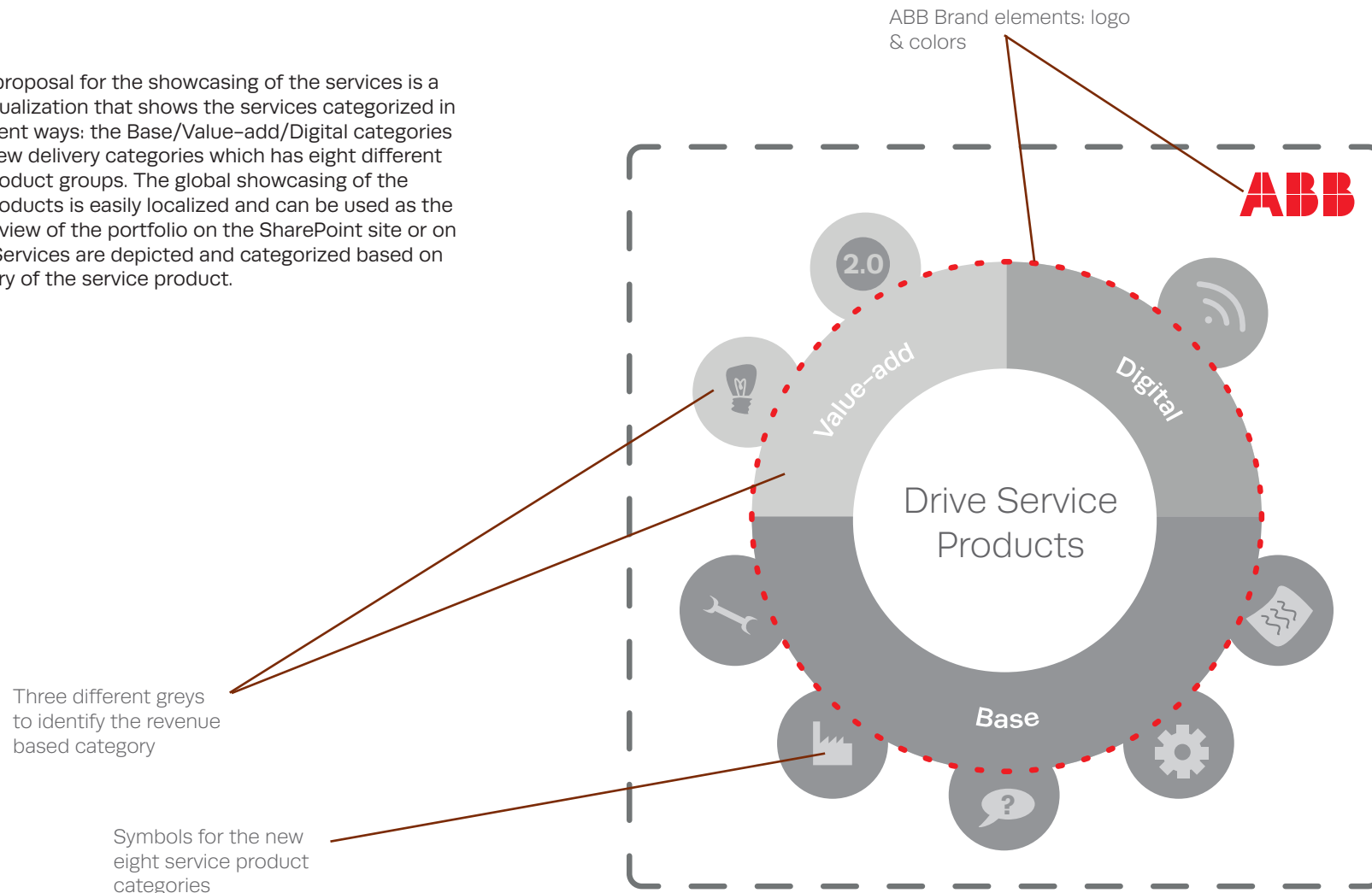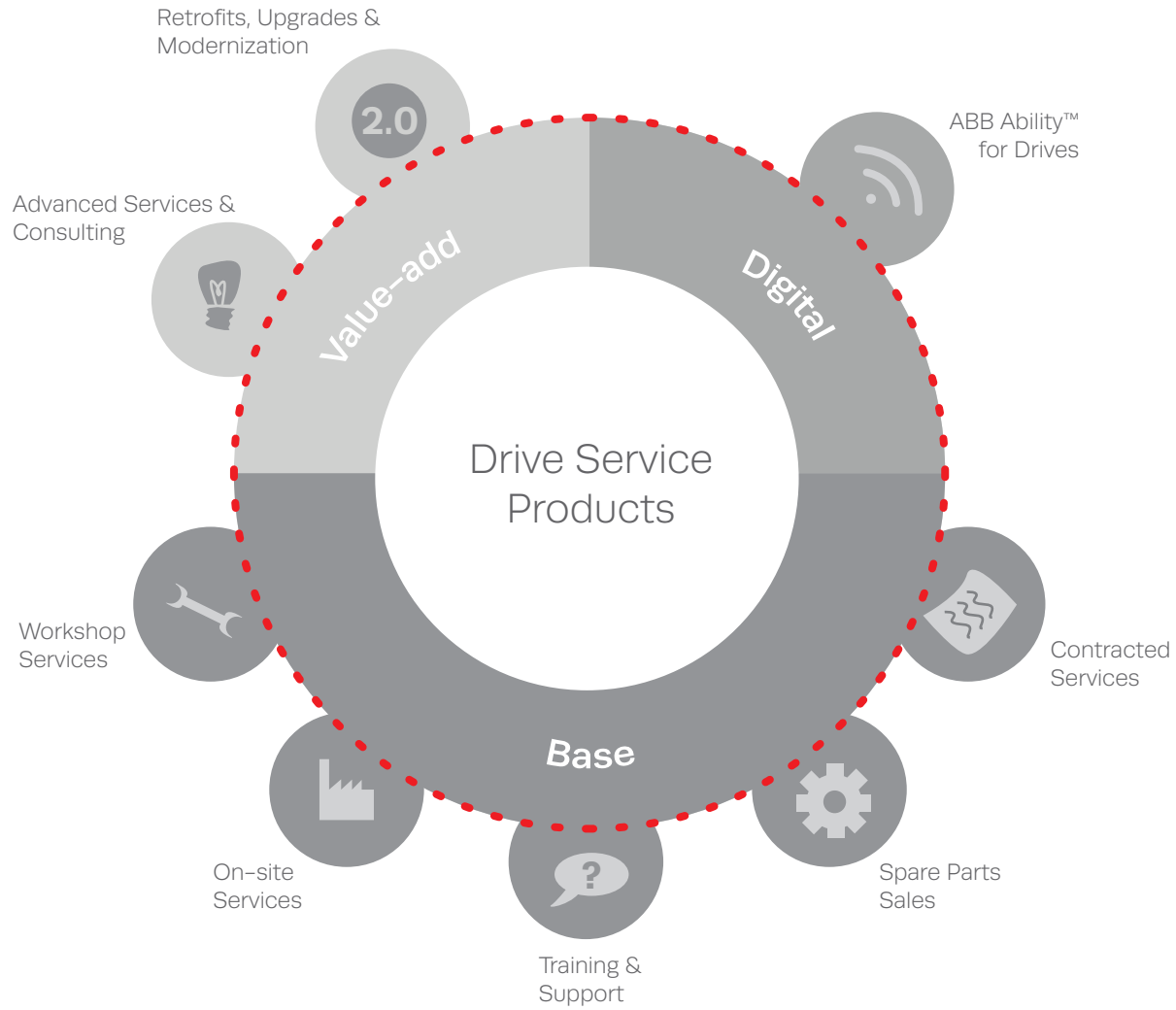
ABB Brand elements: logo & colors

ABB

Drive Service Products

Value-add

Digital

Base

2.0

Three different greys to identify the revenue based category

Symbols for the new eight service product categories

Retrofits, Upgrades & Modernization

2.0

Advanced Services & Consulting

ABB Ability™ for Drives

Value-add

Digital

Drive Service Products

Workshop Services

Contracted Services

Base

On-site Services

Spare Parts Sales

Training & Support

6 Discussion & Conclusion

6.1 Discussion About the Process

The thesis process was very intensive throughout. The most obvious challenge I had, was learning to know the organization, working methods and the people in ABB Drives. That had to happen the same time I began the thesis process itself. Also the fact that I had only about two and a half months to accomplish the whole process, affected the process in couple of ways.

Firstly, I realized right from the start that there weren't any room for taking a break of the work. I had to move forward basically every day of those months and I had to have some kind of progress every single day. I had no chance to take any distance into the process. On the other hand, that is a good lesson, keeping in mind the professional growth goal I set for myself in the beginning.

Secondly, the tight schedule didn't give that many chances to start things over. The decisions I made were something I had to live with, so to speak. With a little looser schedule, there could have been the option of doing some things again or going towards a totally different direction. A case in point is the debriefing that happened rather late on the process. If I had more time, I could have gone a bit more into that direction and maybe involve the users in those new ideas.

However in the overall perspective, I managed to achieve the things I wanted to. The schedule I planned in the first week held till the very end. So that proves that I managed to hold all the strings in my hand in spite of some challenges with the changing of the brief by the client. It can be said that I can work under pressure, at least from my own point of view.

6.2 Further Development

This concept is not going to be implemented at its current state. Next steps should be iterations with users and going more deeply into the services themselves and how they are depicted in the portfolio. In addition, it was mentioned in the very beginning of the process that this thesis could be related to a larger context regarding the improvement of the service product portfolio. The notion goes all the way back to the first session with the client when we defined the first brief.

One aspect in further development is the SharePoint site itself. There were many findings in the user research which supported the notion of improving the site. At this point, the global SharePoint site is kind of incomplete when it comes to the features. That has been in talks of being something that could happen in the summer to come.

It is possible that the delivery channel based showcasing of the portfolio is going to be dealt with in greater detail. However, it needs more research from the global service management team itself of how the services are described through that categorizing and also what are the benefits of categorizing the services in that way. The showcasing of the portfolio could be displayed via some kind of leaflet that would make it easier to the staff to share the information.

Now. ··········▶ **?**
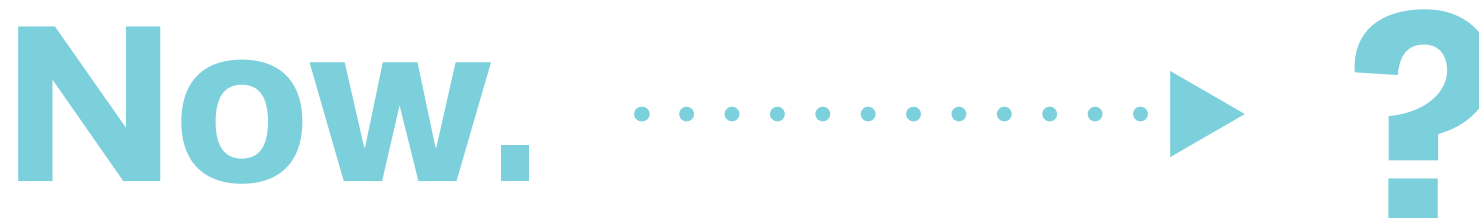
6.3 Conclusion

The original brief was quite of a challenge in the beginning to get a hold of but I got a grasp of it after some time. So from that perspective, achieving the solution to the service design challenge that I defined, shows that this project was successful. Although the slight shift in direction after the debriefing, I managed to meet the expectations that were set at the start. The users and also the client's expectations were taken into consideration in the final outcome.

Being able to deliver my thesis for a company like ABB, is a huge advantage in the future. Although it was challenging to get to know the organization in relatively brief time, it has proven to be also a good lesson. Adapting into new environment and active listening were skills I developed further during this process. In addition, the global aspect and the merging of design into the field of cutting edge technology are areas I want to explore more in the future.

One good lesson I was thought in this project, concerns the applying of theories and methodology. I wanted to take into consideration the methods of service design, UX design and information design. Although they worked as a solid basis for my work and there were some authorities to rely on, I feel that especially in this case, some of those theories had to be left aside a bit, due to the briefing and debriefing challenges.

The personal goals that I set in the very beginning of this thesis were met at the end of this process. For me the most important achievement I got from this, is the self–confidence as a designer. Going through this intense period of working with ABB Drives Service product portfolio has proven to me that I can take responsibility of this kind of projects. The overall managing of the design process was a success in these time limits and restrictions.

I wanted to pursue better the usage of design research methods and that is something that I got just a glimpse in this thesis. The ones I utilized in the process could be looked into in deeper level later, and I hope I can do that in my later studies in the Master's programme.

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Interviews

User Interview 1 Portfolio Management at ABB. March 24th 2017.
User Interview 2 Local Sales Personnel Point of View. March 27th 2017.
User Interview 3 Local Product Manager Point of View. April 4th 2017.
User Interview 4 Local Head of Sales Point of View. April 5th 2017.

Images

Pictures and illustrations are mine if not stated otherwise.

Picture 1, Picture 4, Picture 5, Picture 6. ABB Media Bank 2017. (May 17th 2017)

Picture 2 & Picture 3. ABB Drives Service 2017. (May 17th 2017)

Picture 7. Siemens 2017 <https://support.industry.siemens.com/cs/sc/2262/digital-services?lc=en-WW> (May 17th 2017)

Picture 8. Siemens 2017. <https://www.siemens.com/global/en/home/products/services/industry.html> (May 17th 2017)

Picture 9. Danfoss 2017. <http://drives.danfoss.com/services/drivepro-services/#/> (May 17th 2017)

Picture 10. GE 2017. <http://www.gepowerconversion.com/services> (May 17th 2017)

Picture 11. Cisco 2017. <http://www.cisco.com/c/en/us/services/overview.html> (May 17th 2017)

Picture 12. IBM 2017. <https://www-935.ibm.com/services/fi/fi/it-services/systems/index.html> (May 17th 2017)

Picture 13 & Picture 15. Nokia Networks 2017. < https://networks.nokia.com/services/managed-services> (May 17th 2017)

Picture 14. Nokia Networks 2017. < https://networks.nokia.com/services/network-planning-and-optimization> (May 17th 2017)

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Attachment

The SurveyPal questionnaire:

Fill in your name, title and country.

1. Are you familiar with the global Drives Service Sharepoint site? (multiple choice)

2. How often do you use the global Drives Service Sharepoint site? (multiple choice)

3. How does the global site support your work in the sales activities? (open question)

4. What do you think of the service product portfolio overview on the site? Does it improve your understanding of the services? (open question)

5. Is there a local version of the Drives Service site? (multiple choice)

6. If there is a local site, how does the local Sharepoint site differ from the global one? (open question)

7. What sort of things would be useful to share with other local ABB units in the global site? (open question)