

Design thinking tools in creating business growth

Case: Canon Oy, printing service for microcompanies
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The purpose of this thesis is to connect business growth to design thinking. The case company is Canon Finland. This thesis is limited to Canon's B2B business and products; more precisely on office printing. The market is dropping and finding growth needs new measures. The purpose of the developmental research of this thesis is to create a shared printing service to the specific needs of micro companies in Finland. This new customer group represents a new potential to the company and the methodology, a new way of finding uncontested market space.

Besides the service development work, the powerful connection of design and business growth is made. Several theories of business growth and service design are portrayed, the central theory being the blue ocean theory.

Methods of service design are used to create the service. The stages from customer understanding to service explaining were numerous and the process was an iterative and emphasizing empathy, co-creation and understanding the user. Following the process, a service Print&Go was created. The blue ocean tool, strategy canvas, suggests also dimensions that Canon will have a competitive advantage in.

The conclusion is that design can be a strong contributor in finding a blue ocean for an organization. The service Print&Go brings also new features to the new and untouched market of shared printing services.

Key words

Service design, design thinking, printing, blue ocean, growth

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1 Introduction

In the modern business world, all companies are building their future on growth. We live in an era of intensified competition and companies are finding sustainable ways to grow and improve their position in the market. (Kotler & Rath 1984.) These possibilities are further discussed later on in the thesis. Blue ocean strategy by Kim W. Chan and Renée Mauborgne is a known and recognized theory of finding uncontested market space and growth. This shift to an ocean without direct competition is appealing to many, and in the future filled with various business models and diluting industry borders will be a necessity of survival.

Design thinking is becoming ever popular within the companies. Design thinking discipline can be defined as a way of thinking and a method to tackle problems and thereby produce the best possible customer experience. (Maula & Maula 2019, 19). Several issues are often related to design thinking. These are for example understanding customer needs, redefining problem areas, utilizing different viewpoints, making ideas concrete by prototyping, and early trials and learning from them. Design should be utilized in different parts of the organization to guarantee success. It is also quite common to see design as a catalyst for strategy, thereby using design tools to generate new business models and creating innovations. (Maula & Maula 2019, 1-2.)

The development project of this thesis is a service design project commissioned by the Canon Finland organization. The project itself is tying the two main theories together, blue ocean strategy and design thinking. The project, printing service for micro companies in Finland, shows the fact that the customer segment, micro companies, has not been a primary target group for companies such as Canon. Together with the actual service developed, through this research the company wants to understand what type of needs and wants does the group have and for that task, service design methods are ideal.

1.1 Canon

Canon is a global company in the field of digital imaging technology and services providing them for consumers, business-to-business and industrial digital imaging

customers. Canon Europe is operating also in the Middle East and Africa and is employing 25 000 people in 120 markets. (Canon 2019.) Canon Finland is a part of Canon Europe. Besides being responsible for business operations in Finland, Canon Oy takes care of sales and marketing activities to Estonia, Latvia and Lithuania.

Canon business is divided into two separate entities; business-to-consumers (including sales to professional photographers) and business-to-business sales. Furthermore, Canon Oy is present in the market through its own sales operations, but also through a reseller network. Canon, in its B2B operations, is operating in the field of information management in Finland. This means that the company is offering hardware, software and related services related to information and data management. Canon is operating based on a circular strategy based on information flows and technologies, which is combining its offering from the data capture to the output solutions. In between there are solutions for document management, document storage to name a few. The empirical part of this thesis is focusing on office printing.



Figure 1. Canon strategy is built based on increasing the value of knowledge.

As such, Canon Finland is a very high performing company. Measured on market shares, Canon is number 1 in most of the product areas it is operating in. The company resources are directed mainly to the MPS business (managed print services), where the target company size is bigger. At Canon, the services to micro companies is limited to selling hardware through IT distributors and various resellers (retailers, mass market, integrators etc). The needs of micro companies

are very different to those of bigger customer and therefore they need to be researched.

1.2 Background and scope of this research

This thesis is written to emphasize and make visible the powerful coalition between design thinking and business growth. The perspective is also rather concrete, as the empiric results are achieved by using methods of service design. The author has long worked with strategy related issues, namely product and service strategies in various positions. In these positions it has become clear that there are several ways to build sales of named products and that tools to achieve that goal can be various. In this area, using design is still limited and therefore the study subject is extremely interesting.

The scope of this research is limited to the printing service that the chosen target group needs. The scope therefore is to contribute to the development of a future product that Canon Oy aims to sell to the target customer group. By differentiating the offering of printing services Canon wants to growth in this customer segment.

1.3 Research goals and questions

The goal of the development project of this thesis is to produce a clear picture for the company of the needs of micro companies for a printing service. The goal is also to deliver the company a clear plan of the service of the future, including a business model canvas outlining aspects of a business model and a blue ocean strategy canvas giving directions on competitive advantages and focus areas. The basic assumption of the project is that there are users who want to own the printer, but this thesis and development project is focused on the users who want to access printing as a service.

The other goal of this thesis is to produce a report to the use of the company in the form of making visible the tools of service design. The background work related to introducing design into the organization management has been done and the results of this thesis will be further introduced as concrete results of the thinking and methods.

In the development project, the research questions are:

1. What kind of printing service micro companies need?
2. What are the key factors of a successful printing service for micro companies in Finland?
3. What kind of business model is most suitable for Canon, in order to service micro companies?

A sub question to answer based on this thesis is:

What type of changes in the printing need are seen in the chosen target group?

In Canon organization, the feasibility and positioning of the services available is reviewed constantly.

The completion of the project in total has been made during spring 2020. The project has been a course work on Service Design course at Haaga-Helia. The development project has been a group work, where the author has been a part of a group of 4 students. The role of the author has been to act as the company representative to the group and also as a member of the group practicing service design. This dual role made the company internal information and expertise easily accessible, yet also made the author give extra attention to issues such as bias. The groundwork of introducing the importance of service design tools to the company had been made and sponsorship from the company was easily received due to this.

1.4 Theoretical framework of this thesis

The theoretical framework of this thesis is two-fold. Firstly, the strategy framework of blue ocean strategy gives the boundaries that companies, such as Canon Oy, need to grow. According to blue ocean strategy, the growth can come from uncontested market areas. This strategy is selected due to its approach to growth, which is to find the market area from new and innovative directions, it also emphasizes the value creation for the customer. Design thinking is a powerful tool which can also be utilized to create growth (Frazer 2007, 66). In company contexts, service design tools are often used in projects which ultimate goal is to find new services or products to a company. Design thinking can also be utilized

as a mindset. The tools of service design will be used to complete the development project for Canon. The case study will integrate the two theories together and also give a concrete example how a company can implement design thinking into developing growth in a competed market.

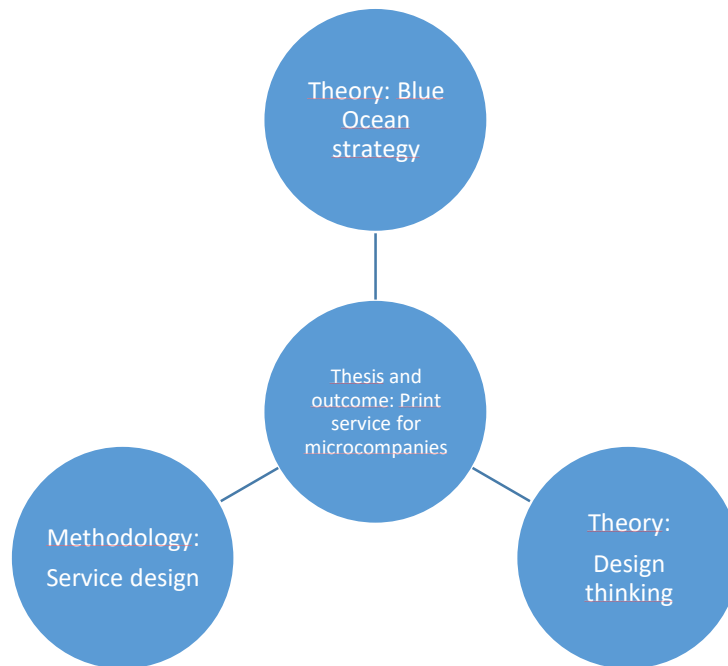


Figure 2. Theoretical framework of the thesis

1.5 Structure of the thesis

The thesis is constructed from 6 parts. First part is the introduction to the thesis and to the research questions. Printing market and key trends affecting printing are explained. The justification for the limitation of the thesis is also portrayed. The second part is introducing the theories of growth also design thinking is introduced. Remarks are made in relation to design as a catalyst for innovation and also about the connection of service design as a tool for growth.

The third part is discussing the important concept of human-centred research. Also, the connection between service design as a research method will be made. Overall, this chapter is combining the theories to practise.

The fourth part is about the methods and process of the empirical part research of this thesis; the printing service for micro companies. The methods will be introduced in the order of use and also the application to this research is displayed in detail.

The fifth part is introducing the results of the research. References to the company shall be made to also make the benefits of the approach visible for the reader of this thesis. Also, the research results in relation to the original research questions is discussed. Lastly, the fifth chapter also introduces the valuable and powerful alliance between design and business growth.

The sixth and final part of this thesis is discussion. This part is underlining and summarizing the thesis and the learnings of it. Validity and reliability are discussed as well as the business benefits to the company. Further research areas that are interesting are highlighted and further research is suggested on these. Lastly, a reflection of the learning experience is summarized.

1.6 Printing

It can be said that printing is a way of communicating. Printing is a way to deliver a message to the target audience in a form of published material. This material can be newspapers, magazines, books, brochures, product packaging or office prints to name a few. (Vault 2020a.) Later in this chapter the delimitation of this thesis in relation to the printing industry will be discussed.

As the history, printing was originally invented in Ancient China. Paper was invented 105 a.d. and the first book was printed in year 868 with wood blocks and ink. The European market started to pick up printing as late as the 1300's only. The book printing industry developed rapidly in the 20th century towards digital printing. At the same time that printing became a digital process it also went through a transformation for example in the need of craftsmanship needed in the process. (Vault 2020b.)

The history of office printers began in the 1930's. Chester Carlton invented a printing process called electrophotography, which was a base technology for the

now common laser printers. (Bellis 2019.) Currently many manufacturers produce printers with several technologies. Canon is involved in producing office environment printers with ink jet and laser technologies.

In the 1970's HP made inkjet technology operated printers affordable for the home users when launching the DeskJet -product line. In the 1990's HP also released the laser technology printer targeted to the home market. (Bellis 2019.)

In this thesis, other printing is left out and only the office printing is in scope. When adding the dimension of micro companies to this context, both technologies inkjet and laser are considered. This leaves out printing of books, magazines, packaging and such collaterals.

The environment of office printing has rapidly changed during the past decades. Already in the end of 20th century the industry was changing rapidly due to the influence of internet. (Vault 2020a.) The trend is clear that companies are moving quickly into digital processes. By 2025, 66% of organization's personnel is estimated to be mobile, an increase from today's figure. This change is increasing the amount of remote and field workers, also new collaboration platforms and tools are needed to accommodate the needs of tomorrow's workforce. (Quocirca 2019, 6.)

In relation to printing, the changes are affecting so that organizations want to reduce the amounts that they print. Also, companies are looking to better integrate the paper and digital processes. 49% of organizations see this as top priority compared to 25% of today (ibid).

Already since 1975 there has been discussion about paperless office. In that year, Business week -magazine published an article 'the office of the future', where it was anticipated that all offices will be paperless in the 1990's (Business week 1975). This prognosis has not realized but as seen previously, companies are having digitalization of paper processes as their priority. The market is changing for print vendors evidently.

In Finland to look at the office printing market, the best and most used way in the industry is to review the figures of shipped printer and multifunctional units. According to statistics, the shipments of small laser and inkjet-based printers and multifunctional printers has decreased with 12,6% from 2018 to 2019. The respective decrease from 2017 was -7,3% (DMR 2019). At the same time, the shipments of office multifunctional devices decreased with 1,7% (DMR 2019).

Taken into consideration these statistics, the future of printing is that the volumes of office print are decreasing. This is why, print manufacturers are also preparing for the future and making measures to renew their business. Top 3 features that customers are expecting from the multifunctional printer of the future are wireless connectivity (61%), built in security features (59%) and cloud printing (54%) (Quocirca 2019, 28). These are areas where the print vendors are innovating in among other initiatives such as sustainability and user experience.

Furthermore, as stated before, Canon is strong in the Finnish market. In 2019, the overall market share in office printing machines (multifunctional units) was 25% (number 2 in the market) and in laser-based machines (smaller printers) was 10% (number 3 in the market).

Given the fact that the market is declining, and Canon has a strong position, the topic of this thesis was seen as a priority in finding new growth. The market is very competitive with several direct competitors in the same area. The theories of growth will be discussed further in chapter 2.

1.7 How people utilize print today

A key defining factor to portray the use of print today is the habits of the users. In a study made by Wardour, it was discovered that 61% of answerers think that it is easier to read a long or complicated text from paper or screen. Also 54% of respondents say that it is easier to concentrate when reading paper opposed to reading from screen. (Wardour 2018, 15.) This is also shown in figure 3 below.

Deep and meaningful

Print scores highly when the story gets tricky
and when you want the message to stick

	Agreement	Male	Female	18-24	25-34	35-54	55-64	65+
It's easier to read a long or complicated text on paper than on screen	61%	56%	65%	50%	56%	56%	65%	74%
It's easier to concentrate when reading paper/printed material than reading on screen	54%	50%	58%	46%	49%	51%	53%	66%
I'm more likely to remember something i've read printed on paper than on screen	44%	39%	48%	41%	38%	39%	46%	55%

Figure 3. Majority of people consider reading from paper better (Wardour 2018)

The digital channels are increasing their importance, especially amongst younger generations. Yet, paper is a powerful media and people tend to like to consume content from both in digital and traditional paper-based channels. (Wardour 2018, 20.) Yet the consumption of print is declining, there need for print will always be valid.

2 Finding new ways to grow business

The strategical context of this thesis is growth strategies. After all, Canon is also pursuing growth in all its operations. From the perspective of theories, several routes can be taken when organizations want to reach growth. Central theories of growth strategies are discussed and finally, the Blue Ocean theory will also be portrayed.

2.1 Strategy

The first steps of strategy were taken already in 400 b.c when a Chinese general Sun Tzu created a strategy to be very victorious in the war battles. He wrote a book, *The Art of War*, which is a central book on strategy. In his book, there is a complete philosophy to defeat your opponent and it has given guidance for strategists all over the world. (McNeilly 2011, 11.) Since these times, the goal has been to defeat to opponent and gain better results in war, which can also be translated to competition in business life.

Businesses find the best ways to improve profit and beat competition. In this they utilize strategies. Many theories and different views can be pointed out with ease. Michael Porter can be seen as a central figure of strategic thinking. He sees that strategy is firstly about creating a unique position for a company by a combination of customer segments and products. Strategy is also about choosing the area to compete in and also not to compete in. Finally, strategy sets out the tools to compete with. (Porter 1996, 1.) Henry Minzberg states that strategy is about thinking ahead and having a creative vision for the future of the company. Strategy has to be planned but it is also taking place in the organization on different levels. (Minzberg 1988, 85.) Minzberg is interestingly combining the organization and individuals to the crafting of the strategy. This view is an important one when discussing the research work where users and customers have been included into the planning work of the new service.

To continue introducing the central theories of business growth, in the following, Ansoff, Porter and blue ocean strategy will be depicted since they are central

theories that are related to company strategies. Blue ocean strategy will be dealt in more depth since it is a part of the theoretical framework.

Also, strategies for innovation can be seen as strategies for growth. An interesting strategy of market shaping will also be introduced.

2.1.1 Market shaping strategy

In simple, the market shaping is a strategy to make a market adapt to the company and not vice versa as the normal thinking would be. When a company is involved in a certain business, the market should not be adapted to but rather companies should drive the market. (Nenonen & Storbacka 2018, 1 & 21.) The most innovative companies also do not think of defining the market size by the exchange value (value of products sold in currency) but take into the account the use value of the products. Use value is the value that the customer and user experience of the product. (Nenonen & Storbacka 2018, 19.) Behind this is the ideology that the value is central to defining the market and also influencing it. Thinking about the market as a complex and shapeable gives companies more room to grow and create new ones. (Nenonen & Storbacka 2018, 36.) Uber is good example, they are regarding the market much more than only cab rides, yet, they are thinking about the whole experience and the value of the service to the customer. Thereby they have created a bigger market for themselves than just the cab rides.

The market shaping strategy is illustrated as a fan. In this fan (see figure 4) all the layers are described that make a company able to shape their market. In this view, there are much more dimensions to take into consideration compared to other theories. (Nenonen & Storbacka 2018, 40.)

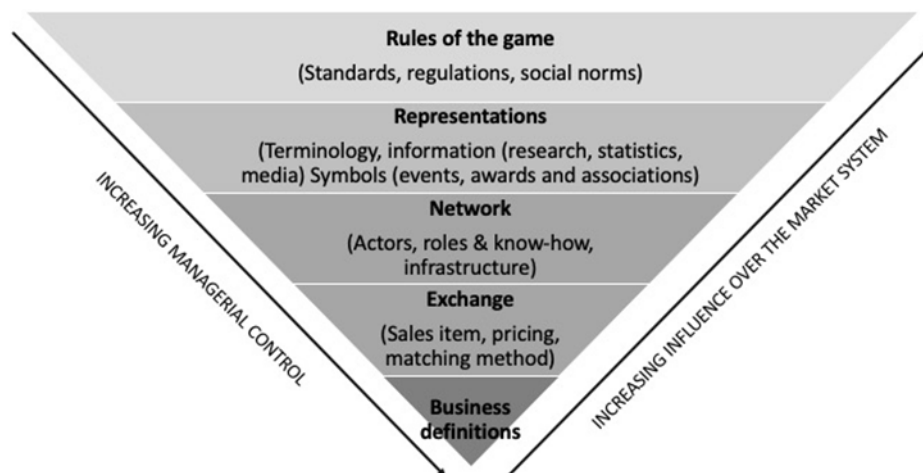


Figure 4. The market fan theory presents a broad vision of aspects to consider when finding growth. (Nenonen & Storbacka 2018)

The business definition is the core of the fan. In this layer, the company should identify and frame the business it is in. The model is suggesting that the companies should see beyond the product and geography and rather define the value to the customer and through that the market that it is in. (Nenonen & Storbacka 2018, 52 & 57.)

The exchange layer includes dimensions that are also up to the company to decide. These are for instance business model, products in sales, pricing models and prices. (Nenonen & Storbacka 2018, 41.) The network layer is about the different actors and instances in the market ecosystem. These actors can be other companies, associations and interest groups. The groups can for instance help the company to spread an innovation further. This network is normally reaching beyond the immediate value chain of the company. (Nenonen & Storbacka 2018, 43.) In the case of Canon and printing, these actors can be associations for paper and print with stakeholders from other companies and the paper industry. The actors can also be consumers that would be educated about the benefits of using paper copies while studying or reading as opposed to screen. Infrastructure could be the network availability for instance.

Representations layer discusses the dimensions of for instance industry awards and events. These shape the market and make them more established in the eyes of the customers. As an example, in healthcare, patients were labelled clients to empower them more and less passive. (Nenonen and Storbacka. 2018, 43.) In the case of printing, the representations could be for instance to position print services in circular economy services and thereby participate in competitions or exhibitions within that area.

The last layer, the rules of the game, refers to laws and standards that are current in the chosen market. The big players are able to influence these and as a company is thinking about shaping the market, these should be included in the work. (Nenonen & Storbacka 2018, 44.)

The theory of market shaping is considering factors affecting a company broadly. It is also defining different viewpoints from which a company can start. It has some similarities to Blue ocean strategy in terms that the latter strategy is also discussing the shapeability of the market itself and the importance of defining correctly and thoroughly the market entered.

2.1.2 The Ansoff matrix

The Ansoff matrix was created by Ivan Ansoff in 1957. The matrix is designed for companies to plan their growth. The theory presents that there are 4 ways a company can grow: market penetration, market development, product development or through diversification. (Ansoff 1957, 113.) These possibilities are presented in the matrix below.

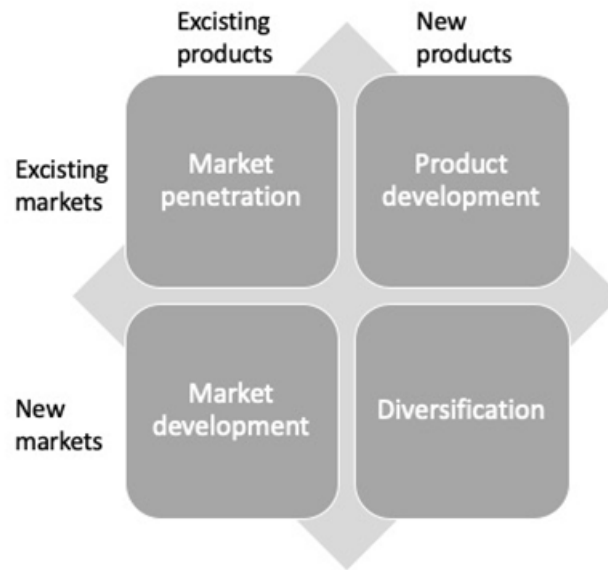


Figure 5. Ansoff diversification quadrant choices for strategy. (Ansoff 1957)

The matrix is designed that through completing it, companies can choose the correct product/market combination that is the basis for the growth strategy. Along with other strategic tools that Ansoff has created, the product/market grid helps companies identify their competitive strategies out of these 4 possibilities

1. Market penetration. The growth strategy is to increase the sales of the current products in the current or existing market. In practise this would mean increasing of market share.
2. Market development suggests that the products are the same, but the market is new.
3. Product development. This growth strategy is selling new products and services into existing markets. This can be achieved by creating a new product portfolio or developing the existing product line-up.
4. Diversification. This strategy is about selling new products and services in new markets.

To further develop the strategy for example related to the products, Ansoff has created a diversification matrix to determine the level of novelty of the new products. This matrix is called the diversification quadrant. (Van Assen, Van Der Berg & Pietersma 2009, 5-7.)

As the comparative matrix is explaining, whereas the blue ocean strategy is based on value innovation of the product or service, the Ansoff quadrant displays 3 alternatives where the product or market are known to the company and one which is requiring a new product to a new market.

2.1.3 Porter strategy

Michael Porter has greatly influenced the field of strategy. He has created two interconnected strategies that are meaningful for this area of the thesis: Model for 5 forces driving industry competition and 3 generic competitive strategies.

In his 3 generic competitive strategies discussion, he states that for a company to be able to outperform their competitors, they are applying one or a combination of these strategies:

1. Overall cost leadership
2. Differentiation
3. Focus

Overall cost leadership requires rigorous cost and overhead control regarding all areas of business. Also, marginal customer accounts should be avoided. By cutting costs and operating on a lower profit structure than competition, the company is able to set apart of competition.

The strategy of differentiation is about generating a position with products or services, that customer perceive as unique, even though they can be industry wide. This strategy is connected to having above industry earnings by creating brand loyalty and lower sensitivity towards prices.

Lastly, the strategy of focus is created when a certain niche is served extensively. The niche can be a market area, a product like, buyer group or segment. Having a niche approach may generate higher returns and thereby profitability as well. (Porter 1998a, 35-38.)

To reinforce the strategy, Porter created also the thematic for 5 competitive forces that companies have to take into account when considering competition. The five forces depict the strength of the competition and structure of industry profitability. The five forces are threat of new entry, bargaining power of buyers, threat of new substitute product or services, rivalry among existing firms and bargaining power of suppliers. (Porter 1998a, 4-6.)



Figure 6. Porter forces of driving industry competition (Porter 1998a)

Moore is discussing in his article that the Porter strategy of 5 forces does not take into account that industry limits are fluid now than when the strategies were born. It is much more blurred that what is the industry the company is in. (Moore 2011.) This dimension of markets limits changing is taken into consideration in the market shaping strategy and blue ocean strategy.

Declining market

Michael Porter is also discussing the strategies of a declining market. There are several strategies to consider when market is declining. Porter is suggesting that the most common strategy is harvesting, where companies are eliminating investments, generating maximum cashflows and eventually divest in the markets.

Other strategies to consider would be to create a position of leadership. In this strategy, a company is creating a situation where it will be one of the last companies in the market. Another strategy suggested is identify a niche of a growing or stable demand. This niche should be carefully invested in. (Porter 1998b, 109-110.)

In the case of office printing, we can talk about a declining market. The volumes are declining, and printing habits have changed over the recent decades dramatically. According to Porter strategy of a market in decline, the printing service targeted to micro companies would be creating a niche for the company. This idea is interesting can be thought as a foundation to the printing service, that is developed.

2.1.4 Blue Ocean strategy

The strategy of blue ocean is a work that has resulted from research of over 30 years. The authors state that the beginning of the strategical work was the situation in mid 1980's when American manufacturers started losing markets for Japanese corporations. (Kim & Mauborgne 2017, 14.)

It was also seen that the aftermath of Japanese corporates making substantial foreign direct investments to for example the car industry, that the competition will be tougher (Kim & Mauborgne 2017, 14). This was also a time when global competition started to become a reality.

Businesses exist in two different kinds of universes. The red oceans represent the known market areas. In these, the boundaries are well defined and understood. Companies make efforts to outperform their rivals for market share. The blue ocean can be discussed when talking about industries that are not existing today. There is also a good opportunity for growth both in profitability and speed. A company can create a blue ocean from their red ocean market space by altering the boundaries of their market. (Kim & Mauborgne 2004.)

Blue ocean theory is about seeing the market area from two perspectives. A way to explain the blue ocean is to define the opposite, red ocean. The red oceans are

the market areas where all the organizations are fighting over the other today. Figure 7 shows the differences of a red ocean to a blue ocean regarding certain dimensions.



Figure 7. Red ocean strategy differs from blue ocean strategy in many dimensions. (Kim & Mauborgne 2005)

Value innovation

Blue ocean strategy, as the market shaping strategy as well, is also driven by the customer value. Blue ocean strategy is pushing companies to innovate on their value. Value innovation is a strategic logic that a company can choose to have. Instead of trying to beat competition, the focus is in the value that the company's products and services are creating to the customer and the company. (Kim & Mauborgne 2005, 13.) This is resonating with the core goals of design thinking and service design; to increase the value and usability of products and services produced to companies and consumers (Maula & Maula 2019, 19).

Traditionally the value trade-off has been seen so that companies can either produce greater value with higher cost or then reasonable value with lower cost. The theory suggests that it is possible to create high value to customers with a low cost. (Kim & Mauborgne 2005, 16-17.) The figure 8 below shows the value innovation, which is a corner stone for the Blue Ocean strategy.

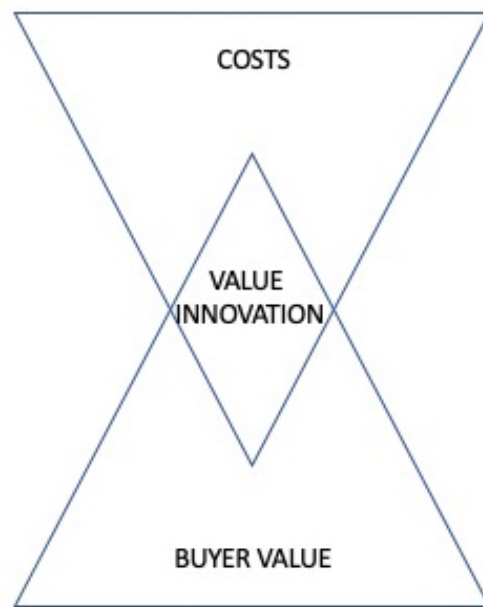


Figure 8. Value innovation, Blue Ocean strategy. (Kim & Mauborgne 2005)

Strategy canvas

An important tool in blue ocean strategy tool kit is the strategy canvas. This canvas is used to understand the current state of competitor offering but also planning for the strategy of the company's products. The canvas maps out what the customer is receiving by purchasing and using the competitors' products or services. In the horizontal axis all factors and structures of the industry in question are mapped. (Kim & Mauborgne 2005, 25-26.)

Strategy canvas template

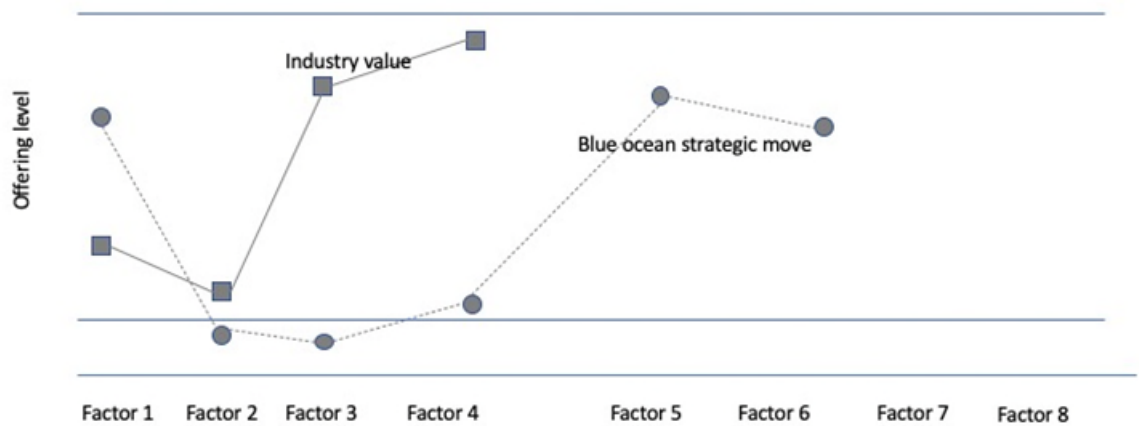


Figure 9. Blue Ocean strategy canvas template portraying the industry average and the blue ocean strategic move (Kim & Mauborgne 2005)

The strategy canvas also illustrates which are the functionalities or features in a product or service that are needed less and what are needed more. It is recommended also that companies shift their thinking at the same time to focus in alternatives rather than competitors and noncustomers instead of customers. (Kim & Mauborgne 2005, 27-28.) This would suggest that in the case of Canon print service, the focus would be not to compete direct print service providers such as HP, Xerox or local print shops but rather concentrate on other operators. The strategy canvas is directing the thinking from the people who print now to also extend the market to people who would benefit from prints.

A logical step forward is to think that what are the elements that the customers value in the product or service. This leads to the question that for example, what can be eliminated from it. This is resulting the creation of the new value curve of the product or service. The four actions framework lays out the dimensions that should be decided on when thinking about the new value curve that will be offered. (Kim & Mauborgne 2005, 29.)

These dimensions should be considered:

- Which factors that the industry is taken for granted can be eliminated from the product or service?
- Which factors should be reduced below the industry average?
- Which factors should be raised above the industry average?
- Which factors should be created that the industry has never offered?

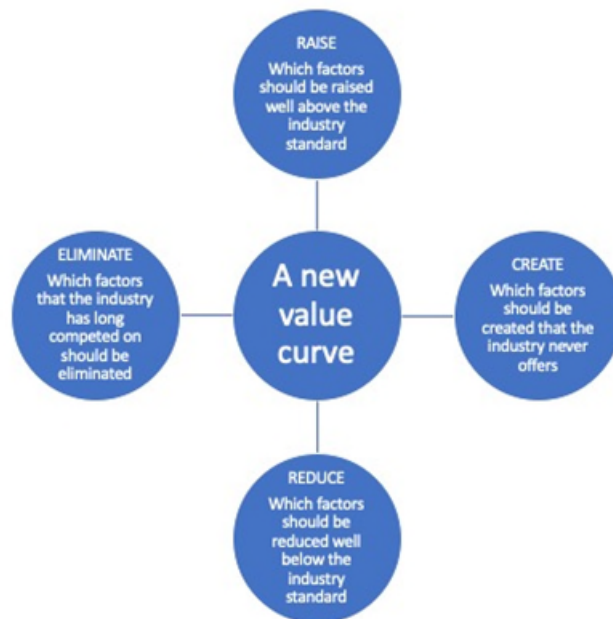


Figure 10. Blue ocean strategy four actions framework help create a new value curve (Kim & Mauborgne 2005)

The elimination question is about going through the features of the service provided that have competed on. These features should be looked at critically to determine whether they are still creating value. If it is found that customers do not value the features, they should be eliminated. (Kim & Mauborgne 2005, 30.)

It can also be that companies have been overserving their customers. In this phase of the grid, this should be considered and to improve the value curve, these features should be reduced well below the industry standards. (ibid.)

Regarding the third question, companies should think of the compromises that the customers need to make currently and evaluate whether they should be raised

above what competition is offering. (ibid.) The last dimension unlocks new areas that create value for the customers. This also shifts the strategic pricing possibilities. (ibid.)

The last tool to introduce is the eliminate-reduce-raise-create grid. This is the canvas where the results of the four actions framework are input in the form of actions on these dimensions. (Kim & Mauborgne 2005, 35.) By filling in the grid, companies need to think about their differentiation and value creation abilities. The grid is also a visual tool to show if only raising or creating tools are used, yet it is important to also eliminate and reduce in order to improve the value curve. Completion of the grid also helps companies to assess their products or services from every angle of their operations. (Kim & Mauborgne 2005, 36.) The four actions framework and the eliminate-reduce-raise-create grid precede the formulation of the value curve and strategy canvas. The strategy canvas will be applied to Canon printing service and will be explained in the results part of the thesis.

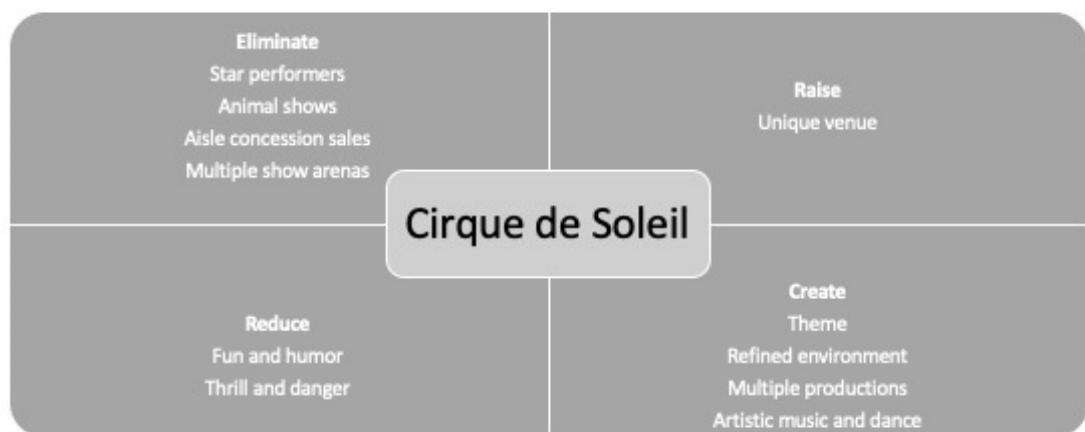


Figure 11. Blue Ocean strategy eliminate-reduce-raise-create grid, the case of Cirque de Soleil used as an example (Kim & Mauborgne 2005)

Reconstruct market boundaries

When comparing the blue ocean strategy with the market shaping strategy described in chapter 2.1.1, there are similarities. Both discuss about changing the boundaries of the market the company is in.

Blue ocean strategy encourages companies to think unconventionally and think about their market differently from 6 different angles. By changing the viewpoint between these dimensions, companies can unlock new markets for themselves. (Kim and Mauborgne 2005, 79.) These 6 dimensions will be introduced later in this chapter.

Market shaping strategy discusses also shaping the view of the market to unlock new value. Market shaping strategy states companies should not accept the fact that markets are low in growth and profitability, yet they should look at the 9 dimensions laid out by the strategy to find new paths to profit. (Nenonen & Storbacka 2018, 34.)

The 6 dimensions to look into when creating the blue ocean are industry, strategic group, buyer group, scope of product or service offering, functional-emotional orientation and time. (Kim and Mauborgne 2005, 79.)

The industry dimension should be looked at more broadly than only the immediate competitors. Industry view should include also alternatives and substitutes to the services of the company. (Kim and Mauborgne 2005, 49.) Competitors should be looked at more broadly than only the immediate competitors. Kris Ostergaard is interestingly suggesting *six degrees of competition* to be applied, where the company should try to find the possible substitutes for the service in 6 different levels. For example, for coffee, the 1st degree competitor would be other hot drinks (Ostergaard 2019, 58.) The levels represent the substitutes that can take the position of the service or product. Ostergaard is challenging companies to think about their products and services and to look at the different levels of competition they are facing. By preparing for the future also in this way, companies increase the possibilities of their services being relevant in the future as well. (Ostergaard

2019, 64.) This way of thinking can be applied to the blue ocean strategy when identifying the competition to the company's service.

Strategic group refers to other companies within the industry. They can be identified by two identifiers; price and performance. Luxury cars can be seen as one strategic group, also economy cars would be seen as another, as an example. (Kim and Mauborgne 2005, 56.) The view between these strategic groups is important for companies to decide whether their blue ocean can be found from moving up or down between the strategic group they are serving.

The chain of buyers offers an interesting view on creating a blue ocean. Typically for a service there are the purchasers, the actual users and the potential influencers. Although especially in smaller companies, these roles can overlap, they also often differ. Normally these groups also have a different view of the value of a product or service. (Kim and Mauborgne 2005, 61.) This is very visible in the day to day work of Canon, service companies in the ICT landscape where purchasers' values are different to those of users and decision makers.

Companies that have made a blue ocean shift are numerous but an example of a blue ocean shift in the buyer dimension could be Canon. Canon created the personal desktop copier industry by shifting the target customer profile from office managers and purchasers to users. Office managers wanted copiers to be big, fast, durable and low in maintenance. But users wanted something different, they wanted small, easy-to-use copiers and printers. When Canon targeted the users, namely secretaries in the companies, the company unlocked an untouched market. (Blueoceanstrategy.com 2019.) In the case of the printing service, the shift could be seen as the target customer group as well. The new customer group of micro companies has naturally different needs for a service than for example large companies that is a target customer segment at the moment.

The fourth dimension of complementary products or service offerings looks at supplementing services that are increasing the value to the customer. In the example of a movie theatre, a complementary service offering could be baby-sitting for instance. This additional service would make movie theatres more accessible for people with small children. The key to open up this market is to

define what is the total solution that the buyers are looking for. (Kim & Mauborgne 2005, 65.)

The fifth dimension is to look at the service on a functional-emotional axis. Normally companies compete also on one of these 2 as characteristics. Some industries or companies compete purely on functional aspects, others compete by appealing to emotions. (Kim & Mauborgne 2005, 69-70.) In consumer business this can be clearly seen, changes such as The Body Shop are good examples. In this example, the company changed their strategy to be more functional, and left out all extra, focusing only on the central skin care products. (Kim & Mauborgne 2005, 70.) In the case of the printing service, the customer group is somewhat mixed. Micro companies include also companies and users who work from home office and who don't have a permanent office. This dimension should be thought as well from the point of view of the customers.

The final dimension is the dimension of time. This can be also thought of as trends. Trends are affecting companies and to be ready for these, services and products should also be modified to the future needs resulted by the trends. (Kim and Mauborgne, 2005, 75.) The trend of a technology's evolvement as an example is important and valid regarding the Canon printing service. Educated scenarios that are relevant to the service to be able to adjust it to be relevant in the future as well.

The blue ocean theory is applicable to the Canon printing service. As such, there are many dimensions that are rethought in the service compared to traditional target groups of the company. The blue ocean strategy offers many tools to focus on correct issues and the strategy canvas is applied to this service.

2.2 Design thinking

Design thinking has numerous definitions. Buchanan sees that in the middle of the 20th century design thinking started to evolve from the industrial and graphic design. With the emergence of digital tools and digitalization in general, the new ways to implement design into improving digital interfaces emerged. From there on the step was short for design to also be implemented to the human interaction with

the surrounding environment. In the 1990's design started to be applied to services and for example public sector design is a prominent issue at the moment. (Buchanan 2015, 11-12.)

In the figure 12 below, is the Buchanan view of the pluralism and different ways to understand design thinking.

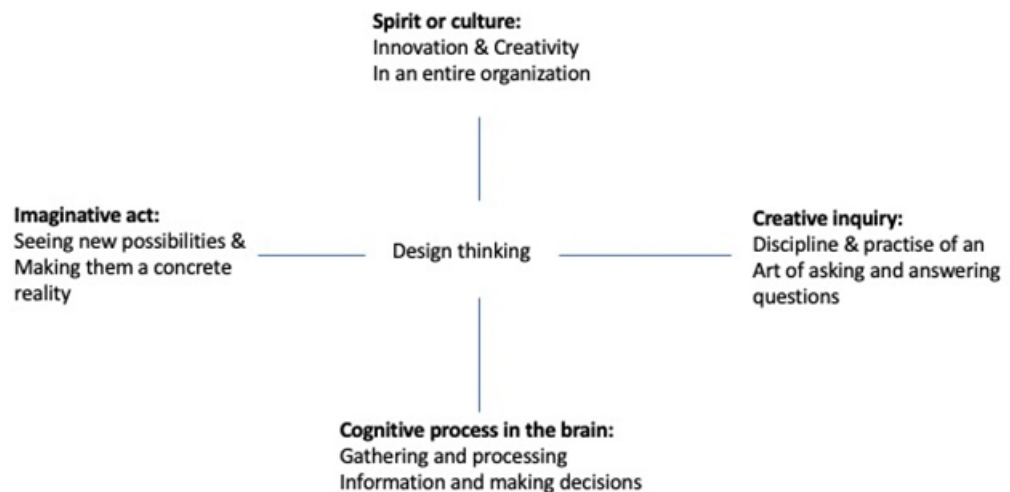


Figure 12. Multiple ways to understand design thinking (Buchanan 2015)

Brown and Wyatt state that design thinking is providing companies with a third option for thinking. Companies cannot be run purely on emotion and intuition, but companies run solely based on rationale and analytics can be equally bad as option. Design thinking is offering a third possibility by combining these two approaches. (Brown & Wyatt 2010, 33.)

Furthermore, when thinking about the growth that companies are looking for, design thinking, and customer centricity can offer companies they path to growth. Design thinking is usually connected with human centred understanding of the customers' needs and experience. Other dimensions are understanding the need for experiments, re-defining problems, utilizing different viewpoints, making ideas concrete in the form of prototypes and early trials and errors. Design-centric organization is discussed when design and design thinking is applied widely and cross functions to achieve growth. (Maula & Maula 2019, 20.)

Brown also brings up an important aspect of design thinking: convergent and divergent thinking. When looking at a problem or project, it is important to create solutions for it. Convergent thinking is a phase of solving the problem by driving the designers towards the solutions by insight to product or market, new visions to service offering, or new applications to communicating with customers. (Brown 2019, 73.)

Divergent thinking is applied when options are narrowed down and eliminated. This is a phase where choices are made regarding the future direction of the project. (Brown 2019, 74.) The model of convergent and divergent thinking has been a basis for the British Design Council -model which will be briefly discussed further in the chapter.

2.2.1 Stages of design thinking

There are companies that are implementing design thinking in the implementation phase, for instance the production of products. When going further with design thinking, companies can apply the principles of design to increase their strategic value in other areas as well. In this case, design thinking is applied earlier in the process through different and most importantly new tools of ideation. As Wroblewski states, by this change, organizations are able to understand new possibilities and opportunities for themselves. (Nixon 2016, 14.)

The Danish Design Center has created a model for the steps that companies can be on when thinking about design. The Danish design ladder is illustrating also the role of design in an organization.

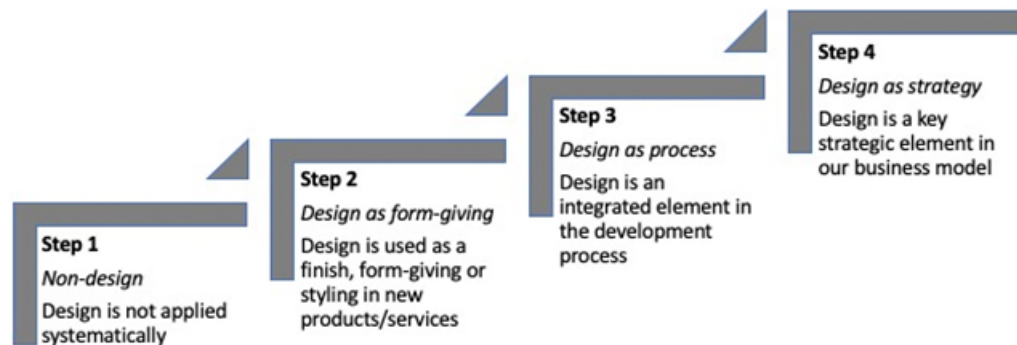


Figure 13. Steps of integrating design into an organization, the Danish design ladder (Danish design center 2016)

The design ladder thinking begins with the assumption that design affect positively to the company's earnings (Danish design center 2016). According to McKinsey & co research from 2018, companies that apply design thinking in their business operations generate more growth than their industry average peers. The investigated companies created 32 percentage points higher revenue growth over a five-year period. (McKinsey & Co 2018.)

First step is describing that design is an invisible part of the organization and production. Normally product development is driven by the ideas of the participants and users perspective has a non-existent role in the development process. Second step is in questions when design is seen as the final stage of e.g. product development. Typically, in the stage the form of the product is given. This stage can be called also as styling. The third step illustrates an organization that is utilizing design as an approach and design is integrated in the development process early. Solutions to problems are driven by users and work is done in multi-disciplinary teams to achieve good results. Organizations in the 4th stage use design thinking as a part of their strategy. Designers work with the top management of the company and design is integrated in the strategy formulation process. (Danish design center 2016a.)

Interestingly, according to a study made by the Danish design council, only 13% of companies state that they are on the 4th stage. 3rd and 4th put together, the score is less than half of companies. This means that more than half of companies do not include design into their processes at all or use it as merely form giving tool in the end of process. (Danish design council 2016b.)

Canon Finland organization can be stated to be currently using design generally on stage 2. There are some areas of business where design is utilized more than others. Through this project, Canon is aiming to use design thinking more in its operations that include innovation and development of services.

2.2.2 Design thinking brings financial results

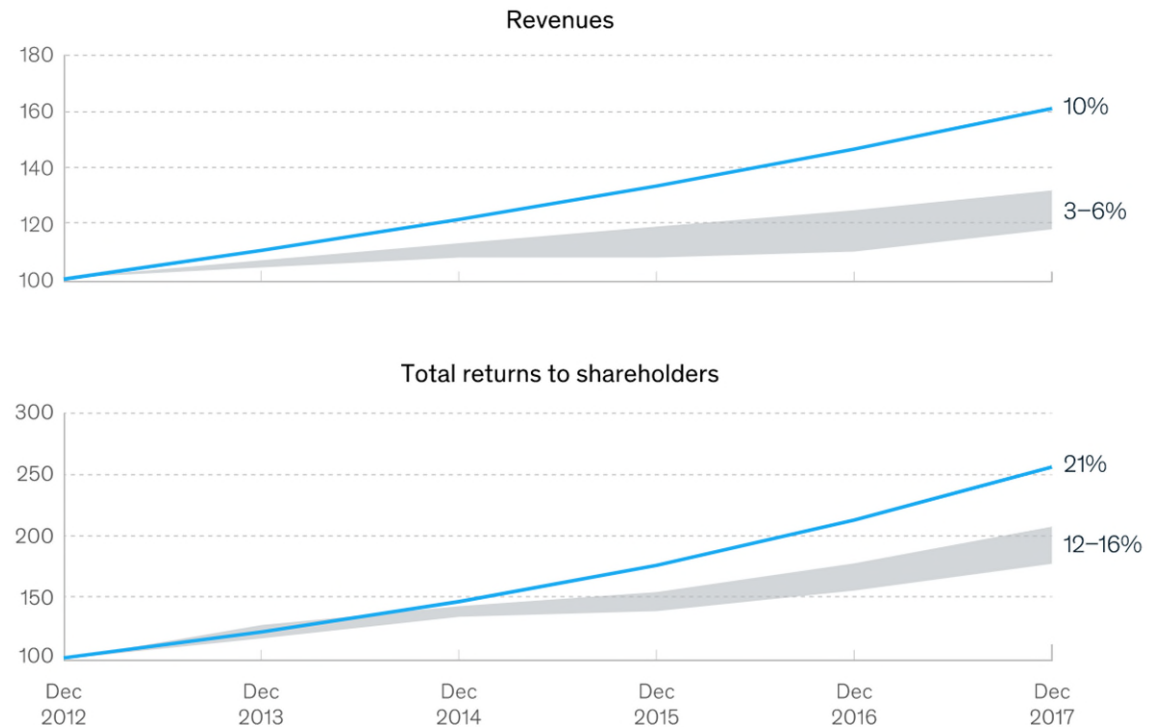
The benefits of design thinking are imminent. The future of organizations lies in their ability to change and create value to its customers. By following design lead thinking, it is possible to create new opportunities in customer centricity, questioning status-quo, rebuilding business models or strategy or organizational matters. (Maula & Maula 2019, 78.)

The value of design is difficult to measure. Separating it from other operations is rather hard and the meaning of design is largely varying from company to company. (Maula & Maula 2019, 78.) McKinsey surveyed 300 stock listed companies over a period of 5 years and recorded over 100 000 design actions in these companies. Out of these recordings a McKinsey Design Index (MDI) was put together and a strong correlation with high MDI score and financial performance was found. The companies in the top quartile of the MDI index scores, turnover and total returns to shareholders grew substantially faster than their peers in the same industry. (McKinsey 2018, 2.) See figure 14 below.

Companies with top-quartile McKinsey Design Index scores outperformed industry-benchmark growth by as much as two to one.

Annual growth (normalized), %

— Top-quartile McKinsey Design Index performers
 ■ Industry benchmarks¹



¹The envelope was set by the minimums and maximums of three independent data sets: MDI 2nd, 3rd, and 4th quartiles; the S&P 500; and a McKinsey corporate database of 40,000 companies.

Figure 14. McKinsey design index – correlation between design and financial performance. McKinsey 2018.

Another survey by the Design Management Institute (DMI) and Motiv Strategies analysed the development of company value in organizations where design is a central part of business strategy. The results show that during a period of 10 years, the design led companies outperform their peers. Design Value Index (DVI) includes 16 companies that passed strict screening regarding use of design. The index shows the performance of these 16 companies and their success compared the the Standard & Poor 500 -index (S&P 500). (DMI 2015.)

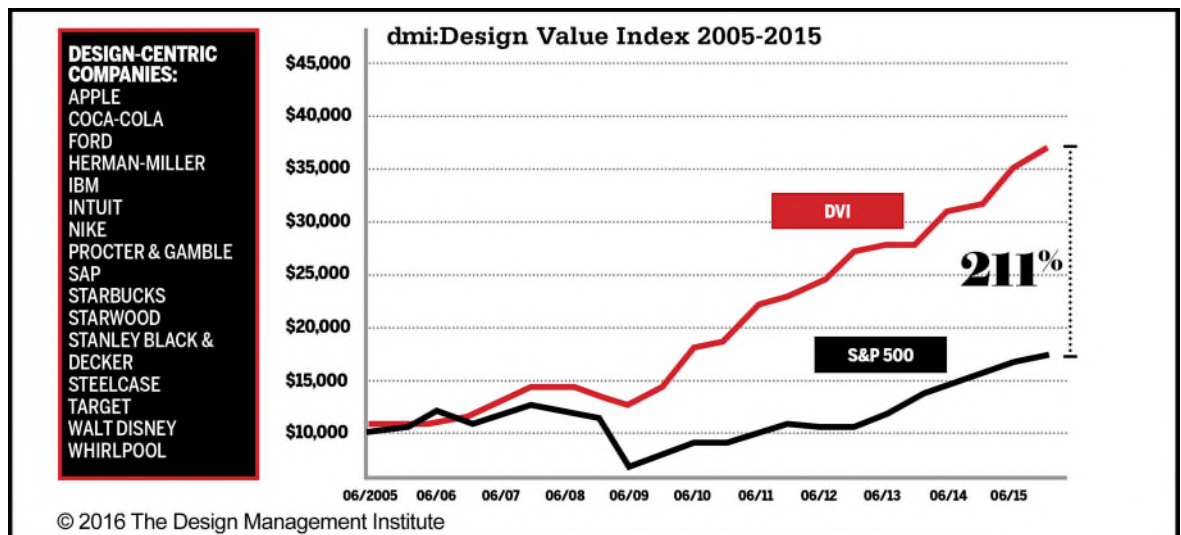


Figure 15. Design value index evaluation of growth of company value through design

2.2.3 Design thinking and innovation

For an innovation to be successful it has to create 3 things: superior solutions, lower risks and costs of change, and employee buy-in. When companies are solving problems in conventional ways, the solutions often are not unique and original. (Liedtka 2018.) In the case of Canon project, this is a relevant point to notice. The development project done in connection to this thesis was done in different way than normal productization process of Canon and therefore created original information and new ideas to potentially follow.

It is also known that solutions are better when the customer's voice is included and heard. The development processes have to be user centric for the end results to improve user value. Also, bringing in different viewpoints and people from different disciplines can be fruitful to improve innovations. (Liedtka 2018.)

When an organization is design driven, the principles and tools of design can be utilized in innovation in many different arenas:

- Identifying new business areas and improving existing ones
- Creating new products, services and strategies
- Preparing for future

On top of this type of activities also areas related to organization can benefit from design thinking. Below you can find examples:

- Re-defining organizational focus, purpose and boundaries
- Continuous learning and finding new viewpoints
- Examining, prototyping and applying different processes and procedures in cooperation, conflict management, decision making or interaction (Maula & Maula 2019, 35.)

Tim Brown is suggesting that companies cannot have a technocentric view on innovation. Contemporary ways of managing are not viable any more to tackle the innovation needs of today and this is why we need an approach that is powerful, effective and accessible to all. He continues that the tools and ideology have to be implementable to all different kinds of problems, from governments to individuals and society and that individuals and teams must be able to use it and have an impact. He is stating that innovation is just that approach. (Brown 2019, 9.)

2.2.4 Design thinking and service design

Like described above, design thinking is a way of thinking where the tools of design are used to solve problems and development issues. Probably the most known definition of design thinking is from Tim Brown. Adding to the definitions discussed earlier already, he states that design thinking is enabled by the skills that designers have learned during decades of working in the crossing of human needs, technological possibilities and practical limits of businesses. The next step of design thinking is to give the tools into the disposal of people who have not thought of themselves as designers and apply the tools to a very vast range of problems. He continues that design thinking is deeply human-centred and that the capabilities of the thinking have been long overlooked by more conventional problem-solving methods. (Brown 2019, 10.) In this thesis this is an important viewpoint since service design tools are utilized to solve business issues.

As explained in the chapter 2.2, it can be said that design thinking was born in the mid 20th century as a result of design becoming more diverse. Service design as

such is said to have been around since 1980's. (Catalanotto 2019.) When searching for a distinctive difference for the two terms, it is not clear cut.

The company Koos states that design thinking is a mindset and an approach, whereas service design is mostly practised by designers makes use of extensive design methods and focuses on the development of services (van Oeveren, 2020).

2.3 Service design

There are several possible theories to build a service design process on. The models regarding double diamond, Mortiz and Liedtka & Ogilve design for growth models are discussed. The service design process that has been utilized in the development project of this thesis is a combination of these, following the Moritz theory.

Historically, the role of science has been to investigate different phenomena and the role of engineering has been to design physical artefacts (Katzan 2011, 44). Furthermore, the role of design has been to create new processes and improve existing ones. Services have been important part of societies and creating value in them and the essential task of service design is among other things to enhance efficiency and effectiveness of older services and also to create new services enhancing certain attributes such as customer experience. (Katzan 2011, 43.)

Service design roots are said to be in the first services sold in the BC era, and during the 20th century, the birth of service design as such was based during the evolution of the industrial society and psychology. The term service design was born in 1980's and the first companies around the discipline in 1990's. (Catalanotto 2018.)

From a leadership perspective, it can be said that design thinking in a wider context has become more popular among companies since the traditional tools and methods of strategy work can be very slow and volatile. Also, traditional organizational structures are challenged and are not able to support companies in their current challenges. (Maula & Maula 2019, 11.)

Design thinking tools (such as service design) can be understood as a way to solve problems and create the best possible customer experience (Maula & Maula 2019, 15). From an organizational perspective, service design is combining and integrating marketing, management, research and design. It combines the relevant tools and experience with necessary expertise and in depth understanding of products and services. (Moritz 2005, 48.) In the case of thesis development project, product development of actual printing devices is overseas and cannot be influenced and therefore the service layer was developed only, yet suggestions were made to improve also the product design.

Moritz starts the description of his theory from separating design of physical products to intangible products. He also discusses the importance of understanding that the function of design has changed from being applied to a product in the end of the production cycle but that the boundaries of disciplines are falling, and design is being applied to the whole process of designing a product or a service. (Moritz 2005, 32.)

He also justifies that since services are a big part of the GDP, they should be productive for the organizations and satisfying for the customers. He suggests that services have a design problem. Design has also changed and service design as it is, can address many challenges of services. Service design is a discipline that resolves experiences, processes and systems that are complex and interactive and where special processes, tools and methods are used. (Moritz 2005, ex. summary.) Stickdorn continues with stating that service design is human-centred, collaborative, interdisciplinary and iterative approach (Stickdorn, Lawrence, Hormess & Schneider 2018, 27).

Moritz distributes his theory of service design into 6 parts. These parts are understanding, thinking, generating, filtering, explaining and realizing. These steps of the framework were set out after a review of existing theories available. It was seen that the first 4 parts are key to any design project and the 2 later ones are distinguishing service design from service innovation since strategic review and documentation are essential parts of service design. (Moritz 2005, 121.)

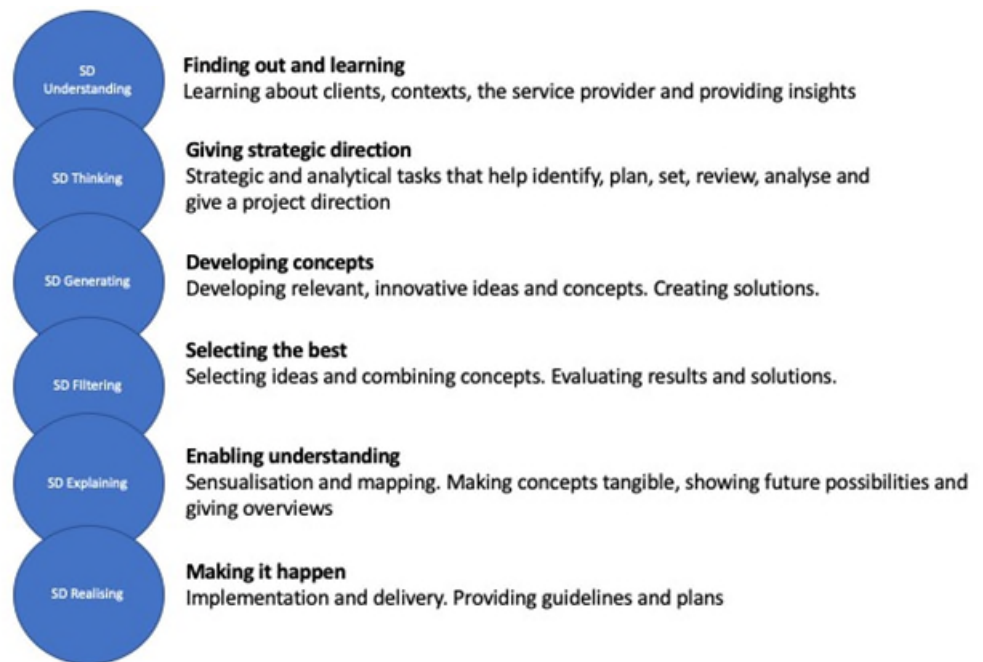


Figure 16. Moritz 6 steps of service design (Moritz 2005)

This framework is also constructed so that service designers understand that different stages need different mind-sets. For example, in understanding phase it is essential that you are learning about clients and the surrounding context of the service you are designing. (Moritz 2005, 121.) As such, this model is very linear in its approach and is only giving the information that what mind-set is needed and also what are the tools to possibly use in each of them. As a refinement, Moritz took the model somewhat further and stated that since service design projects are always different, and phases can happen at the same time and different order, the model has to reflect that. He then created also a more conceptual model to reflect that. (Moritz 2005, 149.) This model is illustrating the characteristics of service design; it is a process that includes iteration, reviewing and returning to previous steps.

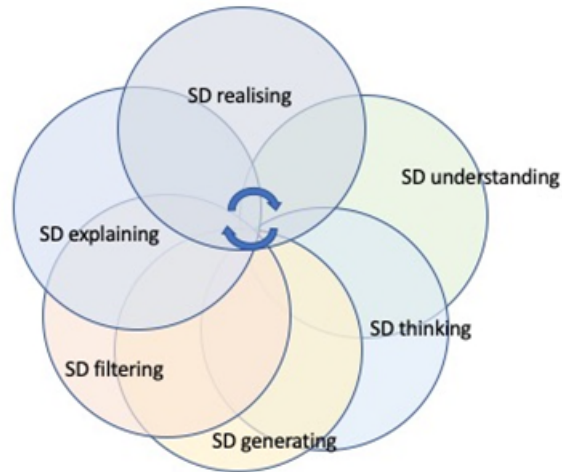


Figure 17. Conceptual service design is an iterative process (adapted from Moritz 2005)

The British Design Council developed a service design model, the double diamond. This model is created for designers and non-designers to tackle different types of problems. The model is divided into 4 stages: discover, define, develop and deliver. The two diamonds describe the focus of thinking: first you explore a problem widely, understanding as much as possible (divergent thinking) and after this the problem is defined and the scope is created (convergent thinking). Again, divergent thinking is applied to have as many ideas and many people solving the same problem. This phase also includes co-creating. Finally, convergent thinking is utilized and as solutions are tested and prototyped, only the viable ones are chosen to process further. (The British Design Council 2004.) Similarly, to Moritz model, the double diamond also refers to the mind-set that the designer should have. Divergent thinking should also be applied in the Moritz's understanding phase.

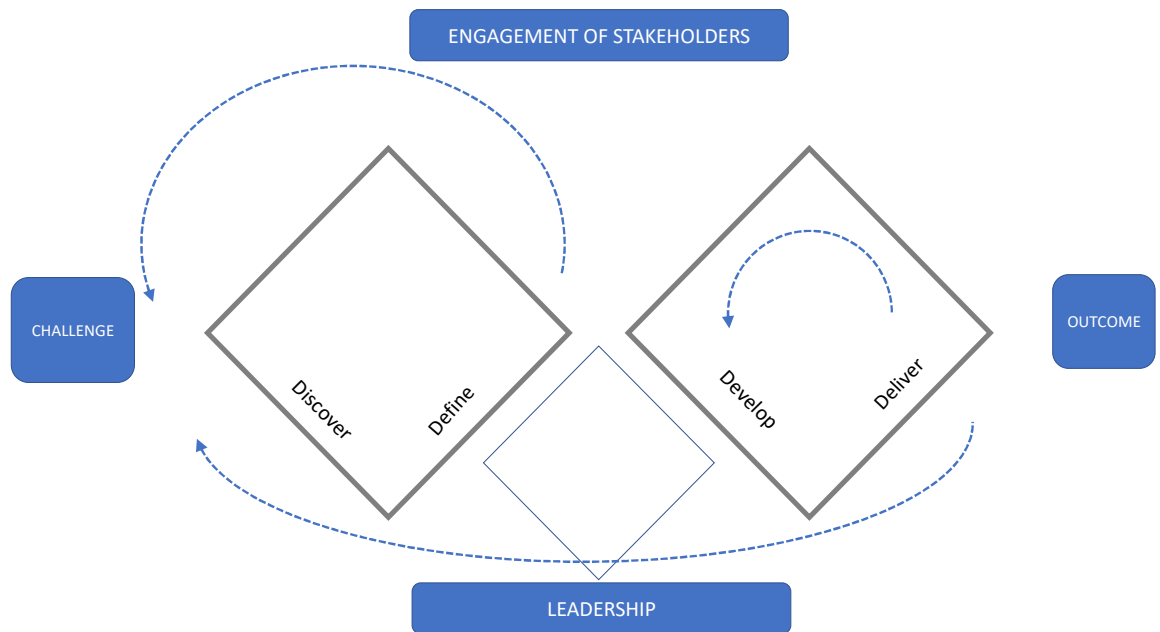


Figure 18. The double diamond model (The British Design Council 2019)

Together with the basic principles of divergent and convergent thinking, the double diamond model also outlines how the design principles, methods of work, leadership and engagement should be addressed. (The British Design Council, 2019.)

Design principles of design are that people should be put first, i.e., the customers should be understood profoundly. Design process should also be visual and inclusive in manner. Collaboration and co-creation are also emphasized together with the suggestion to constantly iterating the outcomes of the process. In the renewed double diamond model, also a collection of tools and methods is selected. They are grouped under explore, shape and build phases. An addition also in the renewed model is also that it has embedded the dimension of leadership, meaning that strong leadership is needed to give room for innovation. Leadership is also needed to create adequate skills and give permissions to learning, which is essential. Leadership also means that the leadership should create connections and relationships in order to facilitate innovation. Engagement is naturally needed also with people delivering and receiving ideas. (The British Design Council 2019.)

Liedtka and Ogilvie start by stating that leaders are most likely practising design thinking all along (Liedtka & Ogilvie 2011, 4). They want design thinking to be an everyday tool for all managers to succeed in the modern business world of tough competition.

The framework is addressing the fact that the worlds of design and business are apart. Business thinking is rational and objective while design thinking is based on human interaction, messy thinking and decision processes and experience. (Liedtka & Ogilvie 2011, 10). The worlds of business and design should be brought closer by using the tools of design.

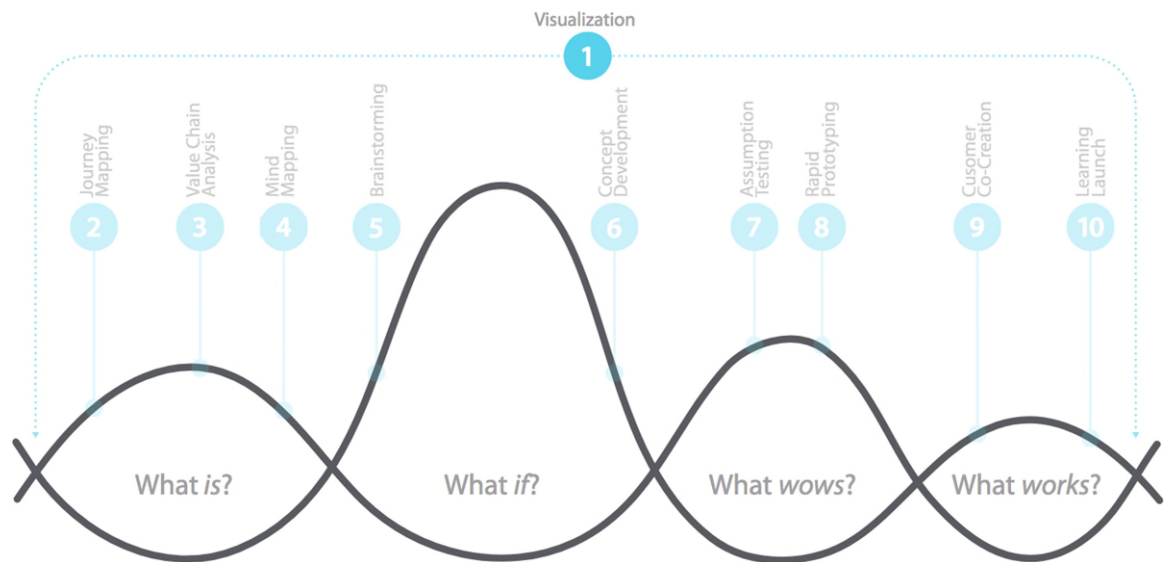


Figure 19. Liedtka and Ogilvie Design for growth –model. (Source: Liedtka & Ogilvie 2011)

The model itself is incorporating the tools to be used. What is –stage explores the world as it is at the moment. In this stage the present is analysed and understood. They stress also that the customer understanding is important; understanding issues such as what are their dissatisfactions is important. (Liedtka & Ogilvie 2011, 23-24). What if –stage is about creating hypothesis of the future. This can also be called ideation phase, based on the knowledge gathered in the first phase. This phase also stresses the fact that the ideas should be without any constraints, so they follow the ideology of divergent thinking. The phase also includes the phase

of concept development where the insights created in the divergent thinking part are moved into robust concepts. (Liedtka & Ogilvie 2011, 26-27).

What wows –phase is dedicated to finding the sweet spot of where the generated customer value is met by the profit potential. In order for this stage to be equally favouring the incremental and also radical ideas for business, a set of tools is used that combine creative with analytical thinking. Liedtka and Ogilvie mention that traditional ROI calculations and pay-back time calculations can rule out a lot of ideas, so these approaches are feasible for businesses. (Liedtka & Ogilvie 2011, 31-32). What wows –phase also includes prototyping and testing before ideas can be moved forward into the final stage. The final what work –phase is about testing the prototypes with customers. An important phase is also to test the launch of the new product to the market and how do you get customers to try out your service. In this phase, also the gathering of data is emphasized. (Liedtka & Ogilvie 2011, 33-34).

This framework is created for business to be used so that innovation and business development will also include the aspects of experience and users. It also discusses that valuing ideas based on business cases, ROI calculations and such should be widened so that the valuation would also include elements of design. This approach is very interesting in the light of the development project and blue ocean strategy

2.3.1 Service design and business growth

Johansson and Woodilla studied the intersection of strategy, design and innovation. All of these disciplines affect in design management, strategy as the organizational framework, innovation as the marketplace imperative, and design thinking as a way of approaching practical problems and problem solving. All of these disciplines have very different origins, but they seem to come together since they are all adding value to the companies utilizing them. (Johansson & Woodilla 2009.)

3 Research methods

3.1 Service design as human-centred research

The methods of research are often rooted in robust scientific processes including attempts to isolate and study cause and effect, eliminate bias, maintain objectivity and generalizing findings. As basis, the known scientific methods, applied in for instance medicine, are relying on forming hypothesis, testing them by conducting an experiment or study, checking and interpreting results and communication. (Hanington 2010, 19.)

Human-centered or non-scientific disciplines, such as design, are yet also reliable when connected to research and its credibility (ibid.) A research approach to human-centered discipline is displayed below:

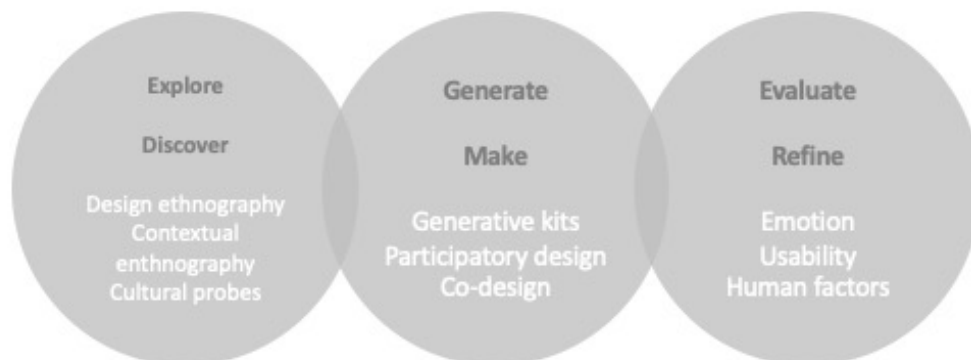


Figure 20. Research approach to human-centred discipline. Hanington 2010

Within these research areas it is important that the tools are well selected and that students know how to use them to create valid data. In the exploratory area the tools are often ethnographical, and the objective is to understand the problem or project at hand. Resulting of this, it is important to note that the results are not generalizable or the research as such are not repeatable, but only valid for this particular instance. The research phase of generalizing is qualitative in nature and results are equally not generalizable. It is important that all usage of tools and ie. selection of participants to interviews are documented and can be justified. In the phase of evaluation, the goal is to test and document weather something developed is useful and accommodates the need. (Hanington 2010, 22-24.)

Developmental research offers a new view on research. This type of research can be initiated for example by an organizational development or change incentive. Normally this type of research results into new procedures, products, services or ideas to name a few. Developmental research offers an alternative to contemporary research. Developmental research is equally creating new knowledge and theory. Compared to contemporary research, developmental research is leaning more towards creating practical improvements and new solutions. This difference is also affecting processes and methods used. (Ojasalo, Moilanen & Ritalahti 2018, 19.)

3.2 Service design as a method of research

When selecting the research methods, the methodology is to be selected first. In the area of developmental research there are 5 approaches. These approaches are case study, action research, constructive research, service design and producing innovation (Ojasalo, Moilanen & Ritalahti 2018, 36). Service design is selected as the research approach to this thesis due to the suitability to this project.

Service design means applying the processes and methods of design into development of a service. The areas of application can vary from customer experience to strategy. Emphasizing participation of different stakeholders is a key factor in service design and the process of service design is creative in nature. Nevertheless, service design aims to a controlled process through which practical solutions are found. (Ojasalo, Moilanen & Ritalahti 2018, 38.)

In human-centred design research, the tools for research can be divided into 3 categories: traditional, adaptive and innovative according to Hanington. Traditional tools are often used to gather quantifiable information. Surveys, interviews and market research fall into this category. (Hanington 2003, 13.) Hanington points out though that these measures can also be questioned due to people giving answers that they think are *good*. The use of these tools normally requires facilitation and knowledge. (ibid.)

Adaptive tools are tools that are normally used by humanistic sciences such as anthropology and psychology. These tools are used to monitor and observe people and modified to better fit the needs of design. For example, video ethnography can be such a tool. (Hanington 2003, 14.) Innovative tools are creative tools to gather insights about users and customers. The tools often are participatory in nature and aim at uncovering needs that are not identified by users by applying for instance probes or prototypes. These can also be creative workshops. (Hanington 2003, 15.)

Research methods for human-centered design			
Traditional	Adapted	Innovative	
Market research	Observational research	Creative/participatory	
Focus groups	Participant observation	Design workshops	
Surveys	Still, video documentation	Collage	
Questionnaires	Ethnographic methods	Card sorting	
Interviews	video ethnography	Cognitive mapping	
Unobstructive methods	Beeper studies	Velcro modeling	
Archival methods	Experiential sampling	Visual diaries	
Trace measures	Cultural inventory	Camera studies	
Experiments	Artifact analysis	Document annotations	
	HCI		
	Thinkaloud protocol		
	Heuristic evaluation		
	Cognitive walkthrough		
Intepretation and analysis tends towards:			
Counts		Context analysis	
Statistics		Categories	
Spreadsheets		Patterns, themes	
Graphing		Affinities, clusters	
Verbal & numerical information		Visual & verbal information	

Figure 21. Reseach methods for design. Hanington 2003.

Hanington continues that the results of research using these types of tools are various in form. The analysis and results may be summaries or reports but mostly are also including diagrams, maps, models, and other visual representations of the end result. (Hanington 2003, 16.)

3.2.1 Tools for this research

On top of service design tools used as primary in this thesis, some tools from the blue ocean strategy are adopted as well due to the suitability and theoretical framework. Mostly, the tools are based on the Moritz framework of service design where the tools are broken down into the 6 stages of the project. The framework of Moritz can be found in the figure 16 and the tools are presented in chapter 4 in detail.

From the company perspective, the utilization of service design tools is giving depth to the customer centricity. Companies need different type of research information to cover the market that they are looking to target. Understanding the underlying reasons of why customers act as they do is important for companies to be able to integrate customer centricity into their operation. (Polaine, Lovlie & Reason 2013, 38-39.)

4 Canon service design project tools and methods

The selection of tools used in the development project are outlined in figure 22 below. The tools have been selected so that each stage of the project is best accomplished. The figure also shows the relation to the Moritz service design process that is outlined in figure 16.

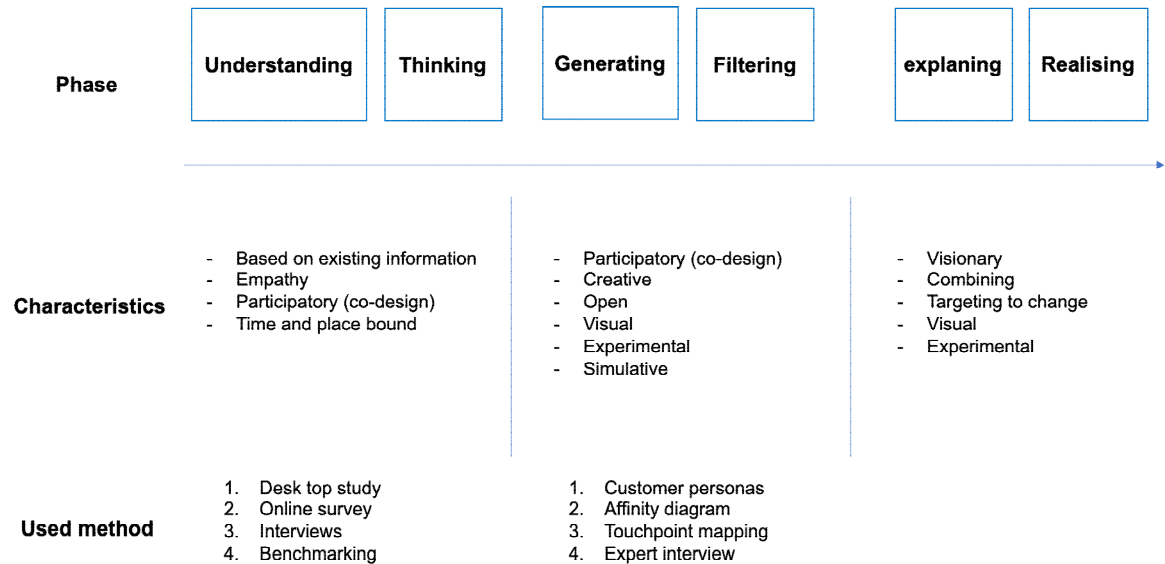


Figure 22. Tools used in the thesis development project (Applied from Ojasalo, Moilanen, Ritalahti 2018, 75 and Moritz 2005, 123)

Distinctive for the development work was that the element of hypothesis was present from the beginning. The first module is connected to hypothesis and inspiration. When starting to create new and discovering important facts through interviews, it is natural that one starts to generate hypothesis about the issue. (Liedtka & Ogilvie 2011, 27.)

Through also benchmarking, the element of hypothesis was reviewed in the beginning. Benchmarking was also a tool in the later stages of the development work. It is quite characteristic that the phases of a service design process can repeat multiple times and in a fast phase (Ojasalo, Moilanen, Ritalahti 2018, 74). Labelling to the whole process was co-creation which is also discussed in the following sections.

4.1 Tools for understanding and thinking

In the beginning of the service design process, tools for customer understanding and tools for understanding the operating environment are emphasized. This is a phase that is to be done with great detail since the development work is based on the understanding of the customers behaviour, values and needs. The tools of the first phase are also based on gathering facts and different views on the prospected future. Also, empathy should be embedded in this phase since people and their motives should be understood thoroughly. (Ojasalo, Moilanen & Ritalahti 2018, 74.)

Moritz describes this phase as understanding phase, where clients need to be understood, the context and market are explored to form a full picture. (Moritz 2005, 125).

4.1.1 Ethnography -tools

Ethnography is often connected to service design. It is a field of science that studies people and culture. Normally it is about studying people in their everyday lives and the benefits of ethnography are in capturing how people behave authentically and how they incorporate things into their normal lives. Ethnography also can be used to understand how people interact with a company's products and services. (Marsh 2018, 160.)

Shadowing is a common way to find out how users actually use services. Valuable information can be gathered of the way how people act in real life situations and what kind of problems they encounter. (Ojasalo, Moilanen, Ritalahti 2018, 76.)

In this development work, the use of ethnographic tools was planned to be used more, especially in the form of shadowing. The situation with COVID-19 prevented more than 1 shadowing to be done during the project unfortunately. The shadowing was done to understand clearly the use experience of one service point. It was combined with a customer journey studying and was completed in the Sello library in Espoo. By documenting the journey, the finding was that public services, especially libraries are popular for users, because of free of charge for

small number of pages (about 20 pages) with easy access. However, the existing public printing service has limitation services provided and information security level is low. This helped awareness of vital importance of information protection, security and ease of usability.

The ethnographic evidence from the shadowing can be found in appendix 1.

4.1.2 Desktop study

A desktop study or preparatory research should always be a starting point of a research, simply in order to avoid re-inventing an existing service. In this phase, the researcher will also take a deeper look at the industry, competitors, organization, similar products. The perspective should be more to find the right questions to answer rather than finding answers. Good tools can be searching the internet for reports, watching videos, reading literature, social media and such methods. (Stickdorn, Hormess, Lawrence & Schneider 2018, 118.)

In the case of this development work, the desktop study was done collecting the relevant information from company internal sources and also public ones. Also some expert interviews were utilized to help further understand the area, yet, as a tool the expert interviews are portrayed in the generating and filtering -phases.

Multiple sources were used to understand the market. The desktop study was started by visiting the sites of printing industry related companies. The knowledge about direct competitors for the case company came from the previous knowledge of the author. Also, companies and services outside the direct competition were looked at. These included smaller companies offering print services already and printing services that are available for the target group on the market already. On top of this, information was found from market research and statistics related to the market. Companies such as HP, Epson, Brother and Xerox were looked at. Companies Sokkeli and HBC Services were analysed.

Mapping the market size

The target group of micro companies was selected due to the case company interest. Canon is a company that is targeting its services primarily at corporations when considering print. In total, micro companies represent 94,5% of Finnish companies (Oulun Yliopisto, 2020). The amount of companies makes the customer group appealing to also Canon.

Further, a company that has under 10 employees is classified as a micro company. Further, to define the market size, the Vainu.io database was used, due to it being the case company used database. Companies with 1-3 persons was used as a preliminary filter, in order to narrow down the market size. Also geographical selection of Helsinki, Tampere and Turku was done based on the fact that big cities have the most companies. A further filtering of industry was done to omit industries of fishing and agriculture. The final company amount was 38k companies who would be the target group for the new printing service. In reality, the target group is bigger, when the classification is returned to the 1-10 persons employed.

4.1.3 Online questionnaire

Surveys can be utilized in different stages of a development process or a product life cycle. One way is to conduct a survey before redesigning a service in order to learn about the users and what they want to accomplish. (Marsh 2018, 122.)

The benefit of surveys is that it is possible to gather a large quantity of answers and multiple questions can be presented at once. The challenges of questionnaires can be regarded as giving quite shallow information due to the fact that it is difficult to evaluate what were the respondent's attitudes towards the questionnaire, how informed they were on the subject matter or what are the respondent's perspectives. The information gathered can be said to be trustworthy yet shallow with quantitative methods and deep data not extrapolatable data with qualitative methods. (Ojasalo, Moilanen & Ritalahti 2018, 121.)

It is beneficial if the subject of the questionnaire is quite general in nature. It is therefore easier to plan the questions of the questionnaire. It is also easier to answer to the questionnaire. Also, background information is good to have when planning for the questionnaire. If the information is not available, only quantitative methods are recommended. (Ojasalo, Moilanen & Ritalahti 2018, 122.) In the case of the online questionnaire, company internal questionnaires were taken as a basis for the work, so background information was widely available when questionnaire was drawn.

A survey was conducted both in English and in Finnish languages to the target group. The questionnaire was done to get preliminary understanding of how the target group representatives print, do they have a printer and what kind of services would they appreciate regarding printing. The questions asked can be found in appendix 2. The questionnaire was done by using the online tool Survey Monkey and the link to survey was dealt out in the group's personal social media channels (LinkedIn, Facebook), in several Slack channels targeting the correct user groups such as start-up farms and freelance networks. The total number of answers was 24, which gives an indication of the target group's needs regarding printing.

4.1.4 User Interview

As described in the chapter 3.2, the human-centric design research tools are numerous, and interview is an important tool when understanding the customer. Particularly in the beginning of the design project, it is important for the researcher to get to know the area of study by for instance an interview. Also participating users from very early on to the process in the understanding phase and later in the ideation phase can be invaluable for the project. (Hanington 2003, 11-12.)

However, interview should be a tool among many within a project. Interviews are often good ways to understand the attitudes and preferences, behaviours and beliefs of interviewees. (Marsh 2018, 128.) In this project, interviews were also used in the beginning part to track the change in the habit of printing. Also, future preferences were discussed.

Ojasalo, Moilanen and Ritalahti remind that the reason for an interview can also be to deepen the information gathered by other methods such as surveys (Ojasalo, Moilanen & Ritalahti 2018, 106). The interviews in this project succeeded the online survey which also acted as a basis when drawing up the questions for interview.

Face-to-face interviews are effective in nature especially if they are done in authentic environments (eg in the natural environment of a service). This type of environmental aspect can result into more deep knowledge during the interview. (Ojasalo, Moilanen & Ritalahti 2018, 106.) In the case of this project, the interviews were conducted mostly through teams and live interviews were not possible to conduct. This has to be noted when analysing the results.

The methods of interviews are numerous as well. The question of what type of information is needed, is defining the method. Thematic, deep and group interviews are examples of structured interview methods. (Ojasalo, Moilanen & Ritalahti 2018, 107.) The method of interview in this project was thematic interview, where the structure was written out but not strictly obeyed, but the interaction between the interviewer and interviewee guided the discussion. It is also good to record the interviews for later review. It also gives the interviewer the freedom to focus on the discussion rather than writing down. (ibid.)

A paired interview is a good tool to use since allows the interview to be in-depth by taking advantage of different type of experiences of the interviewees and the team members. (Marsh 2018, 137.) In this project, 90% were paired interviews.

The interview template can be found as appendix 3. The template is giving out the themes to discuss during the interview, yet the questions were not strict in every case. For example, for an interviewee that has told that he/she is not printing at the moment anything, none of the prints related questions are asked (such as what type of documents you are printing etc).

Target group users were recruited from the team members' own network but also from Facebook's 'Helsingin Yrittäjät' -group, the post can be found in appendix 4.

4.1.5 Benchmarking

In this stage, also benchmarking was selected as a tool to focus on the business model. By benchmarking to existing services, it can be avoided that already existing services are not ideated on. It is also very beneficial to look across industries for best practises and by modifying them, bring the best ideas to your own industry. (Tuulaniemi 2013, 185.) At this point, we looked at the service models of particularly Smartpost.

Services can be placed on a spectrum based on how they are rendered. The division between people and equipment-based services is important to make and as a continuance, what type of people and equipment are involved in delivering the service. This matrix assists companies to map out the differences of the service since the service types also require different strategic approach and resources. (Thomas 1978.)

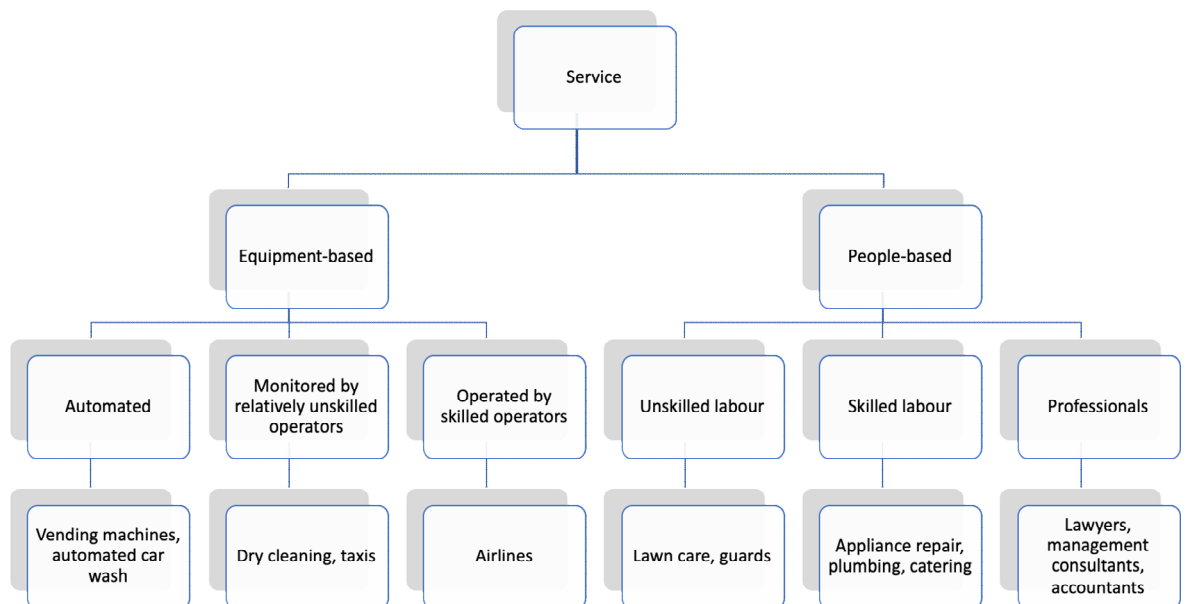


Figure 23. Spectrum of types of service businesses (Thomas, 1978)

The choice to benchmark to Smartpost service was done due to the services being in the same end of the spectrum as automated and equipment-based services. As

well as the printing service, Smartpost service requires some monitoring of operators. Posti has at the moment increased the network of Smartpost automats to 1800 and is planning to expand dramatically in the future. The service is created for sending and dispatching parcels and central to the service is the proximity to the customer. (Muhonen 7.4.2020.)

The benchmarking was done by interviewing and specifying some points after the interview by email. At this time, the benchmarking was directed to discuss the business model.

4.2 Tools for generating and filtering

The second module is about generating ideas and also filtering the best ones. After the in-depth customer understanding has been acquired, the ideation phase begins. It is to be as open as creative as possible. Different kinds of tools can be utilized but the characteristics is that they are participatory in nature. (Ojasalo, Moilanen, Ritalahti, 75.)

In the beginning of this phase, the user was summarized based on preliminary user canvases. They resulted the finalized user that was used as a basis of design.

4.2.1 Customer personas

Customer personas usually are fictive personas, that describe the behaviour models, motives, needs and situations in life. A customer profile usually is depicted by an illustration and a visual image. (Ojasalo, Moilanen, Ritalahti 2018, 77.)

In the case of this project, the preliminary customer profiles were based on the customer interviews and by using the tool of affinity diagramming, the central features of the user were found, and a final user profile was completed. The graphical illustration was also one of the final persona.

Personas are also a way to communicate that the service designed is for this particular persona with certain habits, characteristics and attitudes.

The results of the interviews were drawn together on a single template, and later incorporated to a single user persona that was used as a basis of the design work. The below figure shows the interview summary of one of the interviews conducted.



Figure 24. User interview summary. Example canvas.

4.2.2 Lotus blossom and affinity diagram

Creativity is in the centre of creating new. Without the ability to innovate, development does not happen. Being creative is also about seeing things and services in a different way. There are several creativity techniques available, which can be used to bring out new points of view, new ideas and solutions. (Ojasalo, Moilanen & Ritalahti 2018, 158.)

As a tool to condense and identify patterns is affinity diagramming. Ideas that are written down can be grouped around themes to identify insights that are central to design projects. (Marsh 2018, 213.) Lotus blossom on the other hand as a tool has a lot of similarities to mind mapping. The idea of the tool is that the petals of the centre blossom are peeled back to reveal a key theme that is connected to the central theme. The lotus blossom forces the thinking out of the learned tracks. (Frey 2010, 1-2.)

In the figure below the central of the lotus blossom can be seen. This lotus blossom was filled so that each of the 9 topics around the central point of the selected 'flexible printer' -user profile was moved as the central points of the 9 grid. These were the ideas that were generated as a basis for the new service.

Need for office print is going down	Can't wait for print	Ready to travel for the print
Willingness /need to use services	Flexible printer - persona	Can pay for the prints
Security	Availability	Easiness and accessibility

Figure 25. Lotus blossom central. Example

To condense the information gathered from the previous phases, the tool of affinity diagramming was used. It is a powerful tool when patterns need to be identified from a large range of qualitative data. It is useful in for example uncovering similarities among characteristics from multiple customers. (Marsh 2018, 213.)

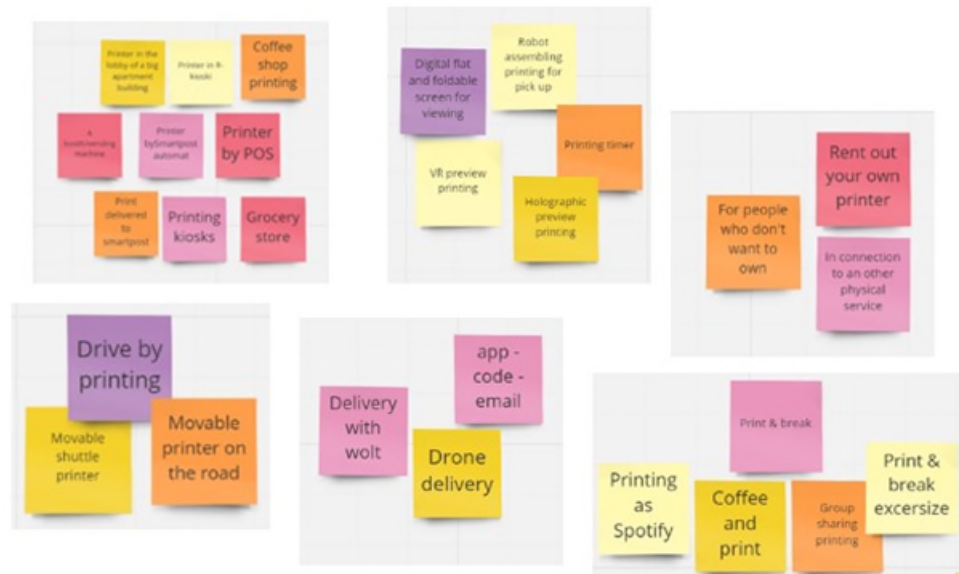


Figure 26. Picture from the affinity diagram and refining stage of ideation

4.2.3 Expert interview

Involving experts into a service design process may happen in multiple locations of the process. It is crucial to the success of the project that the underlying limitations, technologies and company related issues are understood by the designers. (Moritz 2005, 127.) Expert interviews are a good way to get this information.

Although the central view of service design is to deepen customer understanding, service design will also need to take into consideration the organisations view when creating effective, efficient and profitable services (Ojasalo, Moilanen & Ritalahti 2018, 72). This information can be obtained from interviewing company experts, but also industry experts should be looked into.

After initial ideation was done, company expert was engaged and a discussion regarding the general restrictions of the hardware involved were discussed.

4.2.4 Touch point map

As a human-centred tool, touchpoint maps and journey maps reveal all key steps of the interaction with a service or a company or even a certain area of research.

The help the designers find gaps in the experience of users. These maps can be used when visualizing current experiences or future ones as well. Maps are structured so that a sequence is following another and can be very different in scope. (Stickdorn, Hormess, Lawrence & Schneider 2018, 45.) Mapping the touchpoints brings a new dimension to the work by turning customer experience into genuine output to the company's process improvement. In the best case, the touchpoints are mapped with additional information such as pictures, videos, illustrations and animations. (Ojasalo, Moilanen, Ritalahti 2018, 73.)

Maps were utilized in several scopes during this project. Firstly, in journey map to understand the usual flow of a day in our user persona's life and later on regarding the actual service, which can be called a map of the steps of a service. This type of map illustrates the steps of experiences a main actor is having with a person, machine or digital interface (Stickdorn, Hormess, Lawrence & Schneider 2018, 46.).

The touchpoint map created was based on the current service touchpoints of the Print in city service that Canon is offering for consumer customers. The users provided feedback especially directed to the fact that the mobile usability of the service is poor. Also, the touchpoint of 'At the printer' was discussed in light of improving the experience at the printer, in for instance touchless application. Also in 'Making basic settings' -touchpoints payment options were seen to be in need for improvement in the service.

FIGURE CONCEALED

Figure 27. Touchpoint map as basis for workshop with users

4.2.5 Use of co-creation

Co-design is an important part of a design process. Co-design highlights the participance of the end user. The fundamental purpose of co-design is to engage current and future users, as well as experts from different areas to the design process in order to enrich it. (Vaajakallio & Mattelmäki 2016, 77.)

The goals of co-design can be various. Improving co-operation of a group, enhancing creative thinking or customer centric attitude, getting new view points, building new understanding of a target group or building new business or partner networks to name a few. It is important to identify the actual goal of the co-creation activity in order to define the needed roles and experts. Before co-creation is initiated, it should be understood how the goal will be reached in order to speed the process. (Vaajakallio & Mattelmäki 2016, 81.)

Co-design methods were applied in the work from the beginning and were found very beneficial. In the beginning of the project, users were involved through interviews and gave the basis for the user persona.

In the ideation phase, the users were invited to a panel to discuss the ideas created by the group through using a touchpoint map created as preparation. A secondary goal was also to validate the user persona created. Only persons fitting to our urban printer –persona were chosen to this pane. The panel also included an expert from Canon, who acted as a technical and business consultant in the discussion which was facilitated by the author. The expert was brought into the discussion to listen to the ideas and also give feedback as to the technical restrictions of the service. In the panel, there were 4 parts:

1. Validate and get further insights on the chosen persona (flexible printer)
2. Present current service touch points (Print in City –service) and get feedback
3. Present hypothesis touch points and get feedback
4. Ideate on mobile application used for the future service for the chosen persona

The ease of use for a key point identified after the preceding tools were applied and discussed with the user panel. There were several good ideas and a mobile app was selected as the most feasible one and it was chosen to be the mock-up.

28.7.2020

Sähköposti – Lumenkoski Hanna – Outlook

Mikroyritysten tulostaminen - workshop

Lumenkoski Hanna <hanna.lumenkoski@myy.haaga-helia.fi>

la 18.4.2020 21.03

Vastaanottaja: iiro.kaksonen@interque.fi <iiro.kaksonen@interque.fi>

Hei Iiro,

Kiitos viimeviikkoisesta haastattelusta liittyen tulostamiseen. Kuten vinkkasinkin, olemme edenneet projektin osalta ja järjestämme ensi torstaina 16-17 workshopin teamsissä jossa paikalla myös 2 muuta kohderyhmämme edustajaa, pienyrittäjää sekä tekninen asiantuntija Canonilta.

Olisiko sinun mahdollista osallistua tähän tapaamiseen?

Aurinkoisin terveisin
Hanna

Figure 29. Invitation to user panel

4.3 Tools for explaining and realising

The characteristics of the last stages of the service design project are that they are visual and experimental in nature. The ideas born in the project are attempted to be made concrete with sketches, maps, illustrations or concrete mockups or test environments. These elements help in guiding the discussion and it is easy to understand elements of the service with the help of visual elements. (Olasalo, Moilanen & Ritalahti 2018, 72.)

4.3.1 Prototyping to mock-up

It is beneficial to prototype a service before it is created, and resources are utilized to the implementation. This can be achieved by creating an environment where users can try out the service as early as possible. (Polaine, Lovlie, Reason 2013, 139.) By exposing the prototype to testing, a new dimension can be created to the communication, where true understanding of the development project can be obtained. Prototyping can be used to test if the service is easy to use, is the service interesting for the user and also is it viable from the perspective of the company. (Tuulaniemi 2011, 195.)

See appendix 2 for application mock-up, which was finalized after 2 rounds of feedback from users and the design team.

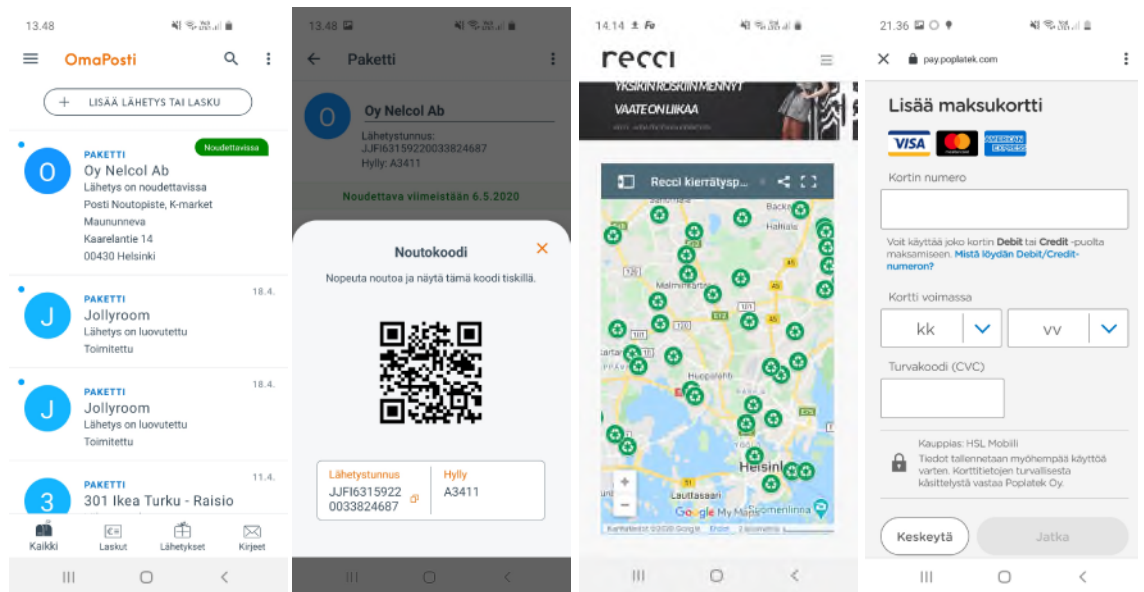


Figure 28. Some well-known Finnish apps for consumers that were used as benchmark.

In figure 28 are some Finnish applications that were used as benchmark regarding features. For example Posti's Omaposti app was used as example, when drawing up the feature where the user can see the own print queue. Also the ideation of the map for network of printers was ideated on already existing applications. In the below table some features are listed and the way that benchmarking was utilized. The application was then given to customers to test and improved based on that.

Table 1. Prototype was initially developed based on benchmarking

Reference applications	Canon application
List of shipments arrived	List of prints in cloud
Shipment specifications	Layout for print, colour selection, size selection etc
Pick up QR code	QR code and PIN for releasing the print
Map for pick up points	Map of printer network
Credit card add	Credit card add

4.3.2 Business model canvas

The business model is an important part of the service design process, the business model canvas is a good tool to illustrate that. In the canvas, key stakeholders are mapped and it is insightful to fill since differentiation options from competitors may become visible. (Stickdorn, Hormess, Lawrence & Schneider 2018, 76.)

The canvas is combining outcomes from the actual service design process, such as prototypes as value propositions, but it is also including the financial aspects to the service. These give the possibility for the design team to evaluate the service also from that angle. (ibid.) Ojasalo, Moilanen and Ritalahti remind that the canvas also summarizes the value the company creates to the customers as well as the means to do so (Ojasalo, Moilanen & Ritalahti 2018, 182). This is the reason why the business model canvas was chosen as a tool

As this service is based on the existing Print in city –service, a business model canvas is used to make the model clear to the company representatives. This model is used canvas and also known to company representatives.

4.3.3 Strategy canvas

The Blue Ocean strategy suggests that companies retarget their focus from competitors to alternatives. To pursue this change, the existing logic of competition should be resisted, and the problem should be redefined and thereby to construct the elements of the services to offer better solutions than the competitors. (Kim & Mauborgne 2005, 28).

The strategy has been discussed in depth in the chapter 2 of this thesis. Also, tools to identify have been explained and illustrated. The strategy canvas has been applied to the printing service in order to illustrate the strategical aspects that are needed to be done in order to set apart from competition. The canvas is capturing the current state of the market by describing competition. By the canvas it is easy to grasp what competition is investing on, what are customers getting from services available and also that what are the general factors that the industry

is competing on. The canvas is also an action framework and possible directions of strategy can be easily spotted. (Kim & Mauborgne 2005, 25.)

Each competitor has an own value curve. The value curve is the basic component and is depicting the relative performance across the industry's factors of competition. The value curve is representing the buyers point of view and what kind of strategic profile do the competitors have (Kim & Mauborgne 2005, 27.)

The value curve for the printing service is an essential tool and the elements pictured in it are drawn from the service design process. The value curve also presents the competitive advantages that the company can have in the case of the printing service.

5 Results

There were several results from this thesis. The results are explained in this chapter. The case study results are discussed in detail, and the results of the service design project are explained. Also, the business growth strategies were studied and reviewed based on literature, particularly the use of design as a tool for growth was of interest. This section will also portray the overall benefit of using service design tools in business context.

5.1 Results on Canon case study

Modern service-dominant business logic is emphasizing that sides of business is a service. The ultimate goal being to increase the value to the customer. Service design can be utilized as a way to develop the company's services and organization. (Ojasalo, Moilanen & Ritalahti 2018, 73.) The case of printing service was developed using the methods of service design and the research questions were concretely related to the new service.

5.1.1 Understanding and thinking

Desktop study

The aim of the desktop study was to gather as much information about competition as possible. Also, the market was studied to understand about printing related trends, with a particular emphasis on the user's change in printing preferences. The end goal was to understand if there is room for a printing service.

Table 2. Current service providers for print services

Service offering for target group	Selected service provider for review	Core of service
Print vendors offering printers as service	Canon, HP, Brother, Epson, Xerox, Lexmark, Kyoreca Mita	Buy printer and consumables separately, use in own premises. Also box offers such as buy printer and consumables for 3 years at the same time. Vendors offer also 3-4 years service contract where customer gets machine repaired in case of malfunction
Print vendors offering prints as services	Canon, HP	Canon: Co-share printer in public or semi-public venues HP: Service contract to get consumables delivered to user (HP Instant Ink)
Print companies	Sokkeli, HBC Services	Go to service provider, additional services available (eg. Digitization of paper documents, CAD assistance)
Library print services	Aurora, libraries own services (Sello)	In library premises. Aurora: connected to Aurora library system. Also printing services not connected to any systems.
Other print services	Princh	Network of printers close to customers use points (shops, cafes, libraries etc)

The services offered for office printing are very varied at the moment. Princh, alongside with Canon's Print in City -service concept are the only print services that are offered on a true service concept idea. All of the examined print vendors sell printers that are suitable for the use of selected target group customers. When examining the market from the point of view of sold machines, it was clear that in Finland the market is dropping. The market dropped 12,6% from last year in the segments of printers and multifunctional units in the speed range of 1-9 pages per minute that IDC is considering representing the small business category. Yet, need for printing is persistent and there are also studies showing that printed material is needed (see section 1.7), since the customer values printed information when reading or studying material.

Based on the desktop study, it can also be said that a true service concept that is easy to access to the user is not developed yet. Princh is close to this due to the characteristics of a flexible network, but it is not an active service in Finland. Therefore, room and possibility in the market is existing for Canon.

Online survey

To deepen the customer understanding specifically to the target group at hand, an online survey was completed. The questions can be found from appendix 2.

Information about the kind of documents printed, ideas for the service location and most importance attributes a printer should have, was gathered. These ideas were collected and used further in the process.

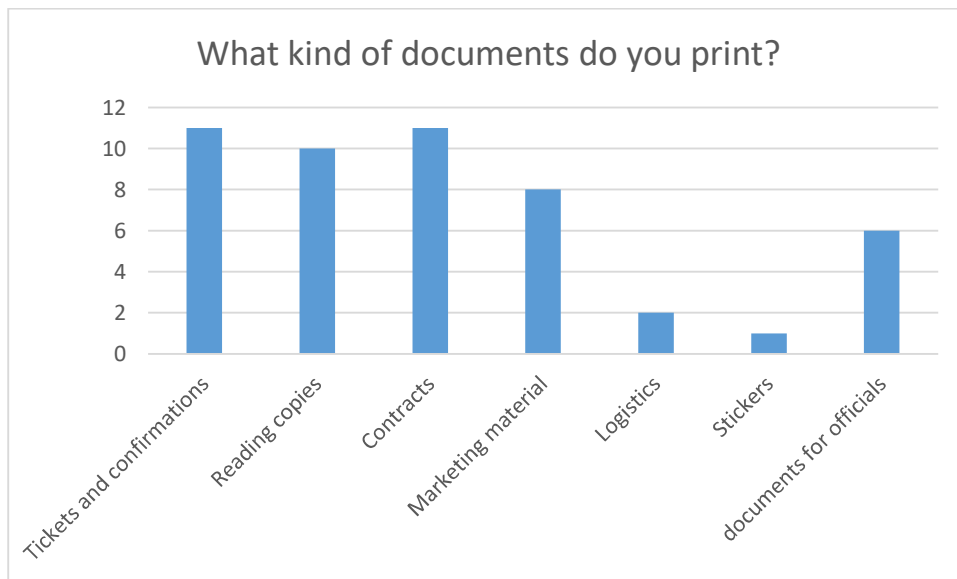


Figure 29. Answers on question: what kind of documents do you print?

The answers to this question were very different. One single document type could not be identified. Since the printing need of the target group was versatile, the service should also be able to answer several needs in this respect. It could be seen that quite regular A4 material was the most printed, normally for one-time use. The questionnaire also validated what the Wardour -study revealed that reading copies are printed, possibly for the reason that it is easier to read from paper than from screen.

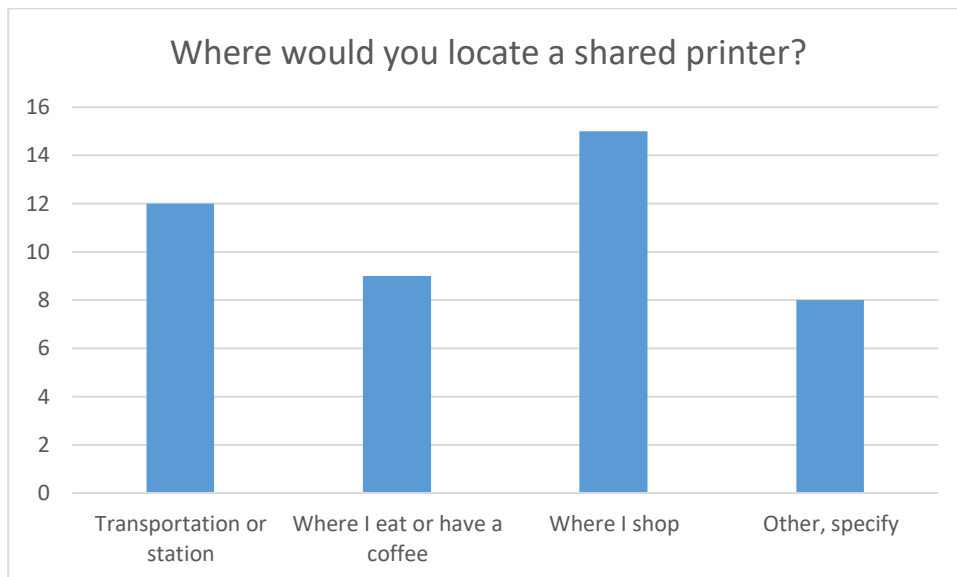


Figure 30. Answers to question: If you could make the decision, where would you locate a shared printer?

When the case study was started and the service model was discussed in the group, an early hypothesis was created that a network of printers that are close to the customers is needed. The question of a shared printer was put to the online survey to get answers that would refer to the favourite location.

Again, there were several answer categories that were popular. Place of shopping (further identified by kiosks, shopping malls, grocery stores and clothing stores) was yet more popular than others. The answer from this question was taken as information to the further section of ideation.

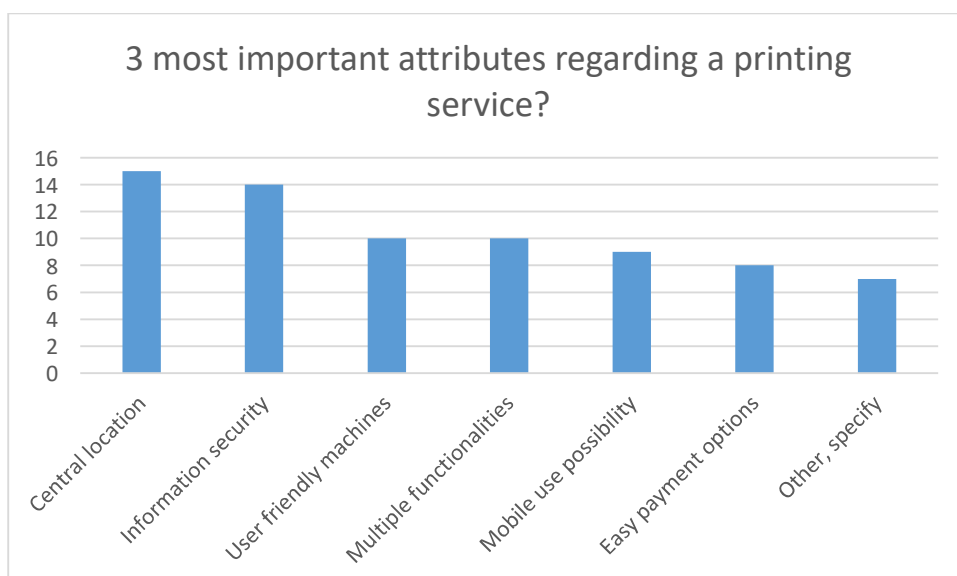


Figure 31. Answers to question: What do you consider 3 most important attributes regarding a printing service?

The question of most important attributes is important to find out what does the user value. Yet again, no single feature came through and 5 of the options given were seen as important. The three most important features were *central location* of the service, *information security features* and *user friendliness* of the machines. In user friendliness a further specification of display texts was given to guide the respondent to identify the correct issue. Multiple functionalities refer to in addition to printing, also copying and scanning possibilities. *The mobile use was also ranked high.*

At this point of the project, the survey did not provide deep enough user understanding, and it was complemented by a user research by interviews. Even though the questionnaire was too early, it provided insights to the later stages of the process. It was positive to see that the questionnaire was answered by numerous people, this is how the project member were also motivated to go forward since there was a clear need in the market.

The online survey revealed that typically users print 1-10 pages per week. This was also stated by the users in their interviews. The users also answered questions regarding the changes in their printing amounts. The supporting question options were (see also appendix 2)

1. How has your printing changed in the last 3 years?
2. What has impacted that?
3. How do you think that you will print in 3 years from now?

Most of the users stated that their printing need has decreased during the last 3 years. The reason stated for this were technological tools. These were mentioned to cause decrease in printing need:

- Electronic signature -tools
- Collaboration tools (such as MS Sharepoint)
- Use of multiple screens

When asking about the future of the print needs, all of the participants stated that there will still be a need. The users also stated that they are more willing to buy as service. Printing has traditionally been so that a user has a printer in their own premises, according to this study, the need for printing as a service also for this user group is needed.

User Interviews

Table 2 shows the central findings from the interviews regarding printing and the habits in the selected customer group, in relation to the research questions. Also, trend of printing was asked from all participants.

Table 3. Central findings from user interviews

Printing needs	Success factors for a future service	Changes in habits related to printing
Official documents	Easy access	Printing decreased over last years
<i>Confirmations</i>	Secure printing	Technological tools (e-signature, multiple displays) have decreased the needs
<i>reading documents</i>	<i>Mobile usability</i>	No printer at home
Need can be anticipated	Credit card payment option	<i>Willingness to buy more services</i>
		<i>Readiness to travel for print</i>

From the interviews the central findings were that most of the users were printing reading copies and confirmations. The important features were secure printing and mobile usability and as habits the group decided to focus on the fact that users wanted to buy more as service and that there is a readiness to travel for a print.

Canon as a company wants to promote ecological values and partly the existing service are built to promote the values of circular economy. This was a central point to take into consideration in the business model. The aspects of usability that were risen as important ones were the easy mobile use and also secure printing.

Benchmarking

Benchmarking was done as an interview and the central focus was the business model. The central findings of the benchmarking are found in the table below.

Table 4. Findings of Smartpost benchmarking

Topic	Finding
Reason of service development	Change in consumer and small businesses behaviour: customer wants service close to own location and outside office hours, flexible dispatching and receiving of parcels. Increase of ecommerce.
Choosing location for automats	Based on density of customers. Based on location having operating personnel in case of malfunction (ie. shops, shopping malls)
Business model of automats	Partly Posti is paying location for having an automat, partly Posti is billing for a location to have the automat. This is depending on the lucrativity of the location.
Goal	Build an extensive network of automats. Educate customers into using the service
Types of service	<ul style="list-style-type: none">A. Only parcel delivery and receiving optionB. Lähilokero, a service where a seller can buy a locker and give the code to the buyerC. Owner of the automat can have an own locker for own ecommerce shopping

The summary of the benchmarking was made and elements of it brought to discussion when building the business model canvas. These elements were found as central:

1. Business model: flexibility as per location
2. Size of network of printers: Following the customer density, careful selection of locations
3. Marketing: education material for customers to be made available'

There are for sure areas that are company internal ones and need to be looked into when development is going further. The benchmarking was not going into details of the business model but rather was an overall benchmark of the service concept.

5.1.2 Generating and filtering

Customer personas

The group came to understand in the understanding phase that generally there are 2 main types of printing persons. The first one is when print need is immediate, and it is in the core of the business, and the defining fact is that there is no willingness to travel to a printer. We found that for example accountants are not able to travel for a print. This is when shared printing service is not accepted. The second type is a flexible printer, a person who is willing to travel for a print and prefers to use services opposed to owning a printer.

The group made the decision on the persona in the second module of the project, since this customer group supports the company target of creating a service that is also promoting shared economy. Also, a reason is that the customers that are not able to travel for a print, can be serviced by a machine sold to their premises and therefore not in scope of the printing service in development.

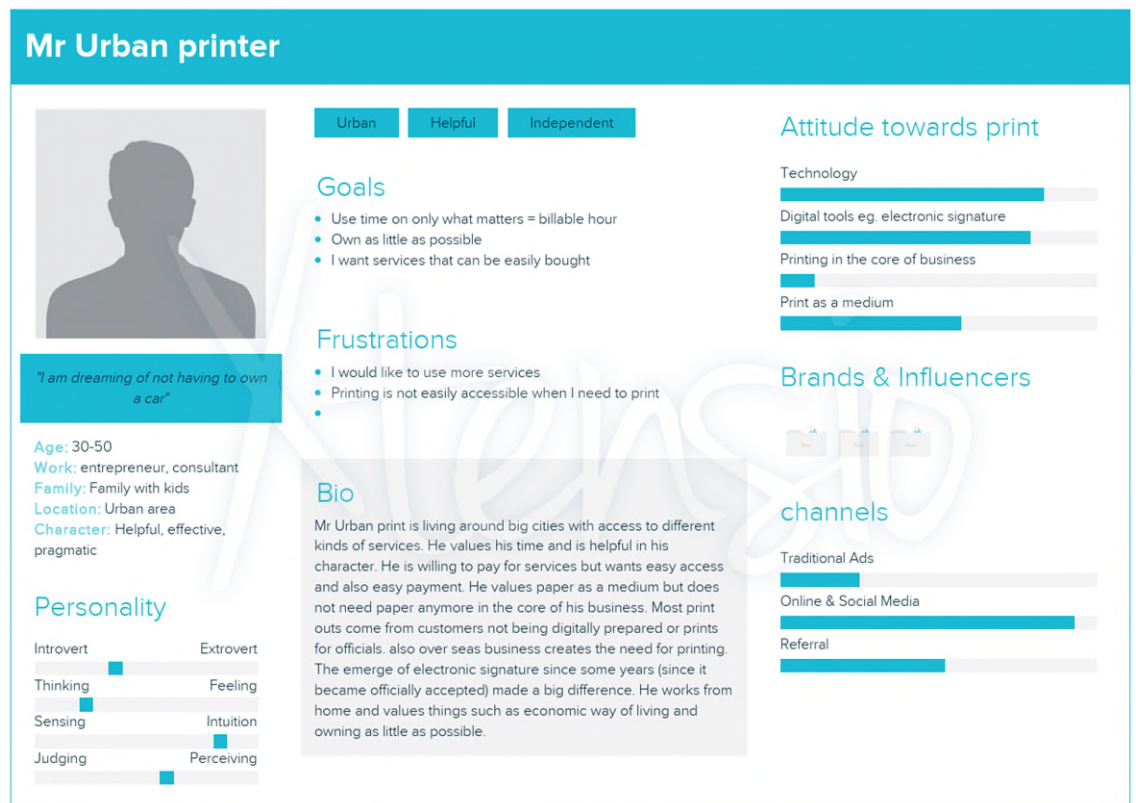


Figure 32. Customer persona for the case study

The urban printer persona was thought to have time usage as top priority and therefore services need to be close by. These users are willing to leave the office, or other premises to get to the service, providing that the access is easy and the usability is easy. The persona also regards ecological values as important and prefers to consume as service, not by owning. Normally technological adaptability is high and the use of for instance electronic signature technologies is every day. Printing needs have decreased over the years due to for instance the technologies mentioned before. Yet, print as a medium is regarded as important but not any more in the core of the business. Representatives of this user group often work from home but area also commuting to their offices.

The user profile was also used as a basis for the development project visualisation sketch that can be seen on the last page of the service book (appendix 4).

Expert interview

When in the filtering stage, a Canon technical expert was interviewed to better understand the requirements of setting up a completely new service. Printers and multifunctional machines are complex and need maintenance and repair and it was also a key to understand these requirements. Based on the realization that technical details are important in our service, it became clear that setting up a completely new service is not feasible, but a decision was made to build on existing Print in City service. The reason to take this direction was based on several facts

- Financially to build a new service is not feasible in this market
- Print in city secure print feature is well designed and welcomed by customers
- Secure printing requires a separate software and a server environment that is already set up for Print in City
- User experience is not designed for mobile use
- Machinery connected to the service need to be in locations where operating personnel is present in case of malfunction, need to add paper to cartridge or remove paper jam

At this point, we made the decision to make our design based on the existing Print in city –service and to focus on the mobile app that was also identified as a request for the service for easy accessibility. It was also understood that marketing material together with training material was already ready for Print in City so combining these services was reasonable.

Touchpoint mapping

The touchpoint map was drawn up based on the existing Print in City service touchpoints. There were some obvious missing features or issues that needed improvement already based on the expert interview, questionnaire and interviews. To get more valid information, the touchpoint map was validated in a user panel

The feedback gathered from the user panel consisted of these remarks. The *usability of the service should include a simple mobile app. Tracking of the print works and network of the printers should be easily accessible. Payment options*

should be wider and the most desired would be to use credit card for payments from the app. A monthly service fee would not be desirable either. At the same panel, also the pricing was discussed. The users were ready to pay as high as 1 euro per print for the service to be easy and nearby. Information security features of Print in city were seen as excellent.

The touchpoint mapping gave good direction for the design work of the mobile application, yet it left some unanswered questions related to the actual point of service. The information regarding what other services should be available in connection to the service was not discussed. Also, the need of education and possible channels of information were not discussed either.

5.1.3 Tools for explaining and realising

Prototyping and mock-up

A first mock-up of the application was also put to the panel to test. It was also improved according to the feedback received.

At this point, the mobile application was also renamed Print&Go, to illustrate the central feature of easy accessibility of the service. As visualisation tools we used a commissioned illustration of the users and the service. The illustration also brings out the feeling in our design. The finalized Print&Go design and the illustration can be viewed in appendix 4.

The mock-up is also a foundation for the discussions with the company. It was presented to the marketing director and product manager in a workshop at Canon Oy as a basis for application development.

Business model canvas

When going further to the business model of the service, a business model canvas was made based on earlier discussions and tools used. The canvas is depicting the Print&Go service.

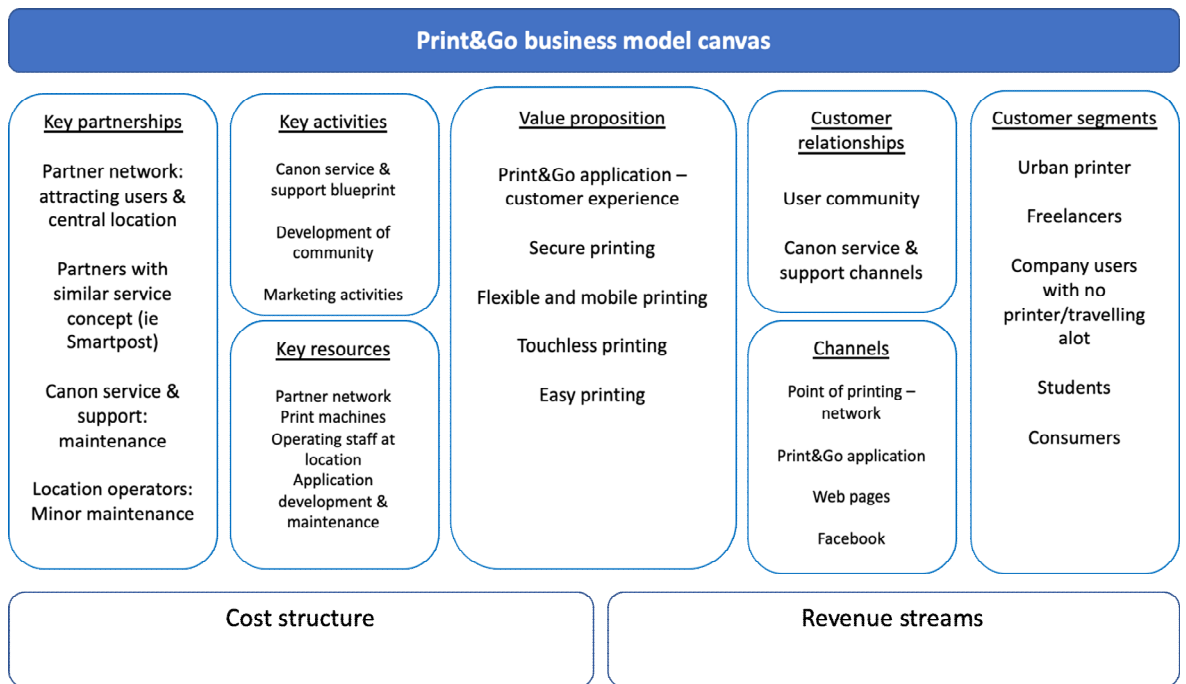


Figure 33. Printing service business model canvas

The customer segment in question is the Urban Printer -as a focus. Around this, it can be said that also company users without an own printer, students, freelances and consumers can be the customer groups. This was found to be an important observation, since also these other groups have an occasional need for printing but

The desired situation is that the users can create a community, where tips and good printing locations can be exchanged. The customer relationship manifests also when a customer is in connection with the Canon service and support organization.

Channels of delivering the service include the printing locations evidently. This is the most important channel of delivering the service. Important channel for the service is the mobile application, since it is delivering the customer experience that is promised. Other communication channels are Facebook and the web pages of the service.

The value proposition of the service includes the topics that were raised as the central points in the application design as well. Easiness of printing, high information security functionalities, flexibility, mobile printing in the form of the

application and touchless printing are the value propositions for the customer. These have also been used as a basis for the following strategy canvas formulation.

Key activities consist of Canon services and support functionalities coming from the service blueprint. Other activities that are to be completed for the service to operate are the development of the platform and community of printers, merchandising activities to assist the print service points in operations and general marketing activities for end users.

Key resources are the print service partner network, the printers, operator staff making minor maintaining for the printers at customer sites, and personnel needed to develop the service and the application itself.

Key partnerships include the partner network with printers, who provide the actual venue for printing. Also, the social media influencers are important in making the service known. Partnerships with similar services in the same venues should be considered as well. This is venue specific but should be looked into for added value. Key partnership is also the own organization to deliver the service and maintenance.

As a summary, the business model canvas is a good tool to grasp a whole picture of a service, also due to the fact that is a known tool by Canon personnel, therefore easy to understand. The canvas is underlining the importance of the network of printer locations as a point of customer service and delivering user experience. The business model is dependent on company internal discussions and 2 possible starting points are suggested in the business model canvas.

Strategy canvas

The strategy canvas of the printing service was drawn to make clear what are the elements that set the service apart from competition and also what are the features that should be developed and on the other hand, not emphasized. The canvas can be found in the figure 35 below. The x-axis is depicting the key factors

to the promotion of print and print services. The competitors are described in the canvas are the same than those discussed earlier in the chapter. The strategy canvas has been formulated based on the market situation of these competitor segments

1. Traditional print vendors (vendors selling printers and prints eg HP Instant Ink)
2. Print services (eg. Sokkeli and HBC services and library printing services)
3. Princh -service

Strategy canvas of printing service

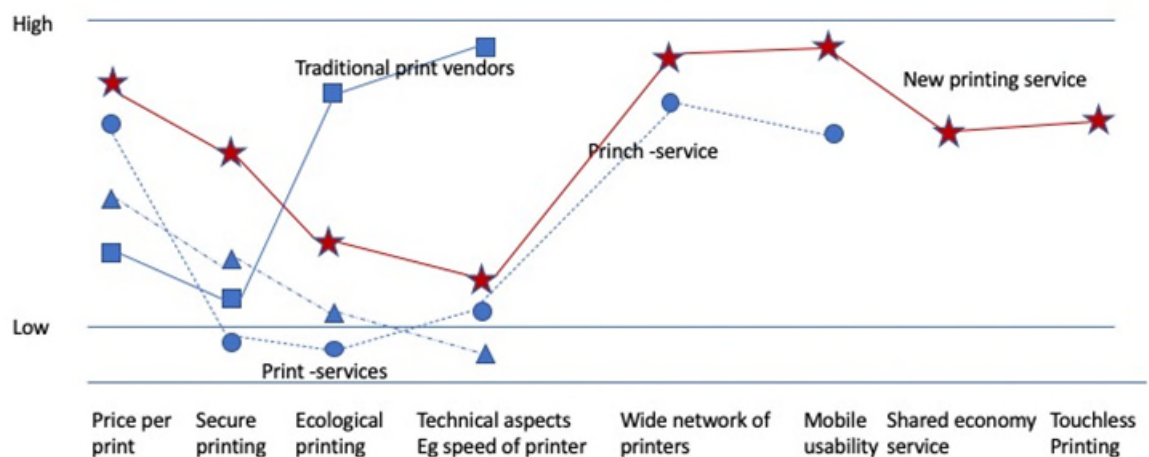


Figure 34. Strategy canvas for printing service

Based on this strategy canvas it can be seen that there for example price per print can be kept rather high due to the additional services that are offered in the service. The secure print options should be promoted more than competitors since this is a unique characteristic to a printing service. The messaging of ecological printing can be less emphasized since the message of a shared economy service is also unique. The technical aspects of the printing machines should not be included in the messaging.

As new messages, the mobile usability, shared economy messaging and touchless printing should be the key focal points of the new service. Once a wide

network of printers is installed, this should be added to the central messages as well.

Realizing

The last part of a service design process is about realizing. Realizing is the stage where the service is taken to the market. All details are developed, and all aspects of the service are checked. Usually a business plan is needed to roll out a service to the organization. (Moritz 2005, 145.)

In the case of the printing service, a service book is the main document to communicate the finished product. The service book is a document in which the whole mobile application is portrayed with all functionalities. With this document it is easy to communicate the finished product to stakeholders. The service book is found in appendix 2.

According to Canon internal guidelines of product launches, the following collaterals among others are to be prepared with in the company by the resources assigned to this work:

- Training material for internal use
- Training material for reseller use
- Website contents
- End user collaterals
- Service description

5.2 Business growth strategies and design

One aim of this thesis was to study the connection of business growth strategies and design. After a literature review of this topic, it was found that the selected growth strategies have differences and that design can be regarded as a tool for growth.

Blue Ocean strategy and design

At the heart of the blue ocean strategy is the idea that value must be re-invented. This means that instead of focusing on beating the competition, the focus should be on innovating a leap in value for your company and the buyers. (Kim & Mauborgne 2005, 12.) Design can give a lot to the innovation process. Von Stamm suggests that designers who are bringing a set mindset to businesses can open up new innovation frontiers. Designers by nature like challenges, experimenting, exploring and reinventing. (Von Stamm 2011, 316).

Philip Kotler explained that design is strong strategical tool that companies can use to gain advantages, but most companies neglect it (Kotler & Rath 1984). When finding information online regarding the relationship of Blue Ocean strategy and service design, some articles can be found. As applied in this thesis as well, the tools of service design can be used to assist in finding blue ocean for a service. Integration of these two can create a powerful holistic solution (Mohammed 2017).

5.3 Reflection to the research questions

In this there were 3 research questions and 1 sub question.

Question 1: What kind of printing service micro companies need?

Micro companies studied in this thesis are companies with 1-3 persons. The clear needs for the printing service can be found from the answers to the online survey and from the analysis of the interviews had with the representatives of the target group. As such it must be stated that a printing service is needed. Whereas the total need for printing is decreasing (see chapter 1.6), the need for printing is existing. The needs are displayed in the table below in order of importance.

Table 5. Central needs for a print service

Need	Intepretation
Easily accessible	Central location, wide network of printers
Information security	Technical solution to prevent prints or information printed from getting to the hands of others
User friendly machines	Clear display messages, technical solution
Multiple functionalities	Print, copy, scan -options (as opposed to only print)
Mobile possibility	Mobile application

Question 2. What are the key factors of a successful printing service for micro companies in Finland?

The thesis answered the needs of micro company users as such, and the figure representing the value innovation features is displayed on page 19. From customer point of view these can be said to be the key success factors, since they are setting the service apart from the competition. Also, from the company point of view, these are the attributes of the service that make it a blue ocean and therefore a successful printing service.

As a service, this printing service is measured according to the company internal KPI measurements that are set for all of the services. The financial and performance success of the service can be measured after a defined time when the service is in place. Therefore, this research question cannot be answered as whole on the basis of the results of this thesis and therefore is impacting the validity of the thesis.

Question 3. What kind of business model is most suitable for Canon, in order to service micro companies?

In the course of the research, benchmarking was used to Posti's Smartposti business model. The business model of Smartpost is varying based on the location that they are in. Posti is receiving a fee of their Smartpost point from the location (ie. shop, shopping mall etc) or then they are paying a fee for the location. This is dependent on the location and the attractiveness of it. The current business model of the Print in city -concept is somewhat different and shall be reviewed based on this study.

The flexible business model would be the most suitable for Canon as well, since the target is to grow a wide network of printers rather than making a similar profit of each printing location.

Sub question: What type of changes in the printing needs are seen in the chosen target group?

According to online survey analysis, complemented by the interview answers, the need for print has decreased during the past 3 years. Reasons for this was the overall digitalization of business. There were changes as per the industry the company was in, but overall reason for using less paper is the use of digital tool in signatures, collaboration tools and changes in the way work is conducted, such as the use of multiple screens. Further digitalization of the society will affect the need to print by decreasing it more. An example of banking industry and ie. opening a bank account, was given.

For future printing needs, the users stated that there will be a need, yet changed. Decrease was still anticipated but the medium was seen important for certain operations. The willingness to buy print as service is existing.

5.4 Service design tools in the Canon business context

In the development project of this thesis, service design tools were used due to the fact that they fit this type of development project well. A Canon product manager,

Riitta Mölsä was interviewed regarding the results of the project and she stated that a lot of new information has been provided to the company. According to her, it has been very beneficial to work with the actual users and hear first-hand about their opinions and ideas. She also gave comments regarding the finished product, the mobile application. According to the statements, it will be put into production after further validations internally. (Mölsä 23.4.2020.)

In a workshop conducted with Mrs Mölsä and marketing director of Canon Oy on 10.6.2020, the material was reviewed, and it was decided that the project will proceed in 2 directions. Firstly, the mobile application will be addressed as mentioned above. At the same time also, pilot locations will be picked, and the specified functionalities will be piloted on. Secondly, the business model shall be reviewed so that a wide network of printers can be created and that joining the network will be appealing for the resellers and partners involved.

Further measures regarding the service design tools include wider adoption of them into the company operations. The author will act as a facilitator in this work and has been requested to do so by the company management. Firstly, the tools of service design will be used to deepen customer understanding and through that, strengthen the relationship with prospects.

Secondly, marketing itself will employ tools of service design more closely to its operation. Using the results and example of this thesis, the tools of service design are utilized in the marketing processes.

6 Discussion

The objective of this thesis is to compete the development work using tools of service design. Together with this concrete goal, the purpose of this thesis is to deliver the company an understanding of the benefits of design thinking when pursuing growth.

At the moment, business world is experiencing new challenges in the form of globalization, disruption of technologies, increasing demands from consumers and social change in the form of shared economies and environmental issues to name a few. Companies are facing the challenges to rapidly answer to these changes and companies should find new ways to change their organizations and ways of working to be able to stay in competition. (Frazer 2007, 66-67.) This cross-roads of changing demand and company abilities to answer to them, brought about the topic of this research. In the theories of Liedtka and Ogilvie it has been brought clearly to light that design can truly help companies answer better to the needs of today. This is also a reason why the topics of the research are very current to Canon and will be taken further within the company. The objective of making the benefits of design thinking and service design tools visible and concrete has been accomplished since the tools have been integrated into more processes than before. At the time of finishing the project, service design tools were embedded into sales and marketing tools as new and the feedback from the respective departments has been encouraging. This is concretely showing that the research has been beneficial to the organization.

The concrete outcome of this thesis is the developmental project that led to Print&Go service and mobile application. The project was divided into the categories based on Moritz model of 6 steps in a design service project. The start of the project was labelled with a typical 'fuzzy front end'. The beginning part of the process can typically have elements that are driven by ad hoc decisions and processes that are not streamlined. (Almqvist 2017, 3.) The iterative nature of the process was clear, but it also made learning possible throughout the process.

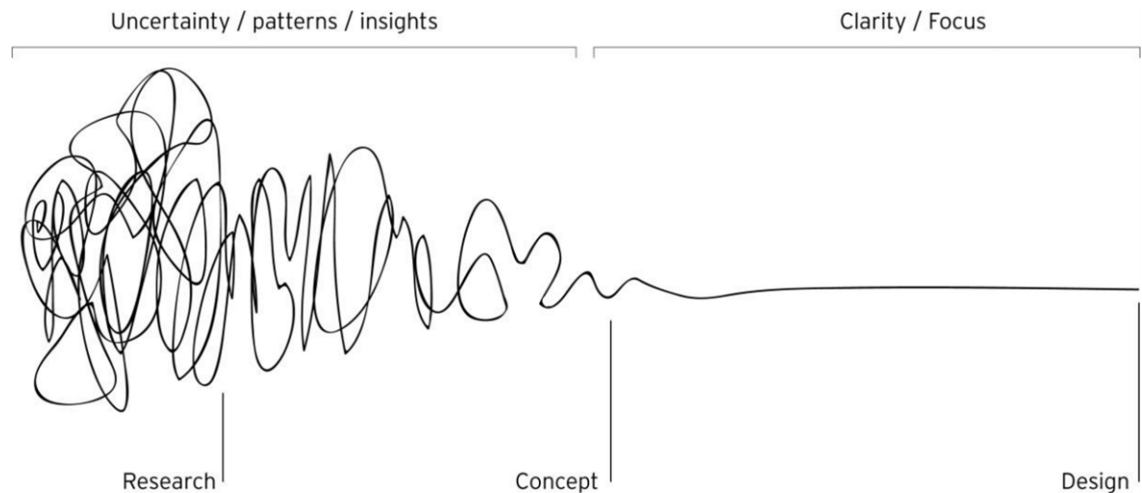


Figure 35. The fuzzy front end of a design process, Damien Newman (2010).
Adopted from Almqvist, F

The development project as whole shows that service design *is* a powerful tool into getting thorough understanding of the customers' needs. The structure of the service design process was appreciated in the company and the outcome of the process was something new. The Print&Go application prototype and service book will be used as documentation during the development work. The importance of creating services targeted to even smaller niches was also brought up to discussion.

The research also raised questions. One of the central ones was is the connection of design and organizations. Already Brown is stating that taking a human-centred approach to business is changing various aspects of it. Companies should start by asking the right questions and gathering the people who are design thinkers. (Brown 2009, 236; 240.) Maula & Maula continue that combining leadership, organizations and design mean that people's needs, experiences, possibilities of the business setting and requirements of success are combined. This all requires empathy, human-centricity and an open mind. (Maula & Maula 2019, 29.)

The validity and reliability of a research are important to think. Hanington points out that executing research, whether scientific or human-centric, is necessary to conduct in a thorough manner. It is important that the researcher has a scientific attitude and is able to think sceptically, systematically and ethically. When using

tools of human-centric design as a method of research, it is valuable that researcher is informed of good research conduct and can therefore decrease bias and be objective. (Hanington 2010, 19-20.) In this research, the author was very close to the industry through employment. This created a situation where this was a consideration and on the responsibility of the researcher to keep the bias to minimum. When using quantitative methods, such as interviews, ethnography and group discussions, a lot of material is created that has valuable information about the habits and lives of the interviewees. It is common that the researcher is close to the interviewees and tries to capture as much information explaining certain conducts. The researcher creates his or her own interpretations of this conduct. The basis and reasons for certain interpretations are important to acknowledge, since they tell a lot about the reliability of the research. Triangularisation can be used to increase the reliability of the research, for example by using 2 researchers in the situations, or using duplicate methods in certain areas. (Ojasalo, Moilanen, Ritalahti 2018, 105.)

This situation was acknowledged by the researcher at a very early stage and it was brought up in several discussions. 90% of the interviews conducted were carried out by 2 researchers in order to increase the reliability of the research.

6.1 Areas of further study

The success of design and design-led companies in Finland would be a study area that would interest me greatly. From this area, only a limited number of researches was found. Taken into consideration the benefits, this would be an interesting topic of further research.

Another topic that comes very close to me is the connection of design and marketing. In marketing related roles, design thinking is a natural part. Both of these functions are concerned with the same target: improving the quality of customers life through the services offered. (Bruce 2011, 331.) Despite of the similar goals as per customer and services, the measurements can differ. Marketing and design are measured by different performance indicators. (Bruce 2011, 339.) This can create undervaluation of both, whereas the disciplines would

benefit from each other. This relationship too is a topic that would interest me greatly.

Overall design and organizations is an interesting topic from the point of view that how can a company adopt design thinking into a specific function.

6.2 Reflection of learning

This thesis has been very interesting to make. The theories of business growth were familiar to me, yet, combining these to design thinking and service design was not. This proved to be very interesting and gave me a lot of new perspectives on future applications in my career but also aspirations regarding further research and studies. Completing a service design project was new to me in this scale. I had utilized the tools but during the spring 2020 course 'Service Design', the full process was learned and implemented. T

An important learning has been that design and especially mind set of design can contribute into accelerating change. I can identify changes in my own thinking leading to changes in the way that I work. I truly believe that design can help companies to bring more productivity and creativity into their operations.

Sources

Almqvist, F. 2017. The fuzzy front-end and the forgotten backend: User involvement in later development phases. Research paper. The Oslo School of Architecture and Design.

Ansoff, I. 1957. Strategies for diversification. Harvard business review. Online. Accessed through:
https://www.casrilanka.com/casl/images/stories/2017/2017_pdfs/sab_portal/course_material/strategies_for_diversification.pdf. Accessed 9.7.2020.

Blue Ocean strategy. 2020. Blue Ocean strategic moves. Online article.
<https://www.blueoceanstrategy.com/bos-moves/canon/>. Accessed 8.7.2020

Bellis, M. 2019. History of computer printers. Thoughtco. Online article.
<https://www.thoughtco.com/history-of-computer-printers-4071175#:~:text=The%20history%20of%20computer%20printers,of%20laser%20printers%20to%20come>. Accessed 2.7.2020

Buchanan, R. 2015. Worlds in the Making: Design, Management, and the Reform of Organizational Culture. She ji. The Journal of Design, Economics, and Innovation Issue No.1, Autumn 2015. Tongji University and Tongji University Press.

Business week. 1975. The office of the future. Executive briefing -article.

Brown, T. 2019. Change by design. How design thinking transforms organizations and inspires innovation. 2nd edition. Harper Collins. New York. US.

Brown, T., Wyatt, J. 2010. Design thinking for social innovation. Stanford social innovation review.

Bruce, M. 2011. Connecting marketing and design. In book Cooper, R., Junginger, S., Lockwood, T. (ed.) The handbook of design management. pages 331-346. Berg. Oxford. New York. USA.

Canon 2019. About Canon Europe. https://www.canon.co.uk/about_us/corporate-information/. Accessed 9.7.2020.

Catalanotto, D. 2018. A Tiny Service Design History. <https://service-design.co/book-a-tiny-history-of-service-design-368ed603797c>. Accessed 9.7.2020

Catalanotto, D. 2019. Book: What is service design?. Online article. <https://service-design.co/book-what-is-service-design-1d24dd471762>. Accessed 9.7.2020

Danish design center. 2016a. THE DESIGN LADDER: Four steps of design us. Article. <https://danskdesigncenter.dk/en/design-ladder-four-steps-design-use>. Accessed 9.7.2020

Danish design center. 2016b. The user of design in Danish companies is 2016. infographics. https://danskdesigncenter.dk/sites/default/files/pdf/design_ladder_2016_eng_0.pdf Accessed 9.7.2020.

Design management institute. 2020. 2015 dmi:Design Value Index Results and Commentary. Online article. <https://www.dmi.org/page/2015DVlandOTW> . Accessed 29.7.2020

DMR, 2019. Canon internal report provided by DMR research company.

Frazer, H. M. A. 2007. The practise of breakthrough strategies by design. Journal of business strategy. Vol. 28 No. 4, pages. 66-74. Emerald group publishing.

Frey, C. 2010. How to brainstorm using a lotus blossom map? Online article. The Mind Mapping Software Blog. http://mindmappingsoftwareblog.com/wp-content/uta7f49/Brainstorm_with_Lotus_Blossom_Map.pdf. Accessed 2.8.2020.

Hanington. B. 2003. Methods in the Making: A Perspective on the State of Human Research in Design. Design issues, vol 19, no 4. University of Massachusetts.

Hanington, B. 2010. Relevant and Rigorous: Human-Centered Research and Design Education. Design issues, vol 26, no 3. University of Massachusetts.

Johansson, U., Woodilla, J. 2009. Towards and epistemological merger of design thinking, strategy and innovation. Study paper. 8th European Academy Of Design Conference, Scotland

Katzan, H. 2011. Essentials Of Service Design. Journal of Service Science. Vol 4, no 2.
https://www.researchgate.net/publication/292952356_Essentials_Of_Service_Design/link/56befe8a08aee5caccf4b278/download. Accessed 9.7.2020

Kim, W.C., Mauborgne, R. 2004. Blue Ocean strategy. Harvard business review.
<https://hbr.org/2004/10/blue-ocean-strategy>. Accessed 14.6.2020

Kim, W.C., Mauborgne, R. 2005. Blue ocean strategy. Harvard business review press. Boston. Massachusetts, USA.

Kim, W.C., Mauborgne, R. 2017. Blue ocean shift. Hachette books. New York. USA.

Kotler, P., Rath, A. 1984. Design: a powerful but neglected strategic tool. Journal of business strategy. Vol. 5. Issue 2.

Liedtka, J. 2018. Why design thinking works. Harvard business review.
<https://hbr.org/2018/09/why-design-thinking-works>. Accessed 9.7.2020.

Liedtka, J., Ogilvie, T. 2011. Designing for Growth : A Design Thinking Tool Kit for Managers. Columbia university press. New York. USA.

Marsh, S. 2018. User research. Kogan Page. UK and USA.

Maula, H., Maula, J. 2019. Design ja johtaminen. Alma Talent.

McKinsey & company. 2018. The business value of design. McKinsey quarterly.
<https://www.mckinsey.com/business-functions/mckinsey-design/our-insights/the-business-value-of-design#>. Accessed 9.7.2020

McNeilly, M. 2011. Sun Tzu and the Art of Business: Six Strategic Principles for Managers. 2nd edition. Oxford University Press. UK

Minzberg. H. 1988. Crafting strategy. Article. The McKinsey Quarterly.

Moritz, S. 2005. Service design. A practical access to an ever evolving field.
Accessed through <https://serve4impact.blog/2005/12/31/stefan-moritzs-2005-thesis-practical-access-to-service-design/>. Accessed 9.7.2020

Moore, K. 2011. Porter of Mintzberg? Whose view of the strategy is the most relevant today? Online article. Forbes magazine.
<https://www.forbes.com/sites/karlmoore/2011/03/28/porter-or-mintzberg-whose-view-of-strategy-is-the-most-relevant-today/#568a138f58ba>. Accessed 10.7.2020

Muhonen, R. 7.4.2020. Posti regional executive. Posti Oyj. Interview. Helsinki.
Interviewed by Petra Martiskainen

Muhammed, S. 2017. Blue ocean strategy and service design. Online article.
<https://medium.com/@shahmm/blue-ocean-strategy-and-design-thinking-part-1-bffde3efa172>. Accessed 27.7.2020.

Mölsä, R. 23.4.2020. Product developer. Canon Oy. Interview. Helsinki.

Nenonen, S., Storbacka, K. 2018. Smash. Using market shaping to design new strategies for innovation, value creation and growth. Emerald publishing house. UK.

Nixon, N. 2016. Strategic design thinking. Innovation in products, services, experiences and beyond. Bloomsbury

Ojasalo, K., Moilanen, T., Ritalahti, J. 2018. Kehittämistyön menetelmät. Sanoma Pro. Helsinki

Ostergaard, K. 2019. Transforming legacy corporations. John Wiley & Sons. UK

Oulun Yliopisto. 2020. Mikroyritykset ja niiden toimintaedellytysten vahvistaminen instituutin toiminnan keskiössä. Kerttu Saalasti institute. Web article.
<https://www oulu.fi/ksi/node/63193>. Accessed 27.7.2020

Polaine, A., Lovlie, L., Reason, B. 2013. Service design: From insight to implementation. Rosenfeld media. USA.

Porter, M. 1996. What is strategy. Full-text Article. Harvard business review.

Porter, M. 1998a. Competitive strategy. Techniques for analyzing industries and competitors. Free Press. New York. US.

Porter, M. 1998b. On competition. Harvard business review. Boston. US.

Quocirca, 2019. Print2025. The journey to digital reinvention. Research report. Accessed 3.7.2020

Stickdorn, M., Hormess, M., Lawrence, A., Schneider, J. 2018. This is service design doing. O'Reilly Media. Canada.

The British Design Council. 2019. What is the framework for innovation? Design Council's evolved Double Diamond. <https://www.designcouncil.org.uk/news-opinion/what-framework-innovation-design-councils-evolved-double-diamond>. Accessed 9.7.2020

Thomas, D. 1978. Strategy is different in service businesses. Harvard business review. Online article. <https://hbr.org/1978/07/strategy-is-different-in-service-businesses>. Accessed 27.7.2020

Tuulaniemi, J. 2011. Palvelumuotoilu. Talentum Media.

Vaajakallio, K., Mattelmäki, T. 2016. Yhteissuunnittelu ja palveluiden ideointi. In book Miettinen, S. (toim.) Palvelumuotoilu – uusia menetelmiä käyttäjätiedon hankintaan ja hyödyntämiseen. s. 77-98. Teknologiateollisuus ry, Savonia-ammattikorkeakoulu, Kuopion muotoiluakatemia. Helsinki.

Van Assen, M., Van Der Berg, G., Pietersma, P. 2009. Key management models. 2nd ed. Prentice hall. UK

van Oeveren, K. 2020. The difference between design thinking and service design. Blog. Koos Service Design. <https://www.koos servicedesign.com/blog/difference-between-design-thinking-service-design/#:~:text=As%20we%20see%20it%20as,mindset%2C%20a%20way%20of%20thinking>. Accessed 9.7.2020

Vault, 2020a. Overview. Online article. <https://www.vault.com/industries-professions/industries/printing>. Accessed 2.7.2020

Vault, 2020b. Background Online article. <https://www.vault.com/industries-professions/industries/printing/background>. Accessed 2.7.2020

Von Stamm, B. 2011. The role of design in innovation: a status report. In book Cooper, R., Junginger, S., Lockwood, T. (ed.) The handbook of design management. pages 316-330. Berg. Oxford. New York.

Wardour. 2018. Rethink ink. How print is disrupting our digital world 2018. Research report. Wardour Communications Ltd. UK

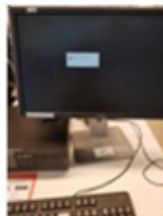
Appendices

Appendix 1. Shadowing at Sello library

Locating
Service –
complicated



User friendliness
Manuals, instructions were not up to date



- Information security
1. Long distance to printer
 2. Other people close
 3. No PIN release
 4. Other person's prints at the machine
 5. Customers able to access user data at the machine



1



2



3



4



5

Appendix 2. Online questionnaire questions

Questionnaire on printing

This survey is made by a group of MBA students from Haaga-Helia, as a part of service design studies. As a project the groups is studying the printing habits and future needs regarding printing of microcompanies. As a result of the project we are looking to create a great service to your needs! Many thanks for advancing our studies and giving your valuable answers!

It will take an average of 3 minutes to complete the survey and your input is highly valued!

Many thanks for your time!

* 1. Does your company have a permanent office?

- ☐ Yes, I often work from the same location (eg permanent office)
- ☐ Yes, but I work alot remotely
- ☐ No, I don't have a permanent office and work from other location but mostly from the **same one** (eg coworking office/space)
- ☐ No, I work from other locations and usually the location varies (eg. libraries, cafe's, coworking spaces)
- ☐ Other (specify)

* 2. You answered that you work from **another location** than a permanent office. Do you have access to a printer or multifunctional device (printer, copier and scanner in 1)?

- ☐ Yes
- ☐ No

* 3. How many employees are there in your company?

- ☐ 1
- ☐ 1-3
- ☐ 1-5
- ☐ 1-10

* 4. Your age group?

- ☐ 18-23
- ☐ 24-30
- ☐ 31-40
- ☐ 41-50
- ☐ 51-
- ☐ Prefer not to say

* 5. On average, how many documents do you print out in a week?

- ☐ 0
- ☐ 1-10
- ☐ 1-100
- ☐ More than 100

* 6. What kind of documents do you print?

- ☐ Tickets and confirmations (for example train and flight tickets, hotel and participation confirmations, order confirmations)
- ☐ Reading copies (for example reports, articles, emails)
- ☐ Marketing materials (for example leaflets, brochures, point of sales materials)
- ☐ Logistics documents (for example freight documents, dispatch notes, customs documents)
- ☐ Address stickers
- ☐ Documents for officials (for example KELA, tax office)
- ☐ Contracts

* 7. Do you keep the documents you have printed?

☐ Yes

☐ No

* 8. Why do you keep the documents you have printed?

☐ I want to return to the notes made

☐ I don't want to re-print the document

☐ I will send the documents to authorities (for example tax certificate, KELA form)

☐ It is easy to absorb information from a paper document

* 9. Why do you **not keep** the printed document?

☐ It is no longer needed (for example the trip is over)

☐ I don't have the space to keep paper

☐ I save everything in electronic form

* 10. When you need to print, do you have access to a printer?

☐ Yes

☐ No

* 11. Do you have situations, where you would need to print, but it is difficult/impossible?

☐ Yes, the printer is **located too far** from me

☐ Yes, sometimes the printer is **not functioning** as it should (toner finished, paper finished, other malfunction)

☐ Yes, using the printer is too difficult (for example printer is too difficult to connect to, it is difficult to get the print job to the printer)

☐ No, I have an access to a printer when I need it

☐ No, i don't need a printer

* 12. If you could make the decision, where would you locate a shared printer?

- ☐ A place which is on my daily route (for example stations, public transportation)
- ☐ A place where I eat or have a coffee (for example cafe's, lunch restaurants)
- ☐ A place where I shop (for example kiosks, grocery stores, clothing stores)
- ☐ A recreational place (for example sports venues)
- ☐ Shopping malls
- ☐ Which other location?

* 13. What is important to have in a printer?

- ☐ A4 size
- ☐ A3 size
- ☐ Colour printing
- ☐ Black and white printing
- ☐ Printing of special materials (for example address stickers, envelopes)

* 14. What do you consider 3 most important attributes regarding a printing service?

- ☐ Information security
- ☐ Accessibility (central location)
- ☐ Easy payment options
- ☐ User friendly printing machines (display texts etc)
- ☐ Multiple options for different needs available (copying, scanning, printing)
- ☐ Mobile use possibility
- ☐ Other (specify)

15. We would like to contact you with a possible interview on the topics. If it is ok with you, please provide your contact details below. If you leave your contact details, we will also provide you with a summary of the results.

Nimi

email

16. Do you want to bring out some other aspects regarding printing that you would like to mention?

Edell.

Seur.

Appendix 3. Interview template used

Service Design interview
Themed interview

Questions -template

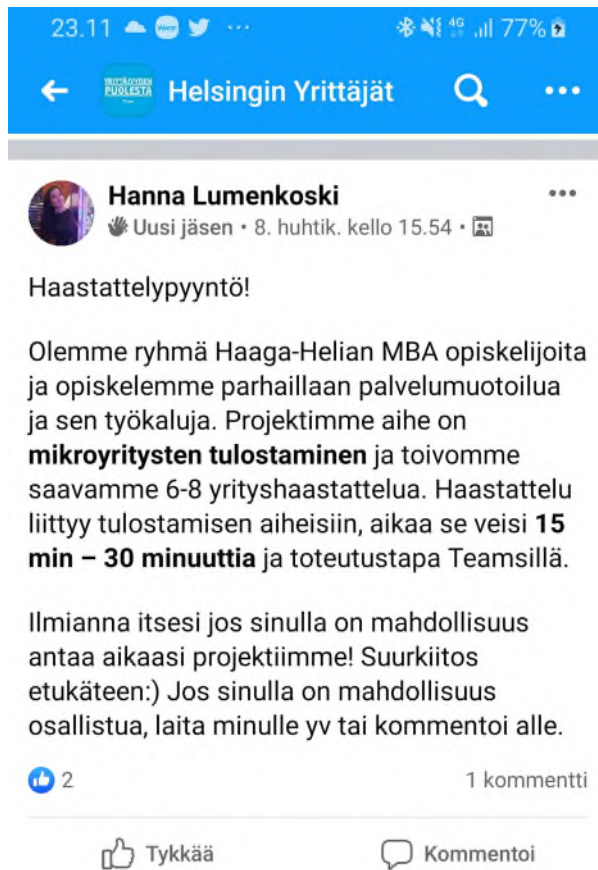
These are themes for the interview and act as guidance.

Interviewee:

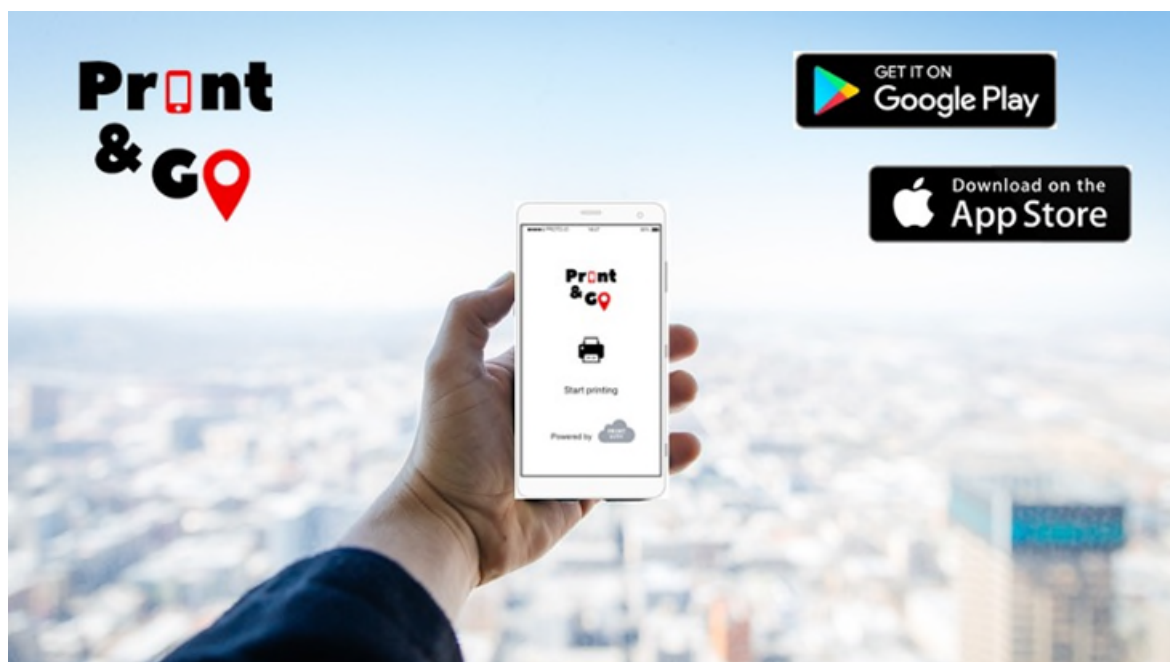
Interviewers:

1. Company questions
 1. What type of business do you have?
 2. Are you involved with ecommerce?
 3. How many employees do you have currently? Are you the only one?
 4. Have you been long in business?
 5. How do your customers order from you? email, order template, fairs, portal
 6. Do you have a permanent office?
2. Printing -related
 1. What type of tools do you use in your business? Physical? Software?
 2. Do you print at the moment?
 3. Do you have a printer at your office/place of work?
 4. What documents do you print?
 5. Do you outsource some print materials? eg marketing material?
 6. How has your printing changed in the last 3 years?
 7. What has impacted this?
 8. How do you think that you will print in 3 years from now?
 9. What are the functionalities in printing that you value?
3. Way of working -related
 1. Are you mobile in your working style? Do you work from multiple locations?
 2. What is your typical work day like? What services do you use?
 3. Have electronic tools replaced print in your work? eg. electronic signatures -services
4. Attitude towards technology and services
 1. Do you consider yourself an early adopter in technology?
 2. Would you like to buy printing as service?
 3. Where would you locate a printing service?
5. Other
 1. What do you value?
 - 2.

Appendix 4. Post in 'Helsingin Yrittäjät' -facebook group to get interviewees



Appendix 5: Service book – Print&Go

An advertisement for the Print&Go app. It features a person standing on a city street, with their legs and feet visible. The background is a blurred city street. The text is overlaid on the image. In the top left corner, there is the Print&Go logo. The text includes:

To whom is it for?
The service is designed for you, Urban Business Printer

Why use Print&Go?
If you have a seldom printing need, want to print something on the go and find a printer? This is your service! It's close by, easy to use and flexible.

How to get started?
Using Print and go is easy! Just download the app and start using it or follow the instructions to come.

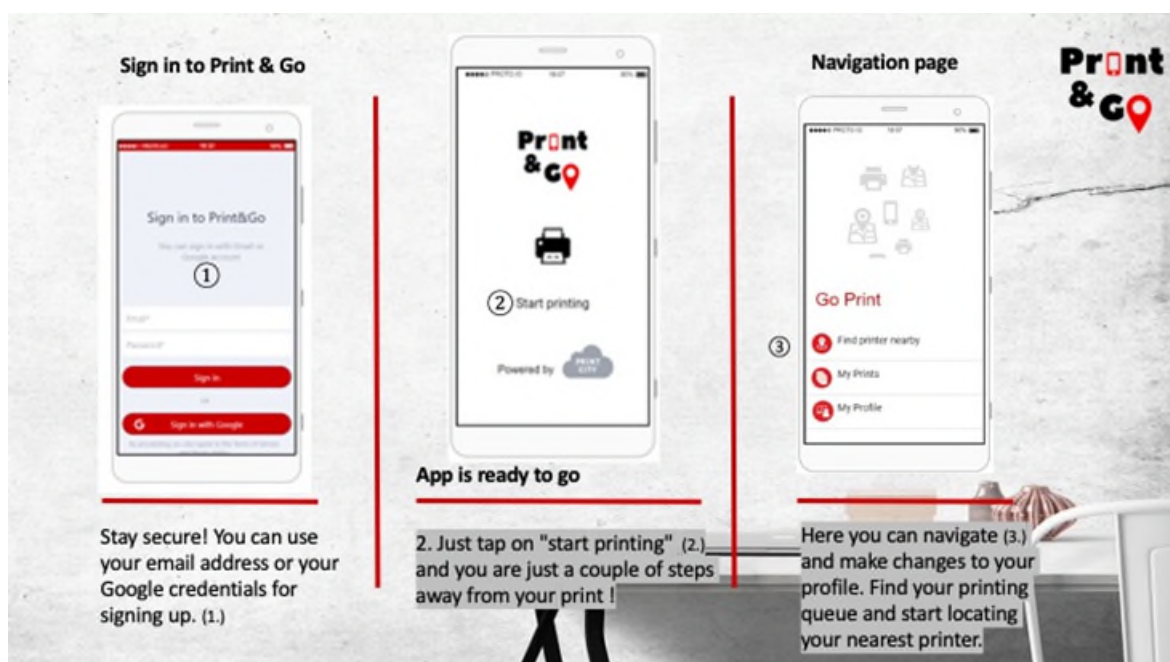
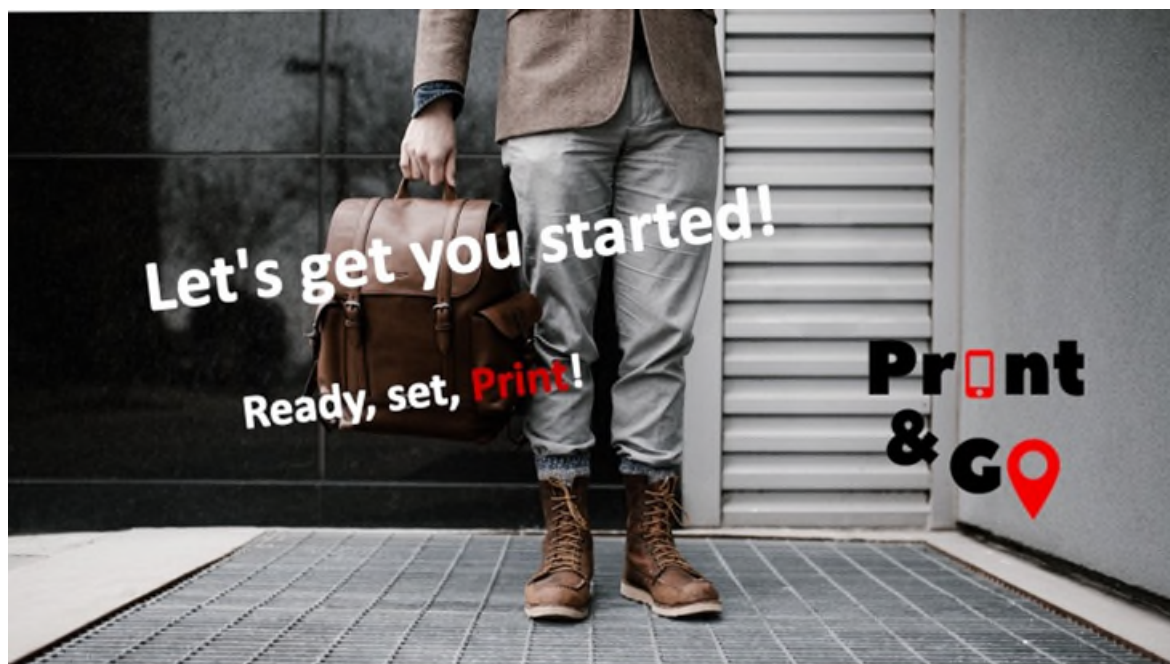
What can I print?
You can print A4 papers in B&W or colour, stickers and a lot more! You will find all the options on the App. Locate easily the printers that provide the features you need.

Please visit www.printgoapp.com for more information!

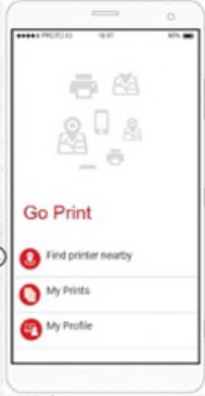
Urban Business Printer?

- A person who works in a micro company or is self employed
- Lives in a bigger city
- Needs to print occasionally
- Wants to leave the owning of a printer to someone else

Service book – Print&Go, pages 3 and 4



Service book – Print&Go, pages 5 and 6



Find printer nearby

Go Print

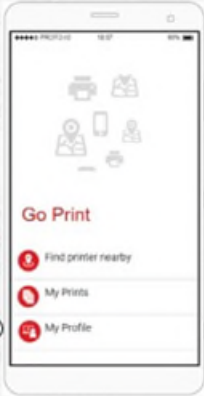
④ Find printer nearby

My Prints

My Profile

Print & Go

Find a printer (4.) that has the printing options you are searching for. Is it black and white A4 or something more special? Printers are colour coded so you can see instantly where you find those functionalities you are looking for.



Set up your profile (5.)

Go Print

Find printer nearby

My Prints

My Profile

Print & Go

Pin down your favorite printer locations for future. (6.)

Preselect your printer settings for faster and easier printing. (7.)

Add your payment method (8.), check out costs (9.) and payment history (10.), choose your language (11.) and select your notifications (12.).

⑥ My favorite printer locations

⑦ My favorite printer settings

⑧ Payment methods

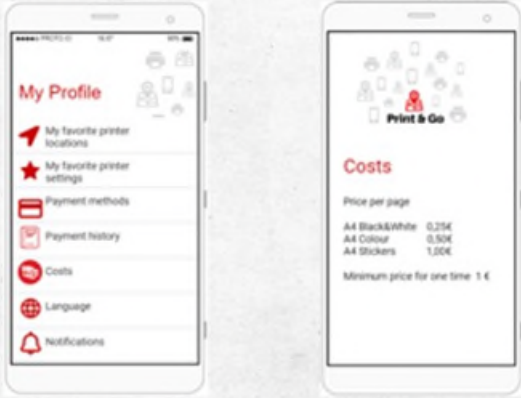
⑨ Payment history

⑩ Costs

⑪ Language

⑫ Notifications

Service book – Print&Go, pages 7 and 8



Print costs

You can be stress free and know exactly how much your prints are going to cost. Please refer to Costs page for all the information necessary regarding pricing.

For more information, please see www.printgoapp.com

Under your profile you will also find all the costs related to printing. (10.)

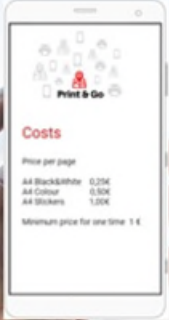
Print & Go

Pricing model
Let's keep it simple! No need to make a deposit, just pay as you go.

Minimum price 1,00 € per printing in your queue.

Pricing examples (more info on your app):

- 0,25 € per B&W. A4 (one sided)
- 0,50 € per colour A4 (one sided)
- 1,00 € per stickers B&W, A4, 20 stickers



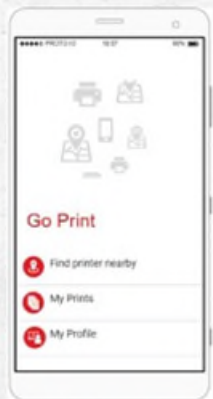
Print & Go

VISA

mastercard

Service book – Print&Go, pages 9 and 10

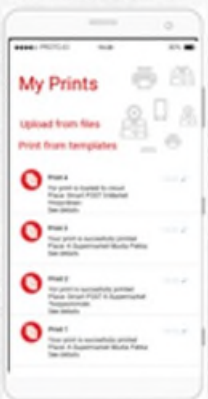
My prints (13.) – Here they are!



13

Press **Print from templates** to find fresh ideas for your prints. We have gathered useful templates for annual greeting cards, invitations, thank you notes and a lot more.


Upload from files From email, device, dropbox, drive... You name it!




14
15

On this page you will find your print requests (14.) and history (15). The latest ones are waiting to be released. Select your prints when you have arrived at the printer.

If you have pre-selected your favorite printer you will see its location here.



Release your print!



16
17


Secure printing! Release your print when you have arrived at the printer and be sure that you are the only one to see your prints.

Final step!

This is your last step! According to the printers' features, you will get instructions on how to print. The most common way is to show the printer a QR code (16.) from your mobile to release your print or even type a pin code (17.), if your internet connection is out.

Some Print&Go locations have a QR code on the printer and you can release your print by reading the code with your Print&Go app.

Printing is made easy!



Service book – Print&Go, pages 11 and 12

