www.Designedbymyself.com

"Co-creating fashion"

Master Thesis
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www.Designedbymyself.com

"Co-creating fashion"

Master Business Administration
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The authors declare that the text and work presented in this Master thesis is original and that no sources other than those mentioned in the text and its references have been used in creating the Master thesis.

I Preface

'I don't do fashion, I am fashion' - Coco Chanel

The origin of this thesis started around 10 months ago, based on our enthusiastic thoughts around a study project in relation to co-creation. The initial though was a business idea, based on the possibility to mass customize fashion, but since we both also needed a master assignment we decided to conduct a research based on Designedbymyself.

During the business idea generating phase we joined a summer school for young entrepreneurs who wanted to elaborate on and work out their business idea. This summer school was a very interesting and challenging week. But while we were working on this business plan we encountered the fact that a lot more research was needed to shape this idea. Therefore a master thesis assignment was the perfect solution.

We learned a lot during this research, but above all we had a lot of fun. We even went to Paris for a fabric fair (Premiere Vision). But the time passed quicker than we thought, literally and figuratively.

After six months of hard work, we are very content with the result; the thesis called 'www.designedbymyself.com, co-creating fashion' that lies in front of you. We hope you enjoy reading it.

Krystel Singh and Marlous Vennegoor op Nijhuis

II Acknowledgements

'No one who achieves success does so without the help of others.' – Alfred North Whitehead

In this section we would like to thank everyone who helped us in finalizing this thesis.

First of all, I want to express my gratitude to my family and especially my parents. They always were there for me to support and help me or just to listen to my stories that were sometimes hard to understand and always long-winded. Mom and dad, thanks for everything.
Furthermore, I want to thank my sister, Esther for being always interested and willing to help with anything, anytime.
Secondly, I want to emphasize my gratitude towards Geert-Jan , who ensured that I wrote my thesis without losing myself. Thank you for putting things in perspective and preventing me from becoming an over stressed hermit.
Third, I want to thank our supervisor, or better our mentor, Henk Kroon. You were a real mentor, the first I ever met. You provided the conditions in which I could learn, instead of just telling me what to do. Your lessons were not exclusively educational, there were many live lessons you taught me. Those I will never forget.
Finally, I want to express my gratitude towards Marlous. Thank you for the great time during this year. Because of you I got to know myself better. Our cooperation was impeccable and this thesis is the product of that.

Krystel Singh

I also have an array of people that deserve and have my great appreciation for making this thesis possible.
First of all, I want to start thanking my parents, for their support during the proceeding period of six months. They were always there for me, even at the moment when they did not understand what is was talking about, they did offered me a listening ear. They encouraged me to get the utmost of myself.
Secondly, I want to thank my brother, Jeroen, who was my 'technical' support. He was always willing to help me and explain me things in relation to the technical website issues. He was also my sparring partner, he was always critical to this research and business idea and he put things in perspective.
Third, I want to emphasize my gratitude towards Maurits, he was sometimes critical but he always offered me support and was there for me at the stressful moments.
Fourth, I want to thank our supervisor, Henk Kroon. I really enjoyed our meetings, full of stories, laughs, life lessons and of course also serious moments. I really can appreciate this personal tough. You give us advice but moreover you created an environment where we kept our freedom and thoughts, but were you provided critical comments. Instead of just telling us what to do, you made us being critical to this thesis.
Finally, I want to express my gratitude towards Krystel. I am happy I met you during this master, you were always enthusiastic and our thoughts were always on one line. Our cooperation was fantastic; we really did complement each other.

Marlous Vennegoor op Nijhuis

III Summary

'The main thing is to keep the main thing the main thing.' – Stephen Covey

The goal of this thesis is to **design a web strategic and marketing plan for the newly set up company Designedbymyself.**

On the website www.Designedbymyself.com customers can design their own dresses. To create a successful online presence, the first research question was:

1. ***How can online companies create a successful online presence?***

This research question was addressed by proposing and justifying the 4S Web Marketing Model. According to this model, there are decisions to be made on four areas, namely strategic, website, organizational and technological. In accordance with the 4S Web Marketing Mix Model, research question 2 – 5 were formulated:

2. ***What are the strategic dimensions and parameters affecting the online business?***
3. ***What are the website issues affecting the online business?***
4. ***How to create an integrated online organization?***
5. ***What are the technologies required for building the online business?***

To address these (rather general) research questions properly, literature regarding co-creation and mass customization was studied. Subsequently, sub research questions could be formulated (see table 1).

To answer these (sub) research questions properly, there was a initial literature study conducted. However, four sub research questions were not yet answered through the literature study. These research gaps were addressed in chapter 3 and 4 through empirical studies (see table 1).

S-element	Issues	Research questions	Sub research questions	Methodology	Data collection method(s)
Scope	**Strategic issues**	***2.What are the strategic dimensions and parameters affecting the online business?***	2a: What are the strategic dimensions and parameters in the business environment affecting the online business?	**Multiple case study; strategic canvas**	**Desk and web research and customer survey**
			2b: What are the internal strategic dimensions and parameters affecting the online business?	Literature: value chain analysis	Desk research
			2c: What are the strategic dimensions and parameters affecting the online business regarding strategic objectives?	**Multiple case study: best in class benchmark**	**Desk and web research**
			2d: What are the strategic dimensions and parameters affecting the sustainable competitive advantage of the online business?	Literature; achieving strategic capabilities	Desk research
Site	**Web site issues**	***3.What are the web site issues affecting the online business?***	3a: What are the website issues affecting the co-creation of value of the online business?	**Single case study: apply DART model**	**Desk research and web analysis**
			3b: What are the website issues affecting the Web Experience of the online business?	**Single case study; web experience analysis**	**Customer observations and interviews**
Synergy	**Organizational issues**	***4.How to create an integrated online organization?***	4a: How to create an integrated online organization through the front office?	Literature; communication and marketing strategy	Desk research
			4b: How to create an integrated online organization through the back office?	Literature; customer service, order processing and fulfillment.	Desk research
			4c: *How to create an integrated online organization through third parties?*	Literature; third party analysis	Desk research
System	**Technological issues**	***5.What are the technologies required for building the online business?***	*5a: What are the general technologies required for building the online business?*	Literature; general technological issues	Desk research
			5b: What are the technologies required for co-creation of value through mass customization?	Literature; technologies to enable co-creation.	Desk research

Table 1: Overview of research

After chapter 4, all sub research questions were addressed and conclusions were drawn in chapter 5 to answer the sixth research question: ***How will the strategic and marketing plan of Designedbymyself look like?*** and to reach the goal of this thesis: **Design a web strategic and marketing plan for the newly set up company Designedbymyself.**

The conclusions regarding the strategic and marketing plan of Designedbymyself are summarized below.

Strategic issues

The first issue, the strategic issue, is researched by means of literature and multiple cases studies. Literature states that the strategic dimensions that affect an online business are (a) the business environment, (b) internal analysis (c) strategic objectives and (d) the competitive advantage.

a. In order to define the first issue, the business environment, the competitive, the industry and macro environment are researched. In order to research the competitors, a strategic group map is used. Perceived competitors of Designedbymyself are Styleshake, DressbyDesign and Studio28Couture. In order to compare these competitors' offerings and customers' needs, a strategic canvas is created.

The strategic group map showed that there were some gaps that Designedbymyself could fill. Designedbymyself wants to outperform their competitors by offering significant more customer service and customer interaction. The strategic canvas showed three critical success factors; quality factor, identification factor and the designtool. Designedbymyself will score high on these three factors.

b. In order to define the second issue, the internal analysis, the internal organization will be researched by the value chain model.

The competitive advantage of Designedbymyself will be the possibility for customers to design and order their own designed dress based on their specific sizes. The focus is not only on the high quality end product (dress) but also on the experience during designing, by emphasizing connectivity, interaction and empowerment. Designedbymyself's value chain focuses on early customer involvement. By offering high customer service and enable customer interaction, a high added value can be created in the value chain.

c. In order to define the third issue, the strategic objectives, the strategic position of Designedbymyself regarding their competitors and customers needs to be determined. In order to assess the strategic position of Designedbymyself, the best-in-class benchmark is used. Best in practice companies are LEGO and Threadless.

Designedbymyself learned from this benchmark and will also apply the following; (1) order every design, (2) organize thematic contests, (3) use crowd sourcing and (4) offer high rewards in relation to the design contests.

d. In order to define the fourth issue, the competitive advantage, Designedbymyself has to achieve strategic capabilities

Designedbymyself must increase customer loyalty and earnings through strategic capabilities that are valuable to buyers.

Web site issues

The second issue, the web site issues, is researched by means of a case study at Styleshake. The DART building

blocks are used to analyse how to communicate and co-create value with the customer. The Web experience components are used to analyse online customer decision making.

a. In order define the first issue, co-creation of value, the DART model is used. Designedbymyself must concentrate on the interactions between the firm and the consumers that facilitate co-creation experiences. The building blocks for these interactions are Dialogue, Access, Risk reduction and Transparency.

The analysis showed that the DART building blocks were poorly applied at Styleshake. Designedbymyself wants to take away the disadvantages in relation to DART building blocks. Designedbymyself will offer active recommendations and customer service by an interactive 3D avatar. The designtool will be a semi step-by-step process, with an introduction and a guide during designing. The designing will be done in 3D, on a 3D customized avatar created by the consumer, based on their own character/sizes.

b. In order to define the second issue, web experience, research of Constantinides is used**.** He analysed the factors affecting the online consumer's behavior by means of an extensive literature review. He identified the Web Experience components and their sub-categories and described their role as inputs in the online customer's decision making process. The main building blocks of the Web Experience consist of *functionality factors*, *psychological elements* and *content elements*.

The web experience analysis showed that the website of Styleshake was not perceived user friendly (functionality factors). In addition to that there was also a lot of criticism regarding the aesthetics, style and atmosphere of the website (content factors). Designedbymyself wants to respond to that and offers the customers a convenient and user friendly designtool, by using a semi step-by-step procedure, Q&A avatar, introduction on the designtool, and the ability to customize the avatar. In relation to the style/atmosphere of the website, Designedbymyself offers the possibility to customize the avatar and customize the website background. Designedbymyself will be a hip and fashionable brand with a wide offer of styles, printed fabrics and multiple notions. Designedbymyself also wants to distinguish their website by focusing on interactivity; organizing design competitions, creating an online community and the ability to share designs within a gallery.

Organizational issue

The third issue, the organizational issue, is researched by literature. Literature states that online organizational issue relate to the (a) front office, (b) back office and (c) third parties.

a. In order to define the first issue, front office, the communication and marketing strategies of an online company need to be determined.

The virtual communication strategy of Designedbymyself is based on an N=1 approach (personalized co-created experiences of consumers). Designedbymyself will use a new marketing model, called customerization, where the customer is the co-producer and the brandname. Designedbymyself (internet) marketing strategy is based on (1) search engine marketing (2) online PR, (3) online partnerships, (4) interactive advertisement, (5) opt-in-email marketing and (6) viral and social marketing.

b. In order to define the second issue, back office, e-commerce support activities are needed to create a market oriented organization. Issues relating to e-commerce support activities are customer service, order processing and fulfillment.

Designedbymyself will focus on their web experience (interaction) within their customer service. The order will be processed once the design is ordered. The 3D design will be converted into a 2D pattern. Customers can check their order during the production and delivery phase. Order fulfillment at Designedbymyself starts at the point-of-sales, when the order is digitally converted into a distribution and logistics function.

c. In order to define the third issue, third parties, parties outside Designedbymyself's organization and its value chain needs to be researched.

Third parties of Designedbymyself are parties that are not directly tied to the primary product (dresses) that a consumer is using. Third parties for Designedbymyself are; (1) TurnTool, (2) Optitex, (3) Polyvore, (4) My Virtual Model, (5) Elle and (6) Google.

Technological issue

The fourth issue, technological issue, is researched by literature. It is necessary for building Designedbymyself that the technological issues are described. ICT is the functional backbone of e-commerce. In order to determine the technological issue there are two sections (a) discussing the general technological issues of an online company and (b) the technological issues regarding the co-creation of value through mass customization.

a. In order to define the first issue, general technologies, decisions have to be made within the following nine areas.

Designedbymyself will make use of (1) Search engine optimization by using keywords (2) web site administration, maintenance and service by using WAME (3) web server hosting an choice of internet service provider using www.mijndomein.nl (4) site construction by using WAME (focus on rendering, flash and 3D)(5) content management using the CMS of WAME (6) site security using SSL and TLS (7) transaction functionality by using a PSP (8) collection, processing and dissemination of the web site traffic and transaction data by using mijndomein's log file and (9) system backup by using a remote backup service.

b. In order to define the second issue, technologies regarding co-creation, the spline chart will be used. This chart shows the enterprise space, it determines were the centre of gravity is of Designedbymyself.

In order to co-create value Designedbymyself will (1) apply the N=1 principle by using the spline chart, (2) develop appropriate toolkits using 3D prototyping, CAD/CAM, 3D avatar, CAE (3) customized web pages, products and brand names (4) develop collaborative customer co-design in communities by computer supported cooperative work (CSCW). Furthermore, in order to fully profit from increased earnings Designedbymyself will apply (1) the R=G principle by using the spline chart, (2) principles of mass customization by using CAD/CAM, made-to-order fabrication, CNC machines and (3) economies of integration by using flow manufacturing systems, online configurators and POS analysers. The interdependencies of Designedbymyself (N=1 and R=G) and their technical demands are identified in a spline chart. This chart showed that 'quality' and 'easy of change, flexibility' are the most important issues.

IV Index

Chapter 1 Introduction

'In order to be irreplaceable one must always be different' - Coco Chanel

The reason for writing this thesis is a business idea of Krystel Singh and Marlous Vennegoor op Nijhuis. The researchers aim to set up a company that offers her clients to design and order their clothes through a website. The name of the company is Designedbymyself. In this company e-commerce, co-creation, and mass customization strategies are essential. To realize this idea the researchers will investigate the online apparel market and other factors that are related to the business idea.

In this chapter the research will be introduced. The research gap that stems from the existing literature is identified. To address this research gap, research issues in the form of sub questions are formulated. Subsequently, the path that will be travelled towards the conclusions of this thesis is outlined.

1.1 Background to the research

The goal of this research is to design an online business for customized women fashion. Therefore, this research aims to develop a strategic marketing plan for this newly set up online business for customized women fashion. So, the theoretical background consists of literature regarding electronic commerce, co-creation, and mass customization. In relation to the context of this research it shows that there are theoretical research gaps that need to be filled.

1.1.1 E-commerce

With the advent of the Internet, the conventional marketplace has changed to a virtual marketspace (Rayport & Sviokla, 1994). Traditional concepts like the 4P Marketing Model became obsolete. Many authors came up with adapted versions of the 4P Marketing Model. However, many of these frameworks do not address the criticisms regarding lack of strategic emphasis. A new concept that can be applied to create a successful online presence – the 4S Web Marketing Mix Model – was introduced by Constantinides (2002). However, this model is a general framework and should therefore be adapted to the context of a newly set up online company that co-creates value through mass customization.

1.1.2 Co-creation

In addition to a successful online presence, businesses must be aware of the fact that in the past decade, the role of the customer has changed dramatically (Prahalad & Ramaswamy, 2004). To gain a competitive advantage, companies must escape the firm-centric view of the past and seek to co-create value with customers.

1.1.3 Mass customization

One way for a firm to co-create value with customers is through mass customization. Mass customization corresponds to '*the technologies and systems to deliver goods and services that meet individual customers' needs with near mass production effiency*' (Piller, 2004, p. 314). Within the apparel industry mass customization is '*a technology-assisted process that allows the consumer to modify a company's product line to meet individualized design tastes or fit requirements*' (Lee et al. 2002, p. 139).

1.1.4 Research gap

It became clear that to design an online business that customizes women apparel, traditional concepts are not suitable as a theoretical framework. The 4S Model offers a new framework that is applicable to this context.

However, the 4S Model is rather general whereas the implementation of co-creation and mass customization has many consequences regarding the strategic, operational, organizational and technological issues of the online business.

Until now, there is no research conducted concerning the integration of co-creation into the strategic and marketing plan of apparel e-companies. This study tries to initiate this, by applying the 4S Marketing Mix Model to a newly set up apparel company and highlighting the importance and consequences of the customer-centric view. Conclusively, this research tries to fill the gap that is found in the literature indicated with the **X** in figure 1.1.

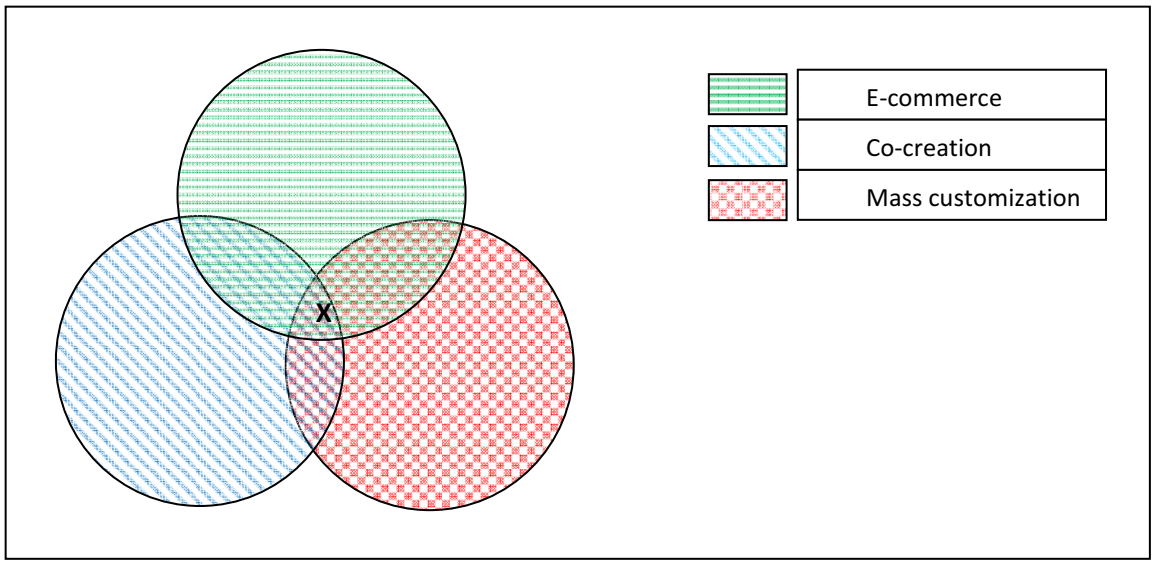


Figure 1.1: The focus area of this research

1.2 Research objective, research question and contributions

As already stated in the introduction, the reason for conducting this research is the business idea of the newly setup company Designedbymyself. By writing this thesis, the researchers make a start in realizing the business idea. The objective in this research is:

Designing a strategic and marketing plan for an online business for customized women apparel.

Based on this research objective, the following problem statement is formulated:

Developing a strategic and marketing plan for a newly set-up online business for customized women apparel.

To address the problem statement and reach the objective of this research, six research questions were formulated:

1. ***How can online companies create a successful online presence?***
2. ***What are the strategic dimensions and parameters affecting the online business?***
3. ***What are the web site issues affecting the online business?***
4. ***How to create an integrated online organization?***
5. ***What are the technologies required for building the online business?***
6. ***How will the strategic and marketing plan of Designedbymyself look like?***

1.3 Justification for the research

Outcomes of this study are relevant in several respects:

Scientific relevance: As indicated, there is a theory gap: Researchers recognize the need for new concepts fitting the new conditions. The 4S Web Marketing Mix Model emphasizes on the strategic operational, organizational, and technological elements within e-commerce companies. However, the 4S Web Marketing Mix Model is rather general. Since the researchers aim to apply the 4S Model to a newly set up online apparel company, the model has to be adapted to this situation.

Practical relevance: Secondly, this research could be very useful in practice both for already existing companies and especially companies in the fashion industry that want to implement e-commerce and co-creation strategies into their businesses Moreover, the outcomes of this research is of relevance for start-up companies that would like to start new ventures aiming to integrate e-commerce and co-creation.

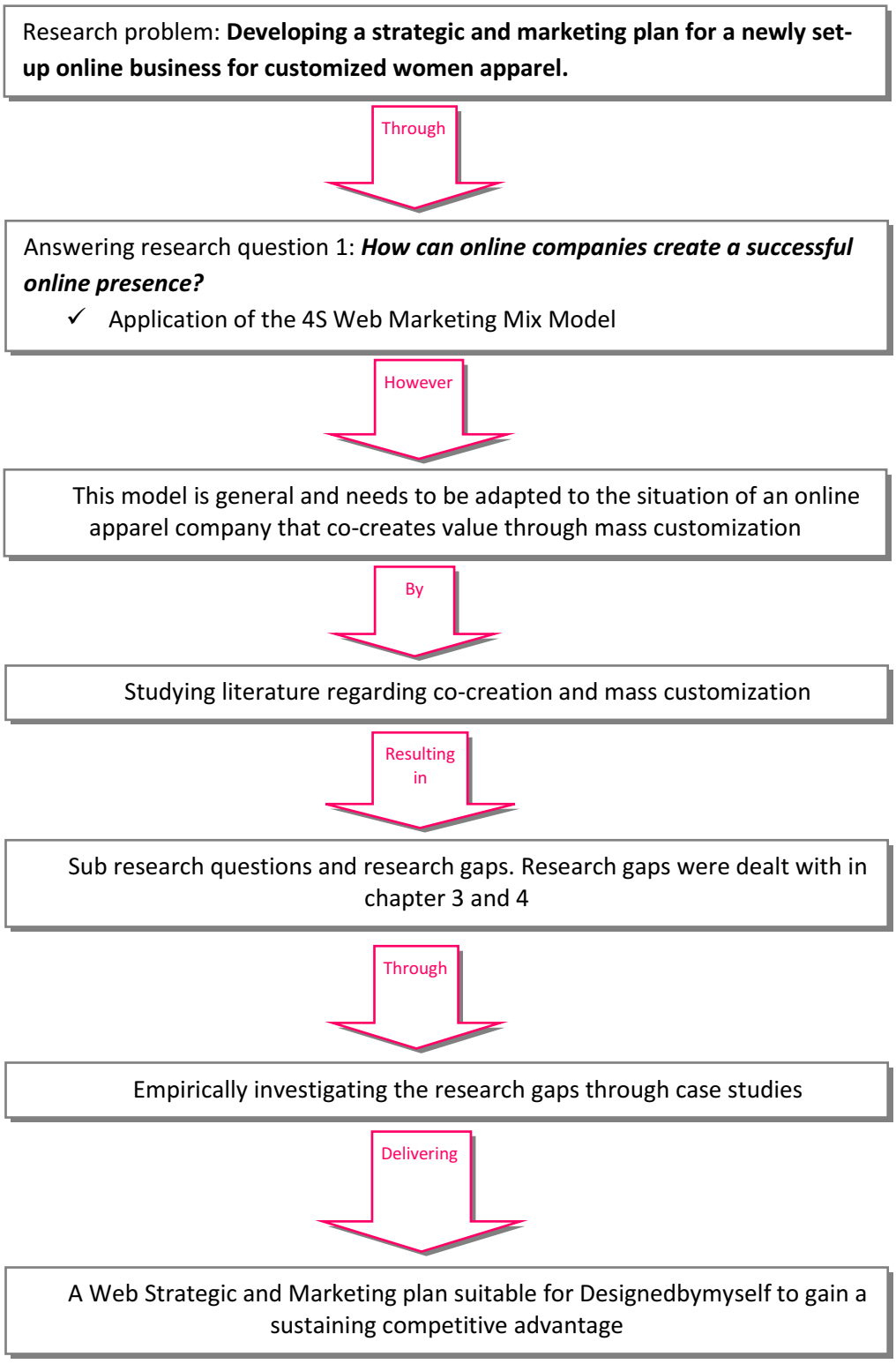
1.4 Methodology

In this study, the strategic, operational, organizational, and technological issues of designing an online business for customized women clothing will be studied and addressed.

In the methodological chapter relevant data regarding these four issues will be collected through qualitative research. These data will be analyzed to collect information regarding the strategic,

operational, organizational, and technological issues aiming to design a successful online business for customized women apparel.

1.5 Outline of the report



1.6 Definitions

Definitions adopted by researchers are often not uniform, so key and controversial terms are defined in this section to establish the positions taken in this research.

Fashion:

'The term fashion describes the current prevailing trends in a society. Fashion in the narrow sense of the word means the changing forms of clothing. These originate from people's need to be adorned and admired but also allow the opportunity to enhance personal style or indicate a position in society or membership of a particular group' (Eberle et al., 2002, p. 5).

E-commerce:

'*An interdisciplinary collection of Web-based technologies, tools and business processes improving, supporting, supplementing or replacing traditional commercial (and non-commercial) practices'* (Constantinides, 2005, p. 33).

Co-creation:

'Where product development is collaboratively executed by developers and stakeholders together' (Piller et al., 2004, p. 4).

Mass customization:

'Customer co-design process of products and services, which meet the needs of each individual customer with regard to certain product features' (Piller et al., 2004, p. 314).

1.7 Delimitations of scope and key assumptions

The research problem **Developing a strategic and marketing plan for a newly set-up online business for customized women apparel** described in 1.2 explicates delimitations of this thesis. Delimitations are that conclusions can only be made regarding the online companies that co-create value through mass customization of women fashion. Furthermore, conclusions can be drawn only for newly set up online companies, not for existing companies that want to create an online presence.
Therefore, no claims for the conclusions beyond these delimitations will be made in this thesis.

1.8 Conclusion

This final section summarizes the key achievements of the first chapter.

This chapter laid the foundations for the report. It described the background of the research and the relevant theories regarding e-commerce, co-creation and mass customization. It introduced the research problem and research issues. Then the research was justified, definitions were presented, the methodology was briefly described, the report was outlined, and the delimitations were given. On these foundations, the report can proceed with the literature review in chapter 2. The literature review will address sub research question one by searching a suitable framework to answer the question ***How can companies create a successful online presence?***

Chapter 2 Literature review

'Study the past if you would define the future.' – Confucius

In this chapter, there will be elaborated on the research gap that arises from the existing body of knowledge developed during previous research. The aim is to build a theoretical foundation upon which the research is based by reviewing the relevant literature to identify research issues.

In paragraph 2.1 parent theories will be discussed. A parent theory stems from relevant literature necessary to reach the research objective (Perry, 1998). The parent theories in this research are based on literature regarding e-commerce, co-creation, and mass customization (see figure 2.1). This section will address the first sub research question ***How can companies create a successful online presence?*** by proposing and justifying the 4S Web Marketing Mix Model as a framework to design an online business.

In paragraph 2.2 immediate theories that is, the research problem theory, will be discussed. The immediate theories are indicated in figure 2.1 with the **X**. These immediate theories are based on and structured according to the 4S Web Marketing Mix Model. Thus, there will be elaborated on strategic, operational, organizational, and technological issues in the context of an online business for customized women fashion aiming to build a framework to answer the sub research questions 2 – 5.

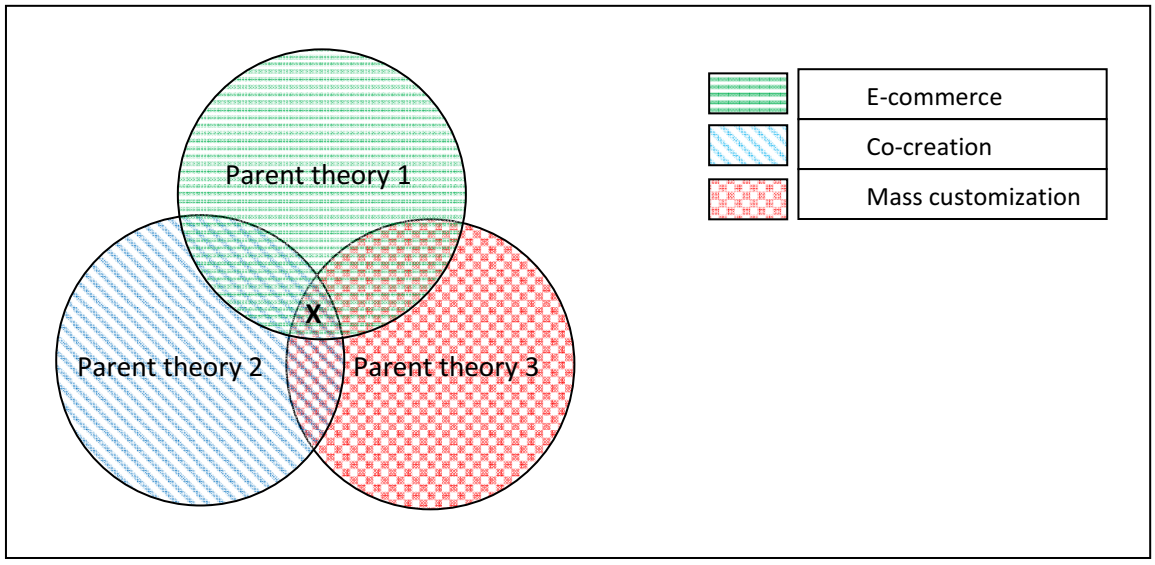


Figure 2.1: Parent theories and immediate theory

2.1 Parent theories

Parent theories stem from relevant literature that is necessary to reach the research objective. Since the research objective is **Designing a strategic and marketing plan for an online business for customized women apparel,** parent theories stem from literature regarding designing an online business (e-commerce) and customization (co-creation and mass customization). This is visualized in figure 2.1 through the circles that are representing e-commerce, co-creation and mass customization.

2.1.1 Parent theory 1: E-commerce

In this report, electronic commerce or e-commerce is defined as: **'***An interdisciplinary collection of Web-based technologies, tools and business processes improving, supporting, supplementing or replacing traditional commercial (and non-commercial) practices'* (Constantinides, 2005, p. 33).

During the 90's electronic commerce was frequently associated with growth, progress, innovation and success (Mahadevan, 2000). However, the survival potential of virtual businesses was overestimated. This led to a burst of the dot.com bubble, resulting in investors who saw their money vanished into thin air. This Internet meltdown culminated in the first global economic recession in this century (Constantinides, 2002).

In consequence, many studies were conducted emphasizing on problems of online businesses. This research has provided new insights and more clarity of the e-commerce marketplace. A much recognized problem in electronic commerce was that many textbooks adapted conventional concepts to the new conditions. An example of this is that textbooks and researches have the tendency to stick to the Marketing Mix 4P's Model (McCarthy, 1964) which is in fact a poor choice in the case of electronic marketing (Gronroos, 1997; Constantinides, 2002). Several authors identify the limitations of the 4P Marketing Mix in online environments. Oliver (2000) emphasizes the lack of strategic dimension of the 4P Model. Godin (2001) recognizes a weakness of the 4P framework in the fact that it focuses on standardized products rather than on customized offers targeting individual customers. Gronroos (1997) accentuates the lack of the 4P Marketing Mix to explicitly include any interactive elements.

Constantinides (2002) recognizes two main additional points that indicate the limitations of the 4P Model in electronic commerce:

- In the virtual marketspace, the four P-elements are interrelated and jointly experienced by the online customer, being merely parts of the company's website. The four P's cannot be approached in isolation because customers experience them simultaneously and directly as elements of the website based customer experience (Constantinides, 2002, p. 42). This web

experience consists of many more factors like findability of the website, ease of navigation, quick replies to emails, and convenient shopping procedures.

- Since the 4P framework was not developed as a strategic tool, applying it as the only platform for e-commerce operations could mean that the strategic aspects would remain underemphasized or ignored altogether (Constantinides, 2002). Following the conventional strategic management procedure is unattractive because of the fast-changing nature of the Internet (Oliver, 2000; Constantinides, 2002).

Therefore, several authors propose frameworks that fit the virtual marketspace.

First, Mohammed, Fisher, Jaworski, and Cahill (2002) describe an Internet marketing mix that consists of the 4Ps of the traditional marketing mix, plus two new elements namely, community and branding. They propose that branding moderates the other marketing elements and visually depicted branding as a cloud around the other marketing elements. However, this model is not appropriate since it is just a Web-based version of the 4P Marketing Mix Model. Therefore, it is not able to address the lack of strategic dimension and the web experience.

Second, Kalyanam and McIntyre (2002) propose the E-Marketing Mix = 4Ps + $P^2C^2S^3$. The 4Ps are the traditional Product, Price, Promotion, and Place. P^2 represents personalization and privacy, C^2 consists of customer service and community, and finally S^3 represents site, security and sales promotion. Although this E-Marketing Mix addresses the individual customer targeting and the interactivity, the strategic aspects remain ignored.

In 2002, Constantinides introduced the 4S Web Marketing Mix Model. This model addresses strategic, operational, organization, and technological issues in four S-elements Scope, Site, Synergy and System. The four S-elements of the Web-Marketing Mix framework present a sound and functional conceptual basis for designing, developing and commercializing Business-to-Consumer online projects. Therefore, the 4S Web Marketing Mix Model will be used in this study as a framework to outline the strategic marketing plan of the online company, Designedbymyself. So, the answer on the first research question ***How can online companies create a successful online presence?*** is found in the 4S Web Marketing Mix Model.

The 4S Web Marketing Mix Model

Constantinides (2002) addresses aforementioned problems by proposing a new approach to deal with elemental management problems in the virtual marketspace. In the 4S Web Marketing Mix Model strategic, operational, organizational, and technological elements are integrated. With the 4S Web Marketing Mix Model, a concept that can be applied as an initial step in designing and building a corporate online presence is offered.

The 4S Web Marketing Mix Model is a comprehensive methodology that describes the necessary steps for conceptualizing, designing and building a successful online presence and is therefore suitable to help accomplish the goal of this research. The model identifies four critical managerial ingredients of e-marketing, Scope, Site, Synergy, and System (see figure 2.2).

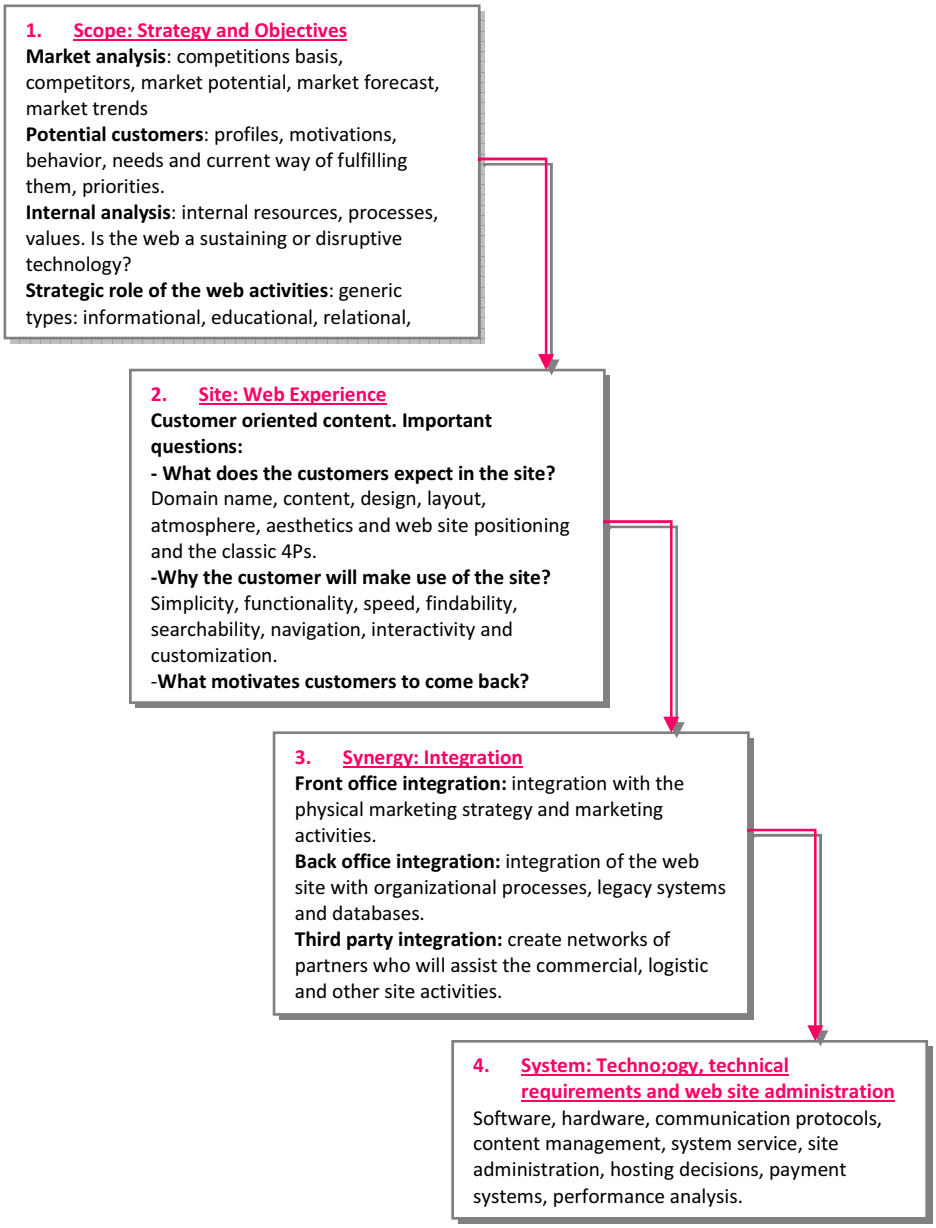


Figure 2.2: The 4S Web Marketing Mix Model (Constantinides, 2002, p. 62)

Strategic issues (Scope)

In the 4S model, the scope element is of primarily strategic character and outlines the decisions to be made on four areas, (1) business environment, (2) internal analysis, (3) strategic objectives, (4) sustainable competitive advantage.

1. The business environment focuses on the competitive environment. The market analysis aims to yield a clear picture with regard to the potential competitors and customers of the site;
2. The internal analysis focuses on the firm's resources, processes and values to identify the degree of readiness of the organization for e-commerce and to assess the organizational value chain;
3. The strategic and operational objectives of the online venture; to generate additional value and assist the organization in attaining the objectives the online activities must pursue their own strategic objectives. Online strategic objectives can be: enhancing profitability, expanding the customer base, increasing the customer retention or reducing operational costs (Constantinides, 2002).
4. The sustainable competitive advantage, resulting from the strategic role of e-commerce for the organization which describes the tasks assigned to the online activity and will be reflected on the firm's online model (Constantinides, 2002).

Operational issues (Site)

The website is the functional platform of communication, interaction and transaction with the online customer. The prime mission of the website is to attract traffic, establish contact with the online target markets and brand the online organization. The website can also fulfil commercial and non-commercial objectives like communicating and promoting products, providing company information, providing customer service, providing customer data, allowing communication and interaction between the customers and the company, and allowing direct sales through online payments (Constantinides, 2002).

Organizational issues (Synergy)

Constantinides (2002) defines the term synergy as '*the integrating processes necessary for realizing the virtual organization's objectives.*' This definition implies that the synergy element is appropriate for organizations with both physical and virtual presence (click-and-mortars).

The synergy factor embraces a wide range of issues divided into three categories:

1. The front office, which refers to conventional corporate communication and distribution strategies.
2. The back office, referring to making existing organizational infrastructures available to the online operation (creating new ones) (Constantinides, 2002). The back office synergy includes three issues: (a) the organizational integration of e-commerce physical support into existing organizational processes; (b) the legacy integration; (c) integration of the online operation into the company's value system (Constantinides, 2002).
3. Third parties. Success in the virtual marketplace often requires cooperation with third parties outside the organization and its value system (Constantinides, 2002). Potential candidates for such online synergies are search engines and web directories, and affiliate networks.

Technological issues (System)

The fourth factor – system – identifies the technological issues as well as the site servicing issues to be addressed by the e-commerce management (Constantinides, 2002; Wang et al., 2005). There are several areas were decisions should be made: (1) search engine optimization, (2) web site administration, maintenance and service (3) web server hosting an choice of internet service provider (4) site construction (5) content management (6) site security (7) transaction functionality (8) collection, processing and dissemination of the web site traffic and transaction data and (9) system backup (Constantinides, 2002).

Limitations of the 4S Web Marketing Mix Model

Summarizing, there can be stated that the 4S Web Marketing Mix Model is a useful model to draft the Web Marketing and Strategic plan of a newly set up online apparel company. However, the model has some drawbacks in the context of this research.

First, the model is rather general and should be adapted to the situation of an apparel company that uses co-creation and mass customization strategies. Therefore, there will be looked into literature concerning co-creation (paragraph 2.1.3) and mass customization (paragraph 2.1.4).

Second, the model emphasizes at some points, like the synergy element, on the integration of already existing physical elements with the virtual ones. In the case of Designedbymyself, the company is new and exclusively virtual that is, a pure-play company. Hence, there is no integration of existing physical strategies with novel virtual strategies. Therefore, the elaboration of the organizational issues in this thesis emphasizes on the creation of the front office (communication and marketing), the back office (creating a market-oriented organization) and third parties.

Conclusion

After the rise and subsequent meltdown of Internet and e-commerce, there was recognized that conventional concepts like the 4P Model were applied to the new conditions of the virtual marketspace. However, the 4P Model does not suit electronic marketing. In reaction to this, Constantinides (2002) proposed the 4S Marketing Mix Model.

The 4S Model addresses strategic issues, operational and website issues, organizational issues, and technological issues (see table 2.1). These issues need to be addressed in order to create a successful online presence. Hence, research question 1. ***How can online companies create a successful online presence?*** is answered.

The 4S Model will be used as a theoretical framework to reach the research objective **Designing a strategic and marketing plan for an online business for customized women apparel**. Therefore, the research questions 2 -5 are structured like the 4S Marketing Mix Model:

S-element	*Issues*	*Research question*
Scope	Strategic issues	***2.What are the strategic dimensions and parameters affecting the online business?***
Site	Website issues	***3.What are the website issues affecting the online business?***
Synergy	Organizational issues	***4.How to create an integrated online organization?***
System	Technological issues	***5.What are the technologies required for building the online business?***

Table 2.1: 4S elements with their descriptions

However, there are some limitations of the 4S Model in the case of Designedbymyself. First the model is rather general (especially the site and system issues).

Second, the synergy element emphasizes on the integration of existing elements with new ones. In the case of Designedbymyself there is not such an integration. Therefore, there will be elaborated on the creation of the front office, back office and third parties.

To formulate appropriate sub research questions suiting the company Designedbymyself, there will be looked into literature concerning co-creation and mass customization in the next two paragraphs.

2.1.2 Parent theory 2: Co-creation

With the advent of the Internet, the face of business and organization changed. The traditional physical marketplace has transformed into a virtual marketspace (Rayport and Sviokla, 1994). In this marketspace, the interaction between customer and company has changed (Rayport and Sviokla, 1994). In the traditional marketplace conception, the firm and the consumers had distinct roles of production and consumption. The market had no role in value creation; its role was to value exchange and extraction. The traditional concept of a market is company-centric (Prahalad and Ramaswamy, 2004).

Nowadays, consumers can choose the firms they want to have a relationship with based on their own views; they are subjecting the industry's value creation process to scrutiny, analysis, and evaluation. Consumers have access to unprecedented amounts of information on firms, products, technologies, performances, prices and consumer actions and reactions. Customers also have the possibility to engage in (online) thematic consumer communities. Furthermore, consumers act on the information they have gathered. According to Prahalad and Ramaswamy (2004), the role of the consumer is changing from isolated to connected, from unaware to informed, from passive to active. This process confronts firms with the following paradox; *consumers have more choices that yield less satisfaction and top management has more strategic options that yield less value* (Prahalad & Ramaswamy, 2004)**.** To overcome aforementioned problems, companies must escape the firm-centric view of the past and seek to co-create value with customers through a clear focus on personalized interactions between the consumers and the company. This will lead to new sources of competitive advantage (Prahalad & Ramaswamy, 2004).

The founders of the theoretical concept of co-creation are Prahalad and Ramaswamy. In their book entitled *'The Future of Competition – Co-creating Unique Value With Customers'* and in several articles they argue that co-creation is a new approach to value creation in which the basis for value shifts from product to experiences (Prahalad & Ramaswamy, 2004, p. 15; Prahalad & Ramaswamy, 2002, p. 3).

Besides Prahalad and Ramaswamy, there are other authors that also elaborate on the concept of co-creation. Bughin et al. (2008), for example, present co-creation as *the next wave in innovation*, arguing that there is proof that applying co-creation processes succeed in practice, especially for online companies.

Still other authors like Sheth et al. (2000) describe co-creation as a part of the concept of customer-centric marketing. According to these authors, firms that apply customer-centric marketing are more likely to encompass co-creation processes than firms that sustain in the company-centric marketing view.

Conclusively, there can be stated that co-creation can be seen from different perspectives. The concept of co-creation can be seen as:

1. A new approach to value creation
2. An innovation concept
3. A (customer-centric) marketing concept

As described above, co-creation is a broad and complex concept, therefore table 2.2 gives a clear overview and distinction of what co-creation is and what it is not.

What co-creation is not	What co-creation is
Customer focus (customer is king/always right)	Co-creation about joint creation of value by the company and the customers. It is not the firm trying to please the customer
Delivering good customer service or pampering the customer with lavish customer service	Allowing the customer to co-construct the service **experience** to suit her context
Mass customization of offerings that suit the industry's supply chain	Joint problem definition and problem solving
Transfer of activities from the firm to the customer as in self-service Customer as product managers or co-designing products and services	Creating an **experience** environment in which consumers can have active dialogue and co-construct personalized **experiences**; product may be the same but customers can construct different **experiences**
Product variety	**Experience** variety
Demand side innovation for new products and services	Innovating **experience** environments for new co-creation **experiences**
Careful market research	**Experience** the business as consumers do in real time Continuous dialogue
Staging experiences	Co-constructing personalized **experiences**

Table 2.2: The concept of co-creation (Prahalad and Ramaswamy, 2004, p. 8)

The two principles of co-creation: N=1 and R=G

According to Prahalad and Krishnan (2008) there are two principles in value co-creation: N=1 and R=G. In order to co-create value with the stakeholders, *'the resources of many have to satisfy the needs of one'* (Prahalad and Krishnan, 2008, p. 18).

The individual is at the heart of the experience, thus co-created value must focus on the individual customer. The N=1 principle is about understanding the behavior, needs, and skills of individual customers and co-creating with them a value proposition that is unique to them (Prahalad and Krishnan, 2008). However, N=1 requires a new approach to resources. This leads to the second principle of co-creation, R=G since no single firm can provide the range of skills to achieve N=1 by itself. Therefore, the focus should be on access to and influence on resources, not ownership of and control over them. According to Prahalad and Krishnan (2008, p. 33*) 'It is all about leveraging a global resource base'.*

Advantages and disadvantages of co-creation

In the literature, different advantages are being mentioned for firms to apply co-creation processes. Simultaneously, authors mention several disadvantages for applying co-creation in practice. In table 2.3, these proposing and opposing factors for applying co-creation in practice are presented.

Advantages of co-creation	Disadvantages of co-creation
The co-creation of value is a desirable goals as it can assist firms in highlighting the customer's point of view and in improving the front-end process of identifying customers' needs and wants (Lusch and Vargo, 2006)	Success for the value creation process relies heavily on customers' efforts and involvement (Sheth et al., 2000).
Co-creation marketing can enhance customer loyalty and reduce the cost of doing business (Sheth et al., 2000)	The extent of co-creation marketing depends on how much customer knowledge a company is able to accumulate and use (Sheth et al., 2000)
Value co-creation effectively leads to greater interdependence among the main actors (consumers and producers), which in turn builds trust and sustains relationships (Sheth et al., 2000)	Long time horizon, high acquisition costs (Johnson and Selnes, 2004)
The emphasis of co-creation with customers may not only positively impact service capability, but also directly impact customerization capability, which significantly differs from the traditional capabilities. This means the focus on the co-creation with customers may gain new competence, thus obtaining more competitive advantages (Zhang and Chen, 2008)	Value co-creation requires an ability to engage the 'extended enterprise' by managing across and within customers and supplier value creation process (Payne et al., 2008)
The main assumption in distributed co-creation is that the quality of what the crowd created will be superior to what an individual can do ('given enough eyeballs all bugs are shallow')(Burghin et al., 2007)	

Table 2.3: Advantages and disadvantages of co-creation

Solving (potential) disadvantages of co-creation

A firm can build a system for co-creation value by looking at the interactions between the firm and the consumers that facilitate co-creation experiences. The building blocks for these interactions consist of Dialogue, Access, Risk reduction and Transparency which together form the acronym DART (Prahalad and Ramaswamy, 1994).

An appropriate configuration of the building blocks of the DART Model ensures high quality co-creation experiences, since combining the building blocks enables companies to better engage customers as collaborators (Prahalad and Ramaswamy, 2004).

Table 2.4 provides an elaborate overview of the building blocks of the DART Model. The table lists a description of every building block, its features and its possible outcome when applied in the right manner.

	Description	Guidelines	Outcome
Dialogue	Dialogue encourages not just new knowledge sharing but, even more important, qualitatively new levels of understanding between companies and consumers. It also allows consumers to interject their views of value into the value creation process	-Dialogue focuses on issues that interest both the consumer and the firms -Dialogue requires a forum in which dialogue can occur -Dialogue requires rule of engagement that make for an orderly, productive interaction	Dialogue creates and maintains a local community
Access	Access challenges the notion that consumers can experience value only through ownership	-Access begins with information and tools -Access can also involve on-demand resources such as computing	-Access can create new opportunities in emerging markets -Access can transform the capacity for self-expression -By focussing access to experience at multiple points of interaction, companies can broaden their business opportunities
Risk assessment	Risk assessment assumes that if consumers become co-creators of value with companies, then they will demand more information about potential risks of goods and services; but they may also bear more responsibility for dealing with those risks	-Business should inform consumers fully about risks, providing not just data but appropriate methodologies for assessing personal and societal risks -The focus on risk assessment should not lead to a defensive mentality within the firm	Risk management offers new opportunities for firms to differentiate themselves
Transparency	Transparency of information is necessary to create trust between companies and customers	Firms need to ensure transparency in a way that the information asymmetry between the firm and its customers disappears	Transparency facilitates collaborative dialogue with customers

Table 2.4: The building blocks of co-creation (Prahalad and Ramaswamy, 2004)

It is important for companies to be aware of the fact that the DART building blocks cannot be applied separately. Moreover, by combining the building blocks in different ways, companies can create new and important capabilities. Therefore, Prahalad and Ramaswamy (1994) suggest that firms at least combine certain building blocks to accomplish desired results (see table 2.5).

Combination	Outcomes
Access & Transparency	Enhancing the customers' ability to make informed choices
Dialogue & Risk assessment	Enhancing the ability to debate and co-develop choices
Access & Dialogue	Enhancing the ability to develop and maintain thematic communities
Transparency & Risk assessment	Enhancing the ability to co-develop trust

Table 2.5: Combinations of elements of the DART Model (Prahalad and Ramaswamy, 2004, p. 19-32)

Conclusion

In addition to the changed concepts in the virtual marketspace, the interaction between customer and company has also changed. To reach a competitive advantage, companies must escape the firm-centric view of the past and seek to co-create value with customers through a clear focus on personalized interactions between the consumers and the company. The concept of co-creation is experience based and can be seen as a new approach to value creation, an innovation concept, and a (customer-centric) marketing concept. There are two principles in value co-creation: N=1 and R=G. The main advantage of co-creation is the accomplishment of a competitive advantage through (1) identifying and reacting on customers' needs, (2) enhancing customer loyalty, (3) cost reduction, (4) the building of trust and relationships among producers and customers.

To maximize the advantages of co-creation and counterbalance the potential disadvantages, a firm has to build a system for co-creation of value by looking at the interactions between the firm and the consumers that facilitate co-creation experiences. The building blocks for these interactions consist of Dialogue, Access, Risk reduction and Transparency which together form the acronym DART.

2.1.3 Parent theory 3: Mass customization

One way to co-create value with customers is through mass customization. Mass customization corresponds to '*the technologies and systems to deliver goods and services that meet individual customers' needs with near mass production effiency*' (Piller, 2004, p. 314). Mass customization is the combination of mass production and custom manufacturing; it bridges the gap between individual customers' high expectations and cost pressures faced by manufacturers' enabling direct interactions with customers, an ideal basis for customer relationship management.

Mass customization goes around the concept "build-to-order". Build-to-order is the solution for mass customization when the company does not know demands until having orders in hand. As a result, production just happens after that. In the past, with the concept "build-to-forecast" or "build-to-stock", production was based on demand forecast. The drawback of demand forecast is the forecasted information is not exact since it relies on past numbers and many assumptions. Thus, the outputs of production cannot match the highly different demands of mass customization. The gap between production on forecasted information and real demands burdens large costs such as high inventory cost (components and finished products), material and other resource waste, cash flow decline on operating results. In the mass customization approach, products are just built after the company has the orders in hand with the exact quantity and quality required. In addition, the slight variations in many products requires additional sophistication relative to a more educated and demanding current consumer (Pollard et al., 2008). Thus, customized solutions mean that assortment, distribution and efficient stock keeping are no longer the driving forces of competitive advantage. Now, the interaction skills and matching the needs of a customer with the customization possibilities during the process of co-design are the source of competitive advantage. In many business-to-business markets mass customization is relatively common-place, but it has just started in a lot of consumer markets (Berger et al. 2005). One of those markets is fashion*;* according to Lee and Chen (2000) in today's apparel market, consumers desire to personalize the fit, style and colour of the clothes they buy. The definition of Lee et al. (2002) is used in relation to apparel mass customization: '*a technology-assisted process that allows the consumer to modify a company's product line to meet individualized design tastes or fit requirements'* (p. 139). The desire to personalize together with the high competition, miscalculated forecasts and high fashion risk, are the driving forces of the adoption of mass customization in the apparel industry.

In this thesis there will be elaborated on mass customization since it suits the situation of the online apparel company Designedbymyself best. The researchers want to enable all customers to design their own dresses, so the customers can order their own designed dresses.

Advantages and disadvantages mass customization

Advantages and (potential) disadvantages of mass customization can be seen from two perspectives: (1) the firm's and (2) the customer's point of view.

According to Piller et al. (2004) the main advantage of mass customization is customer integration. This is connected to the possibility of charging premium prices because of the added value of a customized solution meeting the specific needs of a customer, so there is a higher willingness to pay. By integrating the customer into the value-creating process, they can also be the source of cost saving potentials (economies of integration). These are based on three different sources: (1) postponing some activities until an order is placed, (2) on more precise information about market demands, so called 'sticky information' and (3) on the ability to increase loyalty by directly interacting with each customer (Piller et al, 2004, p. 438-439).

Enabling mass customization within fashion companies has a couple of advantages. Made-to-order manufacturing minimizes the risk of fashion forecasting, eliminates distribution stocks, and decreases the fashion risk. There is also an increase in flexibility and scalability, because customers are integrated early into product definition and it can increase the flexibility of a company to react fast to changing market trends. In this way firms can also substitute traditional fashion cycles by a continuous flow of new products and models (Berger and Piller, 2003).

The returns of mass customization for the customers are; (1) the value of the customized product; that the product better fits their needs than a standardized product (2) and the rewards from the design process such as experience or satisfaction.

However, there are also some disadvantages related to mass customization. Mass customization can lead to a complex, risky, and uncertain buying situation that could discourage customers for participating in this process (Piller et al., 2005). Pine (1998) introduced the term *mass confusion*, which describes these burdens for the consumer as the result of the mass customization process. Moreover, additional costs related to co-creation, occurring both in sales and customer interaction as well as in manufacturing. Also the distribution costs are higher due to smaller lot sizes in delivery. Because of the high pressures in many industries, even high levels of differentiation rarely justify much higher prices. Customer decision to buy a customized product is related to the costs and returns for the customer. When the perceived returns are higher in relation to the cost, the customer is likely to employ mass customization (Piller et al., 2005).

The costs of mass customization for consumers are; (1) the price the customer has to pay for the individualized product in comparison to the standardized product and (2) the disadvantages of the customers' active participation in value creation (Piller et al., 2005). There are three problems with

regard to the source of customers mass confusion; (1) burden of choice; users might be overwhelmed by the number of options (2) lack of knowledge and skills to match needs with product specifications (3) information gap regarding the behaviour of the manufacturer; there is uncertainty in relation to the potential behaviour of the provider. These problems can be seen as additional costs for customers looking for a customized product (Piller et al., 2005).

The advantages and disadvantages of mass customization are listed in table 2.6.

Point of view	Advantages	Disadvantages
Firm	**Increase net earnings** -Low costs -Premium prices (customers' higher willingness to pay) -Increased market information -Increased flexibility	**Additional costs** -Sales -Customer interaction -Manufacturing -Distribution
Customers	**Increase satisfaction** -Individual relationship (N=1) -Increased loyalty -High willingness to pay	**Mass confusion** -Burden of choice -Lack of knowledge/skills - Information gap

Table 2.6: Advantages and disadvantages of mass customization (Piller et al., 2004)

Solutions to (potential) disadvantages of mass customization

According to Piller et al. (2005) there are solutions to overcome the main (potential) disadvantages of mass customization, (1) the additional costs for the firm and (2) the mass confusion of customers (see figure 2.3). This figure 2.3 shows how the additional costs are related to principles of mass customization and economies of customer integration and the total costs of a customizable offer.

Solutions to high additional costs for the firm

Solutions regarding the high additional costs for the firm lie in (a) the right application of the principles of mass customization and (b) what Piller (2004) coins as *'Economies of Customer Integration'* which represent the efficiency when a firm gains deeper knowledge about its environment and establishes value processes that eliminate waste.

(a) By applying the principles of mass customization it is possible to counterbalance the additional costs that come together with mass customization.

The first principle is *modular product families*, which means that products are designed under modules or processes which enable any types of customization. Such a system enables companies to streamline ordering, engineering and manufacturing (Pollard et al., 2008).

The second principle, *flexible fabrication systems*, is required to generate a high variety of different products that is needed within mass customization. The production capacity needs to be adaptable in order to produce a high difference of products without lead time, cost changing the system, and regardless of small volume ordered products (Pollard et al., 2008).

Third, in order to provide a dynamic flow of products, *stable* but still flexible and responsive *processes* are needed. Stable processes are the major differentiation of mass customization and traditional customization; a conventional customizer reinvents not only it products for every single customer but also his processes (Piller et al., 2004).

Finally, integrated *IT systems* are crucial in mass customization. These systems are needed to manage minute-to-minute and multiple-to-multiple decision making. A decision support system that integrates information from all participants in the entire organization and that enables the mass customizer to interact and integrate the customers into their processes (Piller et al., 2004; Pollard et al., 2008).

(b) Economies of integration can generate increasing returns and consist of three sources: First, cost-savings arise from the *postponement of activities* until an order is placed. Consequently, a firm prevents costs of misplacement of activities due to imprecise planning (Piller et al., 2004). Second, economies of integration is based on *more precise information regarding market* demands. Firms get access to sticky information (Von Hippel, 1994) which will lead to more precise market knowledge and increased efficiency of market research and product development (Piller et al., 2004, Von Hippel, 1994).

The third source to reduce costs is to *increase loyalty by directly interacting* with each customer. Therefore, costs for marketing and customer acquisition can decrease (Piller et al., 2004).

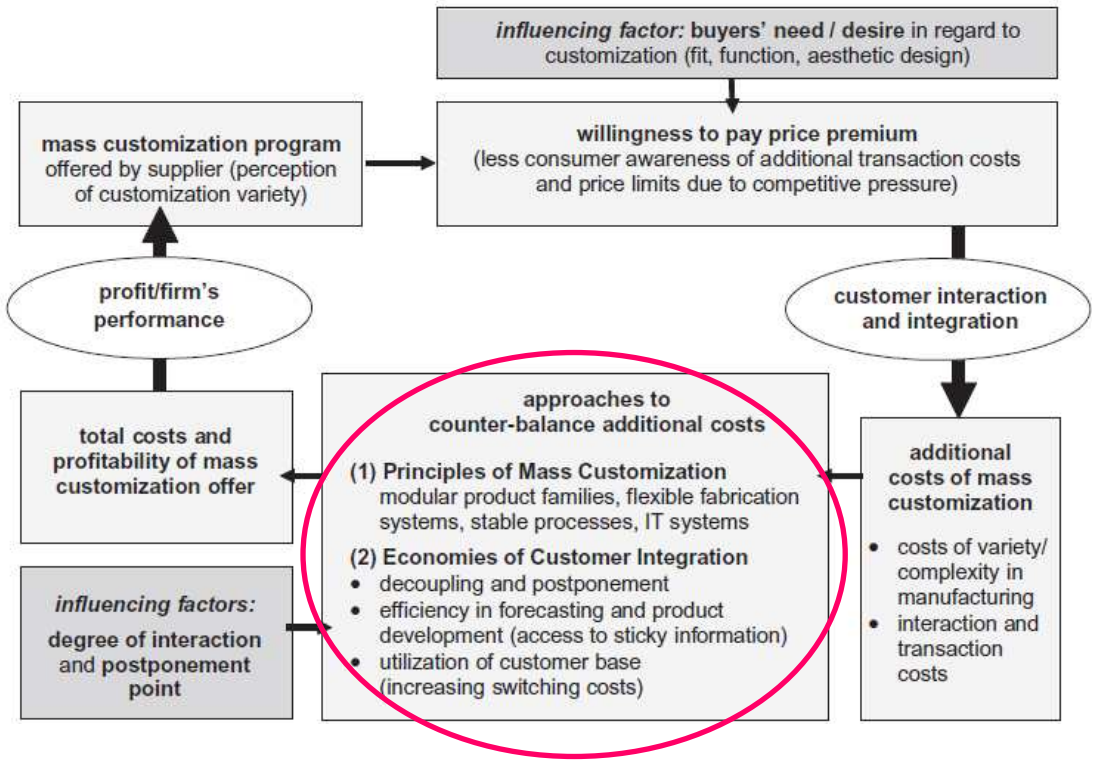


Figure 2.3; mass customization model (Piller, 2004)

Solutions to mass confusion of customers

Solutions regarding potential mass confusion can be found within three areas: (a) the development of appropriate toolkits for customer co-creation, (b) the introduction of strong customized brands, and (c) collaborative customer co-creation in online communities.

(a) First, the development of appropriate *toolkits* for customer co-creation. The characteristics of good co-design toolkits are (1) the representation of solution space, (2) trial-and-error problem solving (learning by doing) and (3) feedback (simulation, virtual, prototyping).

(b) The second solution is the introduction of strong customized brands, a dedicated customization brand is signalling trust. This can be done through personalized branding e.g. customer's name or picture; My Brand or Brand 4 Me (Wind and Rangaswamy, 2000).

(c) The third solution is collaborative customer co-design which entails letting the customers interact in online communities. Today communities are often seen in the context of virtual (online) internet-enabled communities. Communities tend to be identified on the basis of commonality or identification among their members (Piller et al, 2005). In collaborative customer co-design co-creation of value through mass customization can be conducted either jointly in a collaborative mode among several customers (and the firm) or based on the collaborative input of several customers, even if the mass customization process itself is conducted just between the firm and the customer (Piller et al. 2005). According to Piller et al. (2005) mass customization dimensions are often influenced by the requirements or constraints of a group rather than that of a single person. It seems that customers do not just follow their own individual taste. Communities can contribute to the customer co-creation; by (1) generating customer knowledge, (2) support of collaborative co-design and joint creativity, and (3) building trust and risk reduction (Piller et al., 2005).

Conclusion

The way that Designedbymyself will co-create value with customers is through mass customization. Mass customization is the combination of mass production and custom manufacturing. In the mass customization approach, products are just built after the company received the orders with the exact quantity and quality required. The main advantage of mass customization for the firm are increased earnings and the main advantage for customers are increased satisfaction.

However, mass customization entails also disadvantages, for firms there are additional costs and for customers mass confusion is a potential disadvantage. Luckily, there are solutions to these potential disadvantages of mass customization. These solutions are summarized in table 2.7.

Solutions to high additional costs	Solutions to mass confusion
a. Principles of mass customization -Modular product families -Flexible fabrication systems -Stable processes -IT systems	**a. Development of appropriate toolkits** -Representation of solution space -Trial-and-error problem solving -Feedback
b. Economies of integration -Postponing some activities until order is placed -More precise information about market demands -Ability to increase loyalty by directly interacting with customer	**b. Introduction of a strong customized brand** -Personalized branding
	c. Collaborative customer co-design in communities -generating customer knowledge -supporting co-design and creativity -building trust and risk reduction

Table 2.7: Solutions to (potential) disadvantages mass customization

2.1.4 Conclusion

In this paragraph, relevant literature or parent theories were reviewed to build a theoretical framework upon which the research will be based to ultimately solve the research problem **Developing a strategic and marketing plan for a newly set-up online business for customized women apparel**.

Three parent theories were discussed based on literature regarding e-commerce, co-creation, and mass customization. This section addressed the first sub research question ***How can companies create a successful online presence?*** by proposing and justifying the 4S Web Marketing Mix Model as a framework to design an online business. Based on the 4S Web Marketing Model research questions 2 -5 were formulated.

However, the 4S Model's main limitation is that it is too general regarding the design of an online women fashion business. Therefore, relevant literature concerning co-creation (parent theory 2) and mass customization (parent theory 3) was reviewed. Based on these discussions, the sub research question can be formulated (see table 2.8).

S-element	Issues	Research question	Sub research questions
Scope	**Strategic issues**	***2.What are the strategic dimensions and parameters affecting the online business?***	2a: What are the strategic dimensions and parameters in the business environment affecting the online business?
			2b: What are the internal strategic dimensions and parameters affecting the online business?
			2c: What are the strategic dimensions and parameters affecting the online business regarding strategic objectives?
			2d: What are the strategic dimensions and parameters affecting the sustainable competitive advantage of the online business?
Site	**Web site issues**	***3.What are the web site issues affecting the online business?***	3a: What are the website issues affecting the co-creation of value of the online business?
			3b: What are the website issues affecting the Web Experience of the online business?
Synergy	**Organizational issues**	***4.How to create an integrated online organization?***	4a: How to create an integrated online organization through the front office?
			4b: How to create an integrated online organization through the back office?
			4c: *How to create an integrated online organization through third parties?*
System	**Technological issues**	***5.What are the technologies required for building the online business?***	*5a: What are the general technologies required for building the online business?*
			5b: What are the technologies required for co-creation of value through mass customization?

Table 2.8: S-elements, issues, research questions and sub research questions

Paragraph 2.2 will discuss immediate theories (research problem theory) to build a framework to answer research question 2 – 5 and their sub questions. There will be elaborated on strategic, website, organizational, and technological issues in the context of an online business for customized women fashion aiming to build a framework to answer the sub research questions 2 – 5.

2.2 Immediate theories

In the previous paragraph the first sub research question ***How can companies create a successful online presence?*** was addressed by proposing and justifying the 4S Web Marketing Mix Model by Constantinides (2004).

The goal of this paragraph is to *build a framework* based on immediate theories (indicated with the **X** in figure 2.4) that can be used to collect and analyze data in chapter 3 and 4. Because the 4S Model treats strategic, operational, organizational, and technological issues subsequently, the researchers structured this paragraph likewise discussing theories, models, and frameworks that can guide analyzing strategic, operational, organizational and technological issues.

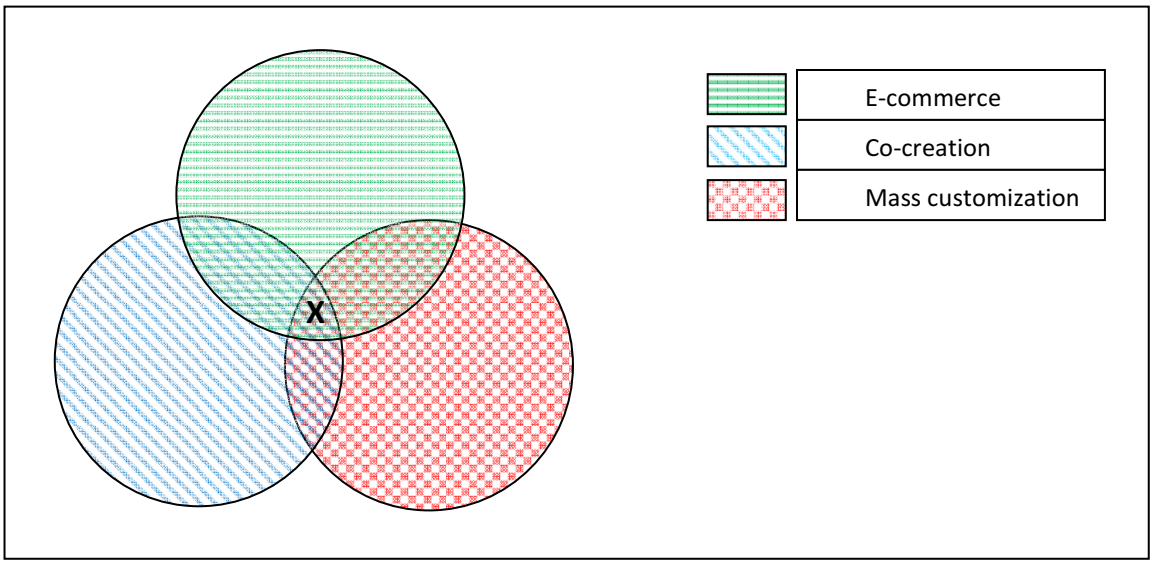


Figure 2.4: Immediate theories indicated with the X

2.2.1 Strategic issues (Scope)

In this paragraph relevant literature that can assist the researchers in analyzing the strategic issues affecting the online business will be described to build a framework in answering the second sub research question: ***What are the strategic dimensions and parameters affecting the online business?*** To address this question in a proper way, this paragraph is divided into four sections discussing the four strategic issues (a) business environment (b) internal analysis (c) strategic objectives (c) sustainable competitive advantage.

a. Strategic issue #1: Business environment

The goal of this section is to build a framework to make sense of an uncertain and increasingly complex world around the online business to answer research question 2a ***What are the strategic dimensions and parameters <u>in the business environment</u> affecting the online business?*** This is done by considering various layers of influence from macro-environmental issues to specific forces affecting the competitive position.

The business environment can be divided into three layers (see figure 2.5).

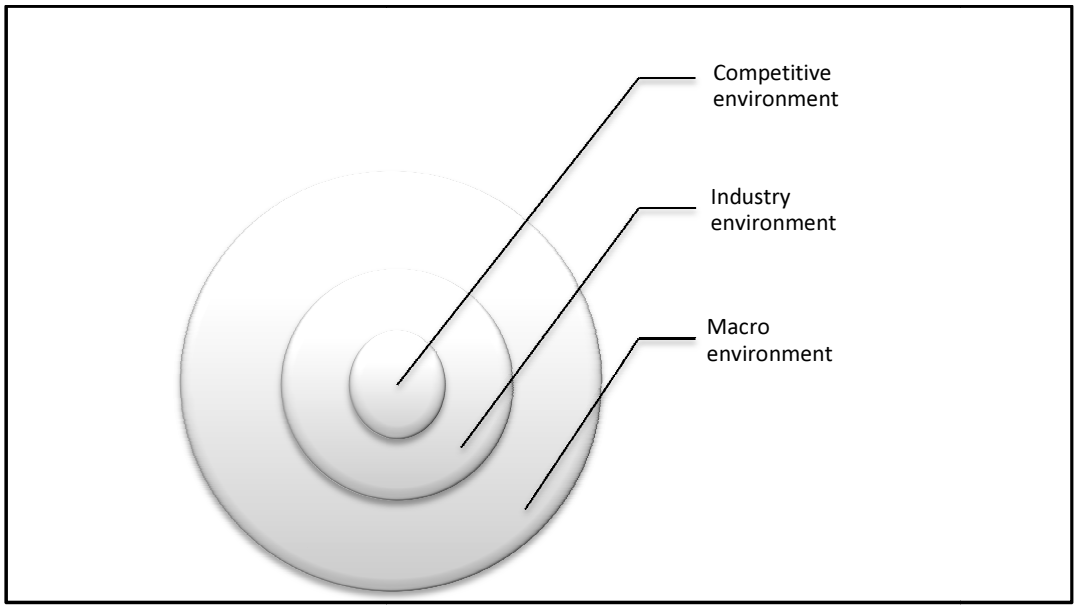


Figure 2.5: the layers of the business environment (Johnson et al., 2005)

The first layer is the **macro-environment** consisting of the broad environment factors that impact almost all organizations. Identifying future web trends and web developments is useful to get a view on this broad environment. This analysis can be found in appendix 1.

The second layer of the business environment is the **industry environment** which consists of a group of organizations producing the same products or services. An industry is a group of firms producing the same principal product. The five forces framework (Porter, 1985) helps identify the sources of competition in an industry or sector. In appendix 1 there is elaborated on the five forces within the industry environment of online customized women fashion.

The third layer is the **competitive environment** which consists of competitors and markets (customers). This layer is important in this report since the customers and competitors are direct actors on which the company has to (re)act. Hence, a framework for analyzing the competitive environment of a firm is built in the next section.

Competitors

To analyze competitors, the concept of **strategic groups** can be used. Strategic groups are organizations within an industry with similar strategic characteristics following similar strategies or competing on similar bases (Johnson et al., 2005). Characteristics that distinguish between strategic groups:

1. The scope of an organization's activities (product range, geographical coverage, and range of distribution channels used).
2. The resource commitment (brands, marketing spend, and extent of vertical integration).

Detecting and understanding which of these characteristics are especially relevant in terms of a given industry can assist in drawing a strategic group map. This concept can be used in understanding the most direct competitors. Furthermore, it focuses on identifying the basis of competitive rivalry within the strategic group. Finally, the strategic groups map can identify **strategic gaps** (Johnson et al., 2005). A strategic gap is an opportunity in the competitive environment that is not being fully exploited by competitors.

Customers

The concept of market segments can be useful in identifying similarities and differences between groups of customers. A market segment is a group of customers who have similar needs that are different from customer needs in other parts of the market.

The ultimate level of segmentation leads to segments of one, customized marketing, or one-to-one marketing. Today, customers are taking more individual initiative in determining what and how to buy. They log onto the Internet: look up information and evaluations of product or service offers; dialogue with suppliers, users, and product critics; and in the case of mass customization, design the product they want (Johnson et al., 2005).

In relation to the individualized customers, Prahalad and Krishnan (2008) use the term N=1. According to Prahalad and Krishnan (2008, p. 11), '*value is based on unique, personalized experience of customers'*. They emphasize that firms have to learn to focus on one consumer and her experience at a time. Value is shifting from products to solutions, so the individual is at the heart of experience. Wind and Rangaswamy (2001) see this as a movement towards customerizing the firm. Customerization is a buyer-centric company strategy that combines operationally driven mass customization with customized marketing in a way that empowers consumers to design the product and service offering of their choice. The firm no longer requires prior information about the customer, nor does the firm need to own manufacturing. The firm provides a platform and tools and rents out to customers the means to design their own products. A company is customerized when it

is able to respond to individual customers by customizing its products, services, and messages on a one-to-one basis. This is exactly what Prahalad and Krishnan mean with the concept N=1. It is about understanding the behaviour, needs, and skills of individual customers and co-create with them a unique value proposition.

Comparing competitors' offerings and customers' needs

The extent to which the offerings of different products within a strategic group address the factors valued by customers can be visualised by creating a **strategy canvas** to compare differences between customers (market segments) with differences between providers (strategic groups). In the literature there is not yet conducted a comparing analysis regarding online companies that customize women apparel. This is a research gap since question 2*a* ***What are the strategic dimensions and parameters in the business environment affecting the online business?*** cannot fully be answered based on the existing literature.

Conclusion

Conclusively, there can be stated that the existing literature cannot provide enough information regarding the competitive environment to answer research question 2a. Hence, **there is a research gap**. This research gap will be addressed in chapter 3 by analyzing competitors' offerings and customers' needs.

b. Strategic issue # 2: Internal analysis

This paragraph builds a framework to address research question *2b* ***What are the <u>internal</u> strategic dimensions and parameters affecting the online business?*** through analyzing the internal organization by understanding an organization's strategic capability and how this underpins the competitive advantage of the online organization. This is explained by considering what is meant by 'strategic capability', and how capabilities can be analyzed.

Strategic capability is the adequacy and suitability of the resources and competences of an organization for it to survive and prosper (Johnson et al., 2005).

To reach a competitive advantage, there must be a balance between the quality, costs and experience when co-creating value through mass customization. In order to interlink value adding activities that help to create a competitive advantage, the value chain model is used (Porter, 1985). According to Kaplinsky and Morris (2000) '*the value chain describes the full range of activities which are required to bring a product or service from conception, through the different phases of production, delivery to final customers*' (Kaplinsky and Morris, 2000, p. 4). The famous value chain model of Porter (1985) makes a distinction between primary and support activities, see figure 2.6. Regarding the primary activities Porter describes the processes of supply and the transformation of the inputs into the outputs. In the support activities he describes how a company can arrange different tasks in order to support the primary activities. At all the different activities the product will gain some value. Porter describes the total added value of all activities in the chain given to the product is more than the sum of the added value of the activities (Porter, 1985). So the value chain is a system of interdependent activities, connected by linkages. This means that the performance of activities affect one another in relation to cost and effectiveness (Kotler, 1985). So by managing the linkages carefully a competitive advantage can be reached (Kotler, 1985).

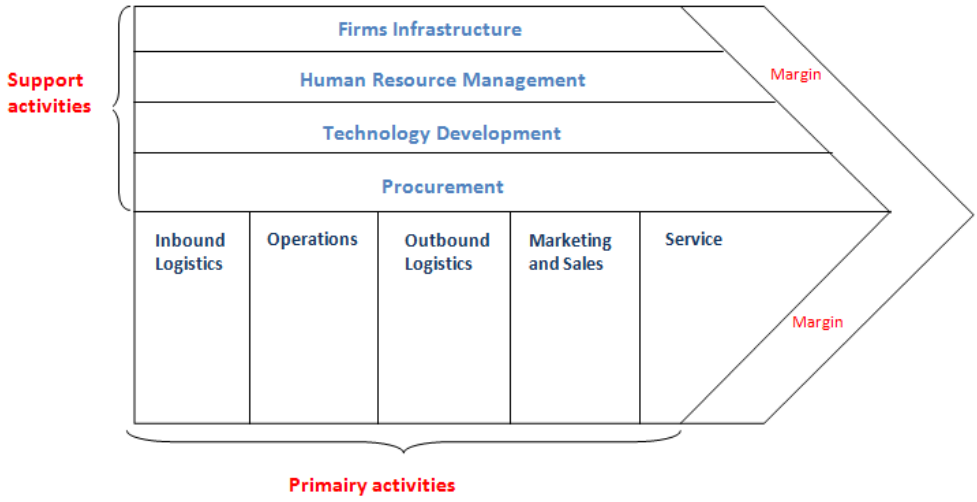


Figure 2.6: The value chain model (Porter, 1980)

Conclusion

To picture and identify the value creation of an online company that co-creates value through mass customization, the value chain can be drawn. Existing literature provides enough information (through proposing the value chain analysis) to answer research question *2b* ***What are the internal strategic dimensions and parameters affecting the online business?*** so there is no research gap left. This means that the value chain for Designedbymyself will be drawn in chapter 5.

c. Strategic issue # 3: Strategic objectives

In this section research question 2c ***What are the strategic dimensions and parameters affecting the strategic objectives of an online business?*** will be addressed.

To develop strategic objectives, first the strategic position of the company regarding its competitors and the customers' needs has to be determined.

The strategic position of a firm is concerned with the impact of the external environment and an organization's strategic capability on the strategic objectives.

To assess an organization's strategic position relative to competitors' the benchmarking method can be used. There are different benchmarking approaches:

1. *Historical benchmarking*: considering performance of the organization in relation to previous years to identify changes. Since Designedbymyself is a newly set up company, historical benchmarking is not applicable.
2. *Industry benchmarking*: Insights about performance standards can be gained by looking at the comparative performance of other organizations in the same industry against a set of performance indicators. Since there are only three direct competitors for Designedbymyself and they will be analyzed in the strategic group map, there is no need to carry out an industry benchmark. Moreover, a danger lies in the fact that a whole industry can perform badly and losing out competitively compared to other industries.
3. *Best-in-class benchmarking*: the shortcomings of industry benchmarking can encourage organizations to seek comparisons more widely across industries. In a best-in-class benchmark companies seek comparisons for best practice wherever it may be found. The power of it is shaking people out of the mindset that improvements in performance will be gradual as a result of incremental changes. In this thesis, a best-in-class benchmark could provide some best practices regarding online co-creation and mass customization which can serve the researchers to solve the research problem **Developing a strategic and marketing plan for a newly set-up online business for customized women apparel.** The existing literature provides not enough information to conduct this benchmark for Designedbymyself. Hence, a best-in-class benchmark will be carried out in chapter 3.

Conclusion

Best-in-class benchmarking could deliver useful insights regarding best practices from companies in other industries. However, such a benchmark is not yet conducted in the context of an online company that customizes women fashion. Hence, this is the second **research gap**. Therefore, a best-in-class benchmark will be carried out in chapter 3 to identify best practices regarding online co-creation and mass customization across industries.

d. Strategic issue # 4: Sustainable competitive advantages

This section will build a framework to address research question *2d* ***What are the strategic dimensions and parameters affecting the sustainable competitive advantage of the online business?***

To achieve a competitive advantage, the question is: what resources and competences might provide competitive advantage in ways that can be sustained? by understanding an organization's strategic capability and how this underpins the competitive advantage of the online organization. Strategic capability is the adequacy and suitability of the resources and competences of an organization for it to survive and prosper (Johnson et al., 2005). Strategic capabilities serve a company in acquiring a unique selling proposition (USP).

In *Reality in Advertising* Reeves (1961) provides a definition of USP in three parts:

- The brand must make a proposition to the consumer. Not just words, not just product puffery, not just show-window advertising. The brand must express to each potential customer: "Buy this product, and you will get *this specific benefit*."
- The proposition must be one that the competition either cannot, or does not, offer. It must be unique.
- The proposition must be so strong that it can move the mass millions, i.e., pull over new customers to your product. (Reeves, 1961, pp. 46-48).

Through the USP, a company can reach a competitive advantage.

To reach a competitive advantage, there must be a balance between the quality, costs and experience when co-creating value through mass customization. To create N=1, collaborative networks are needed (R=G); no single firm can create the range of skills on its own. Together with N=1 comes the need for flexibility, continuous resource configuration and the management of a collaborative network of players. In an N=1 world, variations are constant, no two problems are identical. While companies have to cope with the complexity in the technological back-end or analytical models, the customer interfaces must be simple and intuitive.

To fully profit from increased customer loyalty the firm has to (1) apply the N=1 principle, (2) develop appropriate toolkits (3) introduce a strong customized brand and (4) develop collaborative customer co-design in communities.

While organizations expand across the globe, a diversity of languages, customs and norms come along. These must be matched with the sheer scale of operations. N=1 requires an approach to access and use resources; which is called R=G. '*R=G refers to the approach to understand the nature of the resource base of large firms and learning how to access high-quality resources at low cost'*

(Prahalad and Krishnan, 2008, p. 31). Firms have moved from vertical integration to programs to access specialized, global suppliers. Outsourcing is just one way to access low-cost, high quality talent. Within the N=1 world cycle time and speed are critical elements, therefore higher speed and low cycle time can be a huge source of competitive advantage. As explained, in order to co-create value with the customer (N=1) there is a need to have access to resources globally. In order to picture this N=1 and R=G situation the value network is used.

To fully profit from increased earnings the firm has to apply (1) the R=G principle, (2) principles of mass customization and (3) economies of integration.

Customer loyalty	Increased earnings
N=1	R=G
Develop appropriate toolkits	Principles of mass customization
introduce a strong customized brand	Economies of integration
Develop collaborative customer co-design	

Table 2.9: Capabilities to reach a competitive advantage

Conclusion

It became evident from the literature that online firms that mass customized fashion need to increase customer loyalty through (1) apply the N=1 principle, (2) develop appropriate toolkits (3) introduce a strong customized brand and (4) develop collaborative customer co-design in communities. Moreover, firms have to increase earnings by means of (1) apply the R=G principle, (2) apply principles of mass customization, and (3) economies of integration.

Research question 2d is addressed and the strategic dimensions and parameters affecting the sustainable competitive advantage of Designedbymyself can be outlined in chapter 5.

Conclusion Strategic issues (Scope)

In this paragraph relevant literature was reviewed that can assist the researchers in answering the second sub research question: ***What are the strategic dimensions and parameters affecting the online business?*** This paragraph was divided into four sections discussing the four strategic issues.

The first section concerned the business environment. The business environment consists of three layers. Since the literature was sufficient, the first two (macro and industry environment) were dealt with in this paragraph. However, the existing literature could not provide enough information regarding the third layer (competitive environment) to answer research question 2a ***What are the strategic dimensions and parameters in the business environment affecting the online business?*** This is the first research gap. This research gap will be addressed in chapter 3 by analyzing competitors' offerings and customers' needs.

The second section concerned the internal analysis. To picture and identify the value creation of an online company that co-creates value through mass customization, the value chain can be drawn. Hence, research question 2b ***What are the internal strategic dimensions and parameters affecting the online business?*** is addressed. The value chain for Designedbymyself will be drawn in chapter 5.

The third section concerned strategic objectives that are based on the strategic position of a company. There are three ways to analyze the strategic position of a firm compared to other firms. The first way, historical benchmarking, is not applicable here. The second way, industrial benchmarking is already done through the strategic group map. The third way, best in class benchmarking could deliver useful best practices from companies in other industries. There is not yet a best-in-class benchmark conducted in the context of an online firm that customizes women fashion. So the existing literature cannot address research question 2c ***What are the strategic dimensions and parameters affecting the strategic objectives of an online business?*** Hence, this is the second research gap. Therefore, a best in class benchmarking procedure will be carried out in chapter 3 to identify best practices.

The fourth section elaborated on sustainable competitive advantages. It became evident from the literature that online firms that mass customize fashion need to increase customer loyalty and earnings through strategic capabilities that are valuable to buyers, rare, robust, and non-substitutable. Hence, research question 2d is addressed the literature did not leave a research gap.

2.2.2 Web site issues (Site)

This paragraph will build a framework that can help answer the third sub research question ***What are the website issues affecting the online business?*** by analyzing literature regarding the website issues affecting online businesses. This paragraph is divided into two parts which will elaborate on the website issues that play a role in designing an online business that customizes women fashion. The first part will address the application of the DART Model and the second part will elaborate on the Web Experience.

a. Website issue # 1: DART Model

This section will build a framework that can help answer sub research question 3a ***What are the website issues affecting the co-creation of value of the online business?***

The corporate website is the most important tool for a company to communicate and co-create value with the customers (Constantinides, 2002; Prahalad, 2004).

A firm can build a system for co-creation value through mass customization by concentrating on the interactions between the firm and the consumers that facilitate co-creation experiences. The building blocks for these interactions are Dialogue, Access, Risk reduction and Transparency (Prahalad & Ramaswamy, 1994).

It is important for companies to be aware of the facts that the DART building blocks cannot be applied separately. Moreover, by combining the building blocks in different ways, companies can create new and important capabilities. Therefore, Prahalad and Ramaswamy suggest that firms at least combine certain building blocks to accomplish desired results (see figure 2.7) (Prahalad and Ramaswamy 1994, p. 19-32).

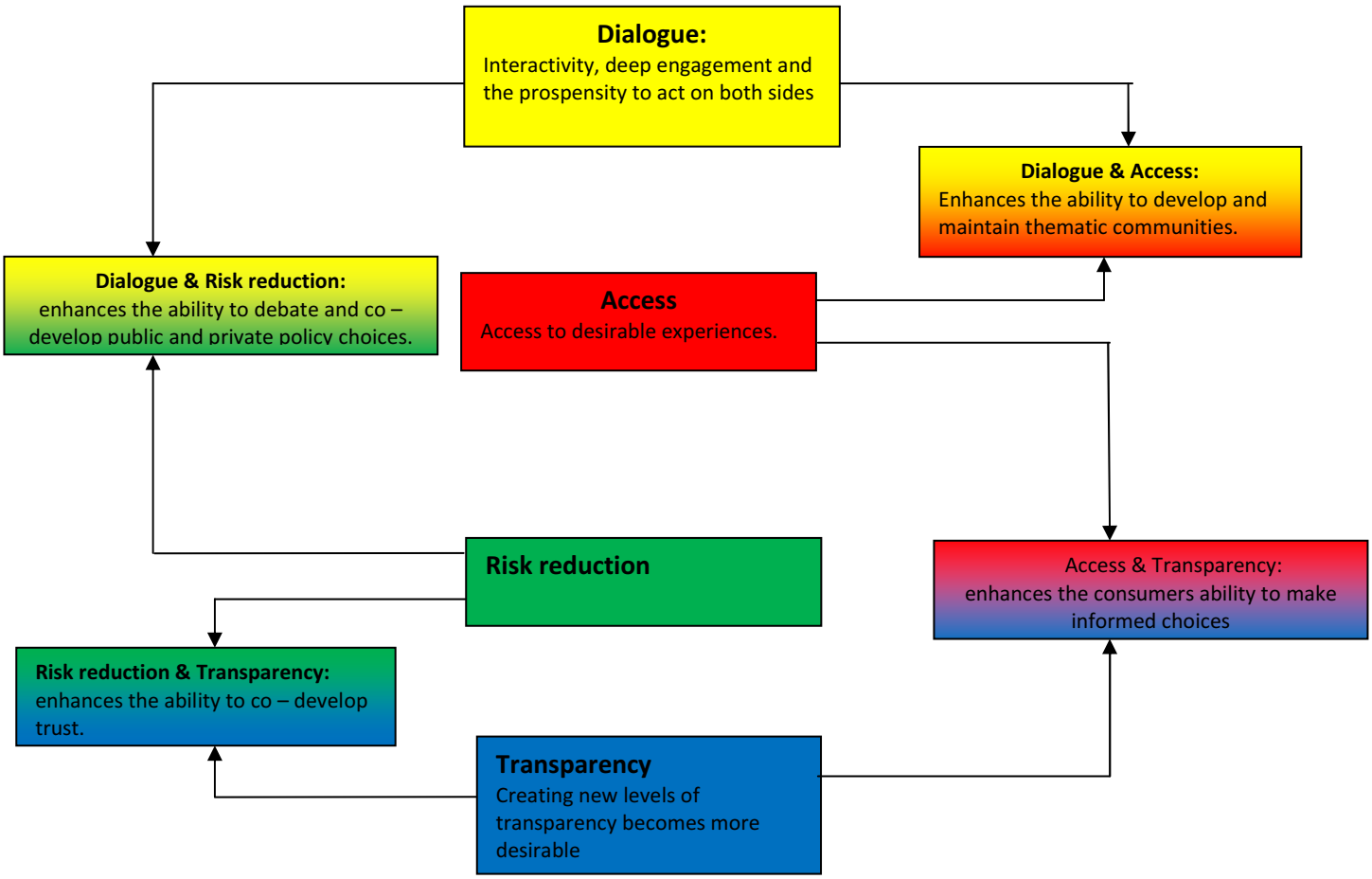


Figure 2.7: DART Model combining building blocks (Prahalad & Ramaswamy, 2004)

Conclusion

The DART building blocks can be identified through the website because, the corporate website is the most important tool for a company to communicate and co-create value with the customer. (Constantinides, 2002; Prahalad, 2004).

Since the DART building blocks are not yet analyzed on a website of a company that co-creates value through mass customization of women clothes, this leaves **a research gap**. This gap will be addressed in chapter 3.

b. Web site issue # 2: Web Experience

This section will build a framework that can help answer sub research question *3b* ***What are the website issues affecting the Web Experience of the online business?***

The website is the company-customer interface, the prime source of customer experience and therefore the most important communication element of e-commerce (Constantinides, 2002).
It is important to know how to attract and win over the customer in the highly competitive Internet marketspace. Constantinides (2004) analysed the factors affecting the online consumer's behavior by means of an extensive literature review. He identified the Web Experience components and their sub-categories and described their role as inputs in the online customer's decision making process. According to Constantinides (2004) the main building blocks of the Web Experience consist of functionality factors, psychological elements and content elements (see table 2.10).

Functionality factors		Psychological factors	Content factors	
Usability	**Interactivity**	**Trust**	**Aesthetics**	**Marketing mix**
-Convenience -Site navigation -Information architecture -Ordering/payment procedures -Search facilities and process -Site speed -Findability / accessibility	-Customer service/after sales -Interaction with company personnel -Customization -Network effects	-Transaction security -Customer data misuse -Customer data safety -Uncertainty reducing elements -Guarantees/return policy	-Design -Presentation quality -Design elements -Style/atmosphere	-Communication -Product -Fulfilment -Price -Promotion -Characteristics

Table 2.10: Building blocks of Web Experience (Constantinides, 2004)

Conclusion

So, the Web Experience can be analyzed through the building blocks of the Web Experience (table 2.10). However, in the existing literature the Web Experience of an online company that co-creates value through customizing women fashion, is not yet analyzed. This leaves **a research gap** which will be addressed in chapter 3.

Conclusion website issues (Site)

This paragraph built a framework that can help answering the third sub research question ***What are the website issues affecting the online business?***

By means of a literature study, there are two website issues identified: (1) the application of the DART building blocks and (2) the Web Experience.

The first part concluded there is no research conducted that identifies the application of the DART building blocks by an online company that co-creates value through mass customization. Since research question 3a ***What are the website issues affecting the co-creation of value of the online business?*** cannot be answered yet, the third research gap is identified here.

The second part finalized with stating that the Web Experience of (potential) customers on a website of an online company that customizes women fashion is not yet studied. Hence, research question 3b ***What are the website issues affecting the Web Experience of the online business?*** cannot be answered. This forms the fourth research gap which will be addressed in chapter 3.

2.2.3 Organizational issues (Synergy)

In this paragraph a framework will be build in order to address the fourth sub research question ***How to create an integrated online organization?*** by analyzing the organizational issues regarding (a) the front office, (b) the back office and (c) third parties.

a. Organizational issue #1: Front office (communication and marketing)

In this section a framework will be build in order to address sub research question 4a ***How to create an integrated online organization through the front office?***

The front office refers to (1) the communication and (2) marketing strategies of the online company (Constantinides, 2009).

Communication strategies

The virtual communication is based on an N=1 approach, introduced by Prahalad and Krishnan (2008) in their book 'the new age of innovation'. N=1 relates to personalized co-created experiences of consumers. According to Prahalad and Krishnan (2008, p. 11) '*firms have to learn to focus on one consumer and her experience at time, even if they serve 100 million consumers*'. This means that the individual is the centrality. This approach relates to the earlier mentioned customized marketing, or one-to-one marketing. Because customers surf individually on the internet, they also can be reached individually. So in the online environment, marketers are able to better identify customer preferences and either focus their messages and products and services on meeting the needs of each individual, or allow the customer to customize the message and products and services they desire. The internet creates a new two-way channel for interactively communicating with customers (Wind and Rangaswamy, 2001).

Marketing strategies

The main categories of interactive media include (Chaffey et al., 2009): (1) search engine marketing (2) online PR, (3) online partnerships, (4) interactive advertisement, (5) opt-in-email marketing and (6) viral and social marketing.

1. *Search engine marketing*

Search engine marketing relates to websites and their exposure of their online presence in the web marketplace by allowing online customer to locate and easily access the site (Constantinides, 2002). In order to expose the online presence in the web marketplace and by allowing online customer to locate and easily access the site, online business should make use of search engine marketing

(Constantinides, 2002). Search engine optimization (SEO) is the art, craft, and science of driving web traffic to websites (Davis, 2006). The core of search engine optimization is: (1) understand how you pages are viewed by search engine software (2) optimize webpage's from search engine viewpoint (3) avoid over-aggressive SEO practices (Davis, 2006, p. 3).

Search engines can find a certain website by means of PPC (pay-per-click) and organic keywords. PPC keywords are paid search words in a search engine for which customer will search in relation to your website. Organic keywords are those that appear naturally on your website and contribute to the search engine ranking of the page. By making use of keywords, it is necessary to add the website to search engines.

2. *Online PR*

According to Potts (2007) there are different ways of online advertisement; banner advertisement, email marketing, text link ads, paid search results and sponsorship. Constantinides (2002) ads the possibility of web directories. Web directories are specialized in linking to other websites and categorizing these links. Banner advertisements are ads as long as HTML-supported graphics . This kind of advertisement can be expensive, but the exposure can be worth the money. Email marketing can have tremendous ROI when used effectively (read more below at opt-in email marketing) (Potts, 2007). Text link ads are paid links on a website. In relation to paid search results there will be referred to search engine marketing. Sponsorships offer businesses to sponsor webinars or other high traffic events that can generate a lot of click through (Potts, 2007).

3. *Online partnerships*

Affiliate networks are networks for online promotion. It is possible to recruit other sites willing to place a banner or a link on their pages in exchange for a commission based click through (Constantinides, 2002).

4. *Interactive advertisement*

Interactive advertisement relates to interactive media to communicate with customers and promote products, brands or services. There is paid and unpaid interactive advertisement. Paid advertisement are based on click-through rates or conversion rates (Potts, 2007).

5. *Opt-in-email marketing*

There are three levels of opt-in email addresses; single opt-in, confirmed opt-in and double opt-in (Potts, 2007). Within single opt-in users are willing to provide their email address. At confirmed opt-

in the user provides their email address and receives an email that he just did. Double opt-in means that the user provided their e-mail address, and then receives an email asking them to confirm the subscription.

6. *Viral and social marketing*

Viral marketing refers to online worth or mouth marketing within social networks. Messages are forwarded to help achieve awareness and it can drive response (Chaffey et al., 2009). Viral promotions can take the form of video clips, flash games, advergames, e-books, brandable software, images or text images.

Conclusion

In order to answer question 4a ***How to create an integrated online organization through the front office?*** Information was gained from literature. Literature states that virtual communication strategies should be based on N=1 approach. In addition to that the marketing strategy should consist of the following points; (1) search engine marketing (2) online PR, (3) online partnerships, (4) interactive advertisement, (5) opt-in-email marketing and (6) viral and social marketing.
Resulting from this it shows there is no research gap in relation to the communication and marketing strategy and therefore all (research) elements can be applied in chapter 5.

b. Organizational issue # 2: Back office (creating a market oriented organization)

In this section a framework will be build in order to address sub research question 4b ***How to create an integrated online organization through the back office?***

The back office refers to the creation of a market oriented organization (Constantinides, 2002; 2009). By e-commerce support activities, a market oriented organization is created. The issues discussed next are as follows: the creation of e-commerce support activities such as (1) customer service, (2) order processing, and (3) fulfilment.

Front-end versus back-end

In order to understand how the internet can be used as a support activity, a distinction can be made between the front-end and back-end tool. The front-end tool refers to enabling the customer to order a garment and back-end refers to the processes and data exchange to manufacturers. Hammond and Kohler (2000) state that using internet as a front-end tool has great potential but the real-power of e-commerce lies in the opportunities to improve supply channel management through B2B initiatives. B2B opportunities lie in (1) the link between manufacturers and retailers, like electronic data interchange (EDI) and technologies required by lean retailing (2) connecting manufacturers with plants and suppliers (3) and connecting consumer to interface (Hammond and Kohler, 2000). Companies experienced benefits from the back-end, like systems for inventory management and order fulfilment which fit better for selling and delivering to individual customers (Hammond and Kohler, 2000).

Hence, customer service and order processing are front-end tools and fulfilment and logistic are back-end tools.

1. Customer service

Online customer service relates to the service to online customers before, during and after a purchase. Ways to provide higher high-quality customer service are live chat (for providing real-time help) or order tracking (where customers can check the status of their order).

2. Order processing

Order processing relates to the picking, packing and delivery of an online order. In relation to online mass customized apparel, the term single item picking can be used. Applications within the order processing are user friendly interfaces, saving of orders, search capabilities, checkout features with the total purchase price.

3. Fulfillment

In order to fulfil the order, back-end tools (such as fulfilment and logistics) are used. Order fulfilment starts when the order comes in (point of sales) at this moment the order is digitally converted into a distribution and logistics function. There are different degrees of customer integration possible, and therefore different order fulfilment options; engineer-to-order, made-to-order, assemble-to-order, match-to-order and bundle-to-order, depending on the options given in the online configuration.

Conclusion

Research question 4b ***How to create an integrated online organization through the back office?*** is answered by means of literature. Literature states that customer service is needed to enable customers to order online, order processing is needed to pick, pack and deliver the order and fulfillment relates to distribution and logistics.

Resulting from the literature research there is no research gap, this means that all elements can be applied in chapter 5.

c. Organizational issue # 3: Third parties

In this section a framework will be build in order to address sub research question 4c ***How to create an integrated online organization through third parties?***

Success in the virtual marketspace often requires cooperation with third parties outside the organization and its value chain (Constantinides, 2002). Thus, third parties are not directly tied to the primary product that reaches the customers.

Potential third parties for an online company that mass customizes fashion are integrated in and studied by (1) the Leapfrog Project and (2) iFashion.

1. Leapfrog

The Leapfrog project is an initiative of the European textile and clothing industry, led by Euratex, aiming at a technology breakthrough in the clothing industry. The goal of the Leapfrog project is to achieve change in productivity and competiveness of Europe's clothing sector. Leapfrog is an initiative from the clothing industry to achieve long-term industrial transformation. The project aims to transform the apparel sector into a demand-driven, knowledge based, high-tech industry. Figure 2.8 shows the points of interest and research within the Leapfrog project. The model emphasizes the importance of the information flow and the real physical flow of materials. There is for example research on 3D design and robotic sewing. This model of Leapfrog is used to show how the current apparel industry looks like and what kind of developments and research is done within the different phases of apparel design and production.

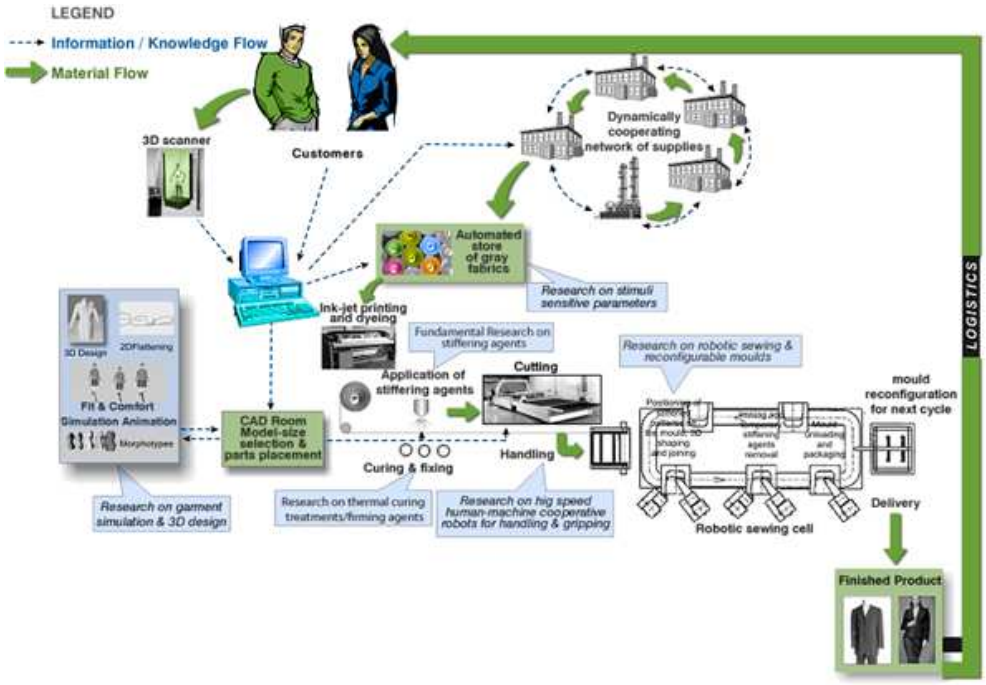


Figure 2.8: Leapfrog project

2. iFashion

IFashion is a project from the Korean center for apparel technology (related to the Konkuk University). This project keeps up with the major shifts in the fashion industry. IFashion pays attention to new ways of generation value-added in combination with IT, the ways somewhat different form the existing ones. IFashion uses a number of It technologies, including the body scanner, 3D avatar realization, virtual dressing, virtual reality, RFID communication, Digital information display and digital textile printing to pursue a brand new, knowledge based creation of value added. Two key words from this project are; ubiquitous and personalization, they represent a paradigm shift. Figure 2.9 shows the focus areas of the IFashion project.

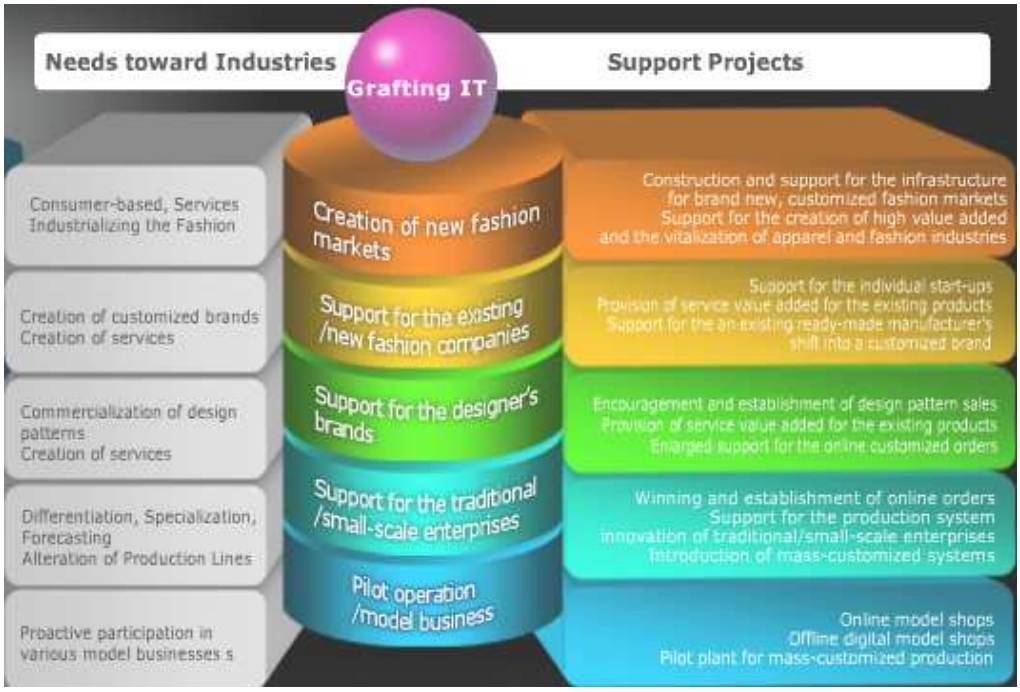


Figure 2.9; the core business of the IFashion project

Conclusion

Research question 4c ***How to create an integrated online organization through third parties?*** Can be answered by means of a literature study. Leapfrog and IFashion are third parties that could be used to create an integrated online organization. Leapfrog is an interesting project because it is a European initiative and it wants to transform the apparel sector into a demand-driven, knowledge based, high-tech industry. Additionally, IFashion is also interesting because this project focuses more on new ways to generate added value in combination with IT.

Resulting from this, there is no research gap left and IFashion, Leapfrog and other interesting third parties will be discussed in chapter 5.

Conclusion organizational issues (Synergy)

In this section a framework was built in order to address the fourth sub research question ***How to create an integrated online organization?*** by analyzing the organizational issues regarding the front office, the back office and third parties.

The first section reviewed literature to address research question 4a ***How to create an integrated online organization through the front office?*** From the existing literature resources it became evident how communication and marketing issues should be addressed by an online company that customizes women fashion. So there is no research gap left and the results from the literature study can be applied in chapter 5.

The second section concerned addressing research question 4b ***How to create an integrated online organization through the back office?*** Literature was reviewed to find out how to create a market oriented organization. It became clear that this can be done through e-commerce support activities such as customer service, order processing and fulfilment. Hence, there is no research gap and the results from this literature review can be applied to Designedbymyself in chapter 5.

The final section concerned answering research question 4c ***How to create an integrated online organization through third parties?*** These third parties are outside the organization's value chain, not contributing directly to the primary product. Leapfrog and iFashion are interesting third parties for a company that co-creates value through mass customization of women fashion. In chapter 5, there will be elaborated on third parties suitable for Designedbymyself.

2.2.4 Technological issues (System)

This paragraph will build a framework to ultimately address sub research question 5 ***What are the technologies required for building the online business?*** describing the technological issues that are needed for building the online apparel business. However, despite the fact that ICT remains the functional backbone of e-commerce, the role of technology must be put into perspective and technology should never become the starting point of online activities (Constantinides, 2002, p. 50). This paragraph is divided into two sections discussing the general technological issues of an online company and the technological issues regarding the co-creation of value through mass customization.

a. Technological issue # 1: General technological issues

In this section a framework will be build in order to address sub research question 5a ***What are the general technologies required for building the online business?***

According to Constantinides (2002), in order to successfully set up an online business, decisions have to be made within the following areas; (1) Search engine optimization, (2) web site administration, maintenance and service (3) web server hosting an choice of internet service provider (4) site construction (5) content management (6) site security (7) transaction functionality (8) collection, processing and dissemination of the web site traffic and transaction data and (9) system backup (Constantinides, 2002).

1. Search engine optimization

In order to expose the online presence in the web marketplace and by allowing online customer to locate and easily access the site, online business should make use of search engine marketing (Constantinides, 2002). Search engine optimization (SEO) is the art, craft, and science of driving web traffic to websites (Davis, 2006). For search engine optimalization companies have to generate keywords. It is possible to do keyword research with KeyCompete and analyze competitors with Seodigger and use the Wordtracker keyword suggestion tool (Jones and Moore, 2009). In order to enable the customers to find the website, companies must optimize meta description tags, meta key word tags and create meta robot tags. Meta description tags belong to the head section of a website, it is usually placed after the title tag and before the meta keyword tags. Companies can use meta robot tags for the pages they do not want to index, like pages with personal information. In order to optimize their search engines; companies can optimize blogs posts for Technorati, optimize site for del.icious.us and optimize images for Google images (Jones and Moore, 2009).

2. **Web site administration, maintenance and service**

Website administration requires permanent monitoring. The maintenance of services on which a website relies needs to be done on a regular basis (web servers, proxy, domain name service, databases etc.). Maintenance tasks relate to security, crashes, logs, cache and monitoring. A cache is a collection of data stored elsewhere; it is a temporary storage area. Effective and timely response to users' communications is a very important component of website planning and will have an effect on the rating of the website. It is important that website keep up to date and in terms of content; changes in products need to be current an accurate (Lawrence and Tavakol, 2007).

3. **Web server hosting and choice of internet service provider**

Webhosting companies provide space on a server to provide internet connectivity, in addition to that they also offer data space. There are different forms of hosting; a personal web server, institution based and a public server (Lawrence and Tavakol, 2007). Complex websites, like e-commerce websites need hosting with database support and application development platforms (like PHP). The hosting can be provided on a variety of hosting systems like Windows or Linux.

4. **Site construction**

Website design relates to the creation of the presentation and content that is delivered to the end user by the internet. There are static and dynamic webpages. Static webpages use only text and pictures and can be placed on pages using HTML/XHTML/XML tags. In order to create dynamic websites with complex media, plug-ins are needed (like Flash). The design of the webpage may utilize multiple disciplines, like animation, corporate identity, graphic design, interaction design etc. In relation to the content of the website, WCAG (web content accessibility guidelines) are needed. These guidelines make the website content more accessible (Sklar, 2008).

5. **Content management**

Web content management system (WCMS) is a web application for creating and managing HTML content. Such a CMS system controls the large collection of web material (HTML documents and pictures). A content management system facilitates document control, editing, auditing and timeline management. There are three types of content management systems; online processing, offline processing and hybrid systems. Online processing CMS are open-source and support add-ons, which enable blogs web-stores etc. Hybrid systems execute codes like ASP and PHP instead of just static codes (Kay and Abel, 2007).

6. **Site security**

SSL (secure sockets layer) and TLS (transport layer security) are needed in order to provide secure communication over the internet (Lawrence and Tavakol, 2007). A proxy server is used to keep machines anonymous; proxy servers act as an intermediary with a request and looks for sources from other servers.

7. **Transaction functionality**

The user must be aware of what is happening and must have the feeling he is in control over the processing when using the website and in control over how to access and initiate whatever functionality is needed (Lawrence and Tavakol, 2007). The payment is an important element of the transaction. A PSP (payment service provider) offers the service of online payments by means of credit cards, back transfer, Paypal etc. Such a provider can connect to multiple banks in order to process the payments.

8. **Collection, processing and dissemination of the web site traffic and transaction data**

Web traffic is the amount of data sent and received on a website. Web traffic can be measured and analysed in a web server log file. Within such a file the hits and page views can be analyzed. It is possible to monitor the number of visitors, page views, visit duration, most requested pages, top paths etc (Malacinksi et al., 2001).

9. **System backup**

Backup software is needed to ensure a copy of all data on the server in order to restore that data after a loss. A backup is needed from files, data, database, systems and the server. Back up can be done on a hard disk or a remote backup service (Lawrence and Tavakol, 2007).

Conclusion

This section answered question 5a ***What are the general technologies required for building the online business?*** Literature stated that in order to successfully set up an online business decision need to be made within the following areas; (1) Search engine optimization, (2) web site administration, maintenance and service (3) web server hosting an choice of internet service provider (4) site construction (5) content management (6) site security (7) transaction functionality (8) collection, processing and dissemination of the web site traffic and transaction data and (9) system backup. This means that there is no research gap left and all the above stated areas can be applied in chapter 5.

b. Technological issue # 2: Co-creation of value through mass customization

In this section a framework will be build in order to address research question 5b ***What are the technologies required for co-creation of value through mass customization?***

As stated in paragraph 2.1.2 firms have to (1) apply the N=1 principle, (2) develop appropriate toolkits (3) introduce a strong customized brand and (4) develop collaborative customer co-design in communities to fully profit from the increased customer loyalty. Furthermore, to fully profit from increased earnings the firm has to apply (1) the R=G principle, (2) principles of mass customization and (3) economies of integration.

Customer loyalty	Increased earnings
Develop appropriate toolkits	Principles of mass customization
Introduce a strong customized brand	Economies of integration
Develop collaborative customer co-design	
N=1	R=G

Table 2.11: Capabilities to reach a competitive advantage

In order to indicate what technologies are required to increase customer loyalty and increased earnings all the above stated points are discussed. First the customer loyalty and the technologies needed to develop appropriate toolkits, strong customized brands and collaborative co-design are described. Then the technologies are described needed to increase earnings in relation to principles of mass customization and economies of integration. At the end the technologies to create customer loyalty and increased earnings are described by means of the N=1 and R=G principle.

Increasing customer loyalty

According to Piller et al. (2004; 2005), firms can maximize customer loyalty through appropriate toolkits, a strong customized brand, and collaborative customer co-design (see table 2.11).

As stated before, the characteristics of good co-design *toolkits* are the representation of solution space, trail-and-error problem solving and feedback. Feedback can be enabled by simulation and virtual prototyping. Virtual prototyping is a process of product development. It can be implemented by using CAD (computer aided design) and CAE (computer aided engineering) software to validate a design before really making the product. This is done by a creating computer generated geometrical shapes (3D) en combining them into a 'assembly' and testing different mechanical motions, fit and function or just aesthetic appeal. Trial-and-error problem solving is called in computer science generate and test (Traill, 2008). In trial-and-error an answer is selected and tested on the problem, relating to the results (successful or not) another possibility needs to be selected. Computers are the best suited for trail-and-error problem solving. Generic algorithm is a search technique to find solutions for optimizing search problems (Fogel, 2000).

Introducing a *strong customized brand* is possible by the use of internet. Mass customization is IT-intensive on the production side, while customerization is IT-intensive on the marketing side (Wind and Rangaswamy, 2001). Customerization is a buyer-centric strategy. In order to enable customerization products are needed with a large amount of digital content (like software and music etc). Database marketing offers approaches by which firms can tailor individual offerings and products to increase customer loyalty. Companies need to manage this information and communication process. Firms can also use innovative software, such as firefly, a collaborative filtering tool, to offer creative recommendations to a purchaser. It is possible to provide the customers with customized web pages, customized products, and customized brand names (your name as the brand). With the use of internet it is easier to use loyalty building programs due to database technologies.

Collaborative co-design is possible by means of collaborative software or computer supported cooperative work (CSCW). An example of such software is e-mail. Systems used outside the marketplace is social software. This social software enables users to interact and share data. Examples of this computer-mediated software are facebook, my space and communities (Beyerlein et al., 2002).

Maximizing earnings

According to Piller et al. (2004; 2005) a firm has to apply principles of mass customization and economies of integration to maximize the earnings.

Principles of mass customization are (a) modular product families, (b) flexible fabrication systems, (c) stable processes and (d) IT systems.

a. In order to enable **modular customization**, so called building blocks needs to be used. Hence, it is possible to customize a product by assembling various combinations of modules. According to Anderson (2004), mass customization products should be designed for manufacturability. This means that products are developed in a synergistic way, in product families and around aggressively standardized parts and materials. These products are designed for no setups and for CNC programmable machines tools (Anderson, 2004). CNC means computer numerical control, these end-to-end component design systems are highly automated using CAD/CAM programs. These programs produce a computer file that interprets exactly the commands needed to operate a particular machine and are then loaded into the CNC machines for production.
b. The ability to enable **flexible fabrication** systems depends on the technology used in that certain company. According to Bleeker and Friendrich (2007) the CAD/CAM systems and their

evolution to more integrated systems like CIM (computer-integrated systems) have contributed to the emergence of mass customization. It is important to organize the production process in a way to avoid early proliferation of customer orders. To achieve this, the production process is divided in two parts; (1) first parts works based on the MTS (made-to-stock) principle and produces components and (2) after the customer order arrives the product will be customized within the MTO (made-to-order) system. The systems are split by the customer order decoupling point.

c. The concept of mass customization combines economies of scale production with parametric generation and automation of the production process, which should result in a **stable process**. The use of CNC or RP (rapid prototyping) machine ensure that the costs of one article compared to another is strictly dependant on the production time and material resources consumer, which are both minimized through the optimization of CNC coding. Mass customization creates a new generation of shop-floor control systems. These systems are able to dynamically respond to customer orders and unanticipated changes in the product environment (Tseng and Jiao, 2001). The requirement of the new control systems are decomposability, reconfigurability and scalability to achieve make-to-order with very short response time (Tseng and Jiao, 2001). *'A systematic approach has been developed to design control system by leveraging recent progresses in computing and communication hardware and software, including new software engineering methods and control technologies, such as smart sensors and actuators, open architectures, and fast and reliable networks'* (Tseng and Jiao, 2001, p. 19).

d. To implement mass customization **IT systems** are essential. Information technology is needed throughout the whole value chain. The product is done by computer-integrated manufacturing systems and controlled by manufacturing equipment, and CAD/CAM systems are used for design and manufacturing. In the apparel industry cutting operations and other tasks are digitized. To each customer's pattern, numerically controlled cutting machines are able to cut the fabric. The machine is capable of cutting virtually any pattern and can switch patterns instantly (Zipkin, 2001).

Economies of customer integration are (a) decoupling and postponement, (b) efficiency in forecasting and product development and (c) utilization of customer base.

a. According to Anderson (2004) the biggest vulnerability of mass customization is waiting, because of the **postponement** of activities until the customer order is placed. In order to deliver mass customized products fast, there is a need for flow manufacturing to make

products in small quantities and a spontaneous supply chain to make parts on-demand. Mass customizers rely on flow manufacturing in order to provide the batch-size-of-one capability.

b. According to Anderson (2004), mass customization products should be designed for manufacturability. This means that **products are developed** in a synergistic way, in product families and around aggressively standardized parts and materials. These products are designed for no setups and for CNC programmable machines tools (Anderson, 2004). Mass customized products can be produced in three ways; *modular, adjustable* and *dimensional*. Modular customization makes use of building blocks; it is possible to customize a product by assembling various combinations of modules. Adjustable customization relates to configurations that make the product customizable by the factory, customers etc. This is a reversible way to customize a product. Dimensional customization involves permanent cutting-to-fit, mixing, or tailoring, it could be infinite or have a selection of discrete choices. Dimensional customization is used in tailoring of clothing. This type of customization can be made automatically on CNC equipment running program instruction (generated on demand from data that originates in parametric CAD). In order to enable to customer to cocreate the design, online configurators are used. Mass customization provides more accurate market information on changing customer tastes and the actual tradeoffs they make in choosing products. And it offers possibilities for more accurate **forecasting** (Wind and Rangaswamy, 2001).

c. The **utilization of the customer base** relates to acquiring, structuring and analysing consumer data. With a POS (point of sale) analyser both retailers and suppliers have access to past sales data and analyse the effectiveness of specific brands, product segments, product categories in terms (Anderson, 2004).

N=1 and R=G

To maximize customer loyalty and earnings, firms have to apply the principles N=1 and R=G (see table 2.12). To be able to act on customer insights and reconfigure resources dynamically, Prahalad and Krishnan (2008) introduce a new ICT architecture in their book '*The new age of innovation*'. This new ICT architecture should embed the enterprise in the internet, connecting the external devices, sensors, and products, customers, and supplier systems. Such an architecture will enable an N=1 (personalized co-created) customer experience executed in an R=G environment (global access to resources and talent) (Prahalad and Krishnan, 2008).

The interdependencies of a business and their technical demands can be identified in a spline chart.

The charts shows three different lines;

1. Pure business; the thick black lines relate to the basic issues that must dominate decisions making in ICT architecture.
2. Business-technical; the dashed lines relate to the questions that have both a business and a technological dimension.
3. Technical; the lighter solid lines relate to the purely technical question that the CIO and ICT technical people have to resolve. Where are you as a company along these lines (ought to be)?

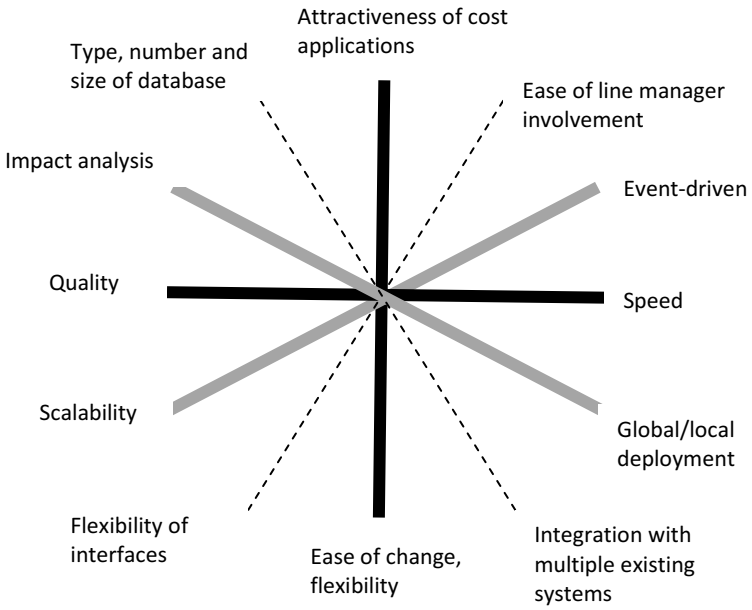


Figure 2.10: Enterprise space: where is your centre of gravity? (Prahalad and Krishnan, 2008, p. 127)

In relation to this spline chart in figure 2.10, it is possible for companies to identify along the dimensions where they are as a company, where they want to be and how they will get there.

Conclusion

This section addressed research question 5b ***What are the technologies required for co-creation of value through mass customization?*** The question is answered by means of literature. Technologies that are required for co-creating value through mass customization are summarized in table 2.12.

<table>
<tr><th>Customer loyalty</th><th colspan="4">Increased earnings</th></tr>
<tr><td rowspan="2">Develop appropriate toolkits by using virtual prototyping, CAD/CAM and CAE</td><td colspan="4">Principles of mass customization</td></tr>
<tr><td>Enable modular product families by using CNC programmable machines tools and CAD/CAM porgrams</td><td>Enable flexible fabrication by using CAD/CAM systems and organizing the production around MTS and MTO</td><td>Enable stable processes by using CNC and RP machines.</td><td>Enable IT systems by computer integrated manufacturing systems and CAD/CAM systems.</td></tr>
<tr><td rowspan="2">Introduce a strong customized brand by means of customized web pages, products and brand names.</td><td colspan="3">Economies of integration</td></tr>
<tr><td>Enable decoupling and postponement by flow manufacturing systems; batch-size</td><td>Enable efficiency in forecasting and product development by CNC and standardized parts and online configurators</td><td>Enable utilization of customer base by using POS analysers.</td></tr>
<tr><td>Develop collaborative customer co-design by using collaborative software or computer supported cooperative work (CSCW) and social software</td><td colspan="3"></td></tr>
<tr><td>N=1 can be achieved by applying the enterprise space (spline chart).</td><td colspan="3">R=G can be achieved by applying the enterprise space (spline chart).</td></tr>
</table>

Table 2.12; technologies required for co-creation of value through mass customization.

Moreover, by using a spline chart a business can visualize the technological issues.

This section addressed research question 5b, so there is no research gap left, chapter 5 will apply the results.

Conclusion technological issues (System)

This paragraph built a framework to address sub research question five ***What are the technologies required for building the online business*****?** describing the technological issues that are needed for building the online apparel business. The paragraph was divided into two sections discussing the general technological issues of an online company and the technological issues regarding the co-creation of value through mass customization.

In the first section, literature was reviewed to address sub research question 5a ***What are the general technologies required for building the online business?***
From the literature it became clear that general technological issues concern (1) Search engine optimization, (2) web site administration, maintenance and service (3) web server hosting an choice of internet service provider (4) site construction (5) content management (6) site security (7) transaction functionality (8) collection, processing and dissemination of the web site traffic and transaction data and (9) system backup. All these issues are dealt with in the existing literature, thus they can be applied to Designedbymyself in chapter 5.

The second part of this paragraph elaborated on technical issues regarding co-creation of value through mass customization to answer research question 5b ***What are the technologies required for co-creation of value through mass customization?***
From the literature it became evident that firms have to (1) apply the N=1 principle by using the enterprise space, (2) develop appropriate toolkits by using virtual prototyping, CAD/CAM and DAE systems (3) introduce a strong customized brand by means of customized web pages, products and brand names and (4) develop collaborative customer co-design by means of CSCW in communities to fully profit from the increased customer loyalty. Furthermore, to fully profit from increased earnings the firm has to apply (1) the R=G principle by applying the enterprise space, (2) principles of mass customization by using CNC machine tools, CAD/CAM programs, MTS and MTO fabrication and (3) economies of integration by using flow manufacturing systems, CNC systems, online configurators and POS analysers. Hence, there is no research gap and these issues can be applied to Designedbymyself in chapter 5.

2.3 Conclusion

In this chapter a literature review was conducted. In paragraph 2.1 parent theories were reviewed and the first sub research question ***How can online companies create a successful online presence?*** was addressed by proposing and justifying the 4S Web Marketing Mix Model by Constantinides. However, a main drawback of the 4S Model was that it is rather general. Therefore, paragraph 2.2 put a fence around the research by reviewing immediate theories to address the strategic, operational, organizational and technological issues that the 4S Model proposes.
So, this chapter described parts of the research problem studied in previous research and identified research gaps that are not answered yet in previous research (see figure 2.11).

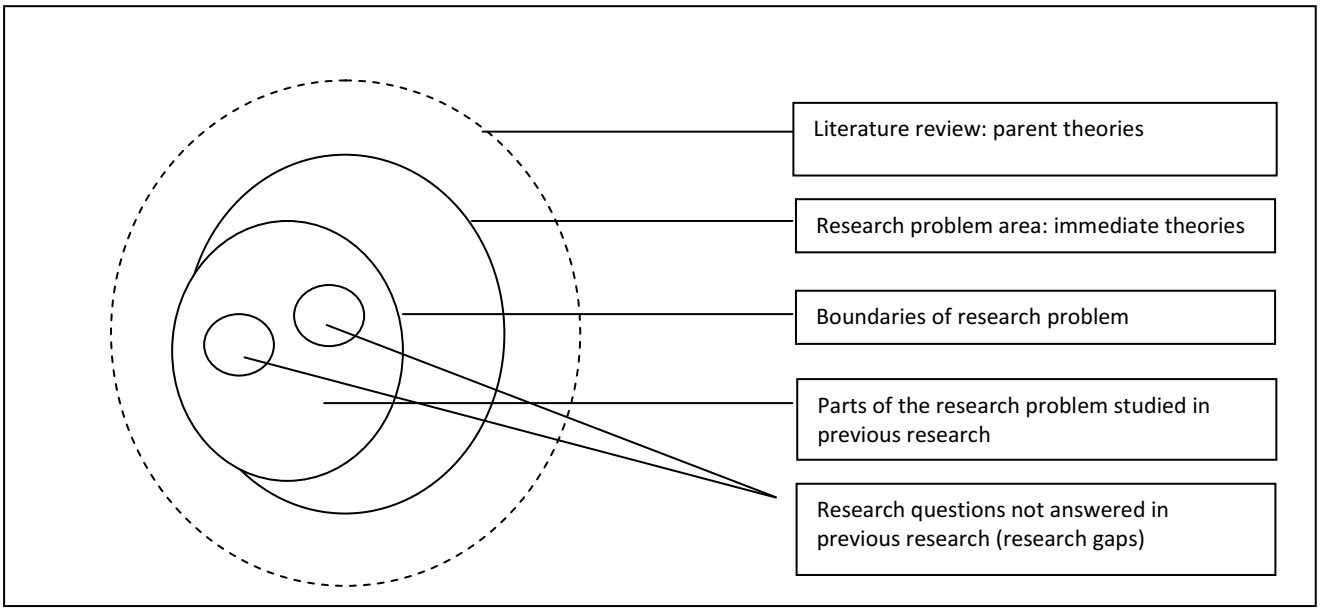


Figure 2.11: Relationships between the parent theories and research problem theory, and between the research problem and the research issues (adapted from Perry, 1998, p. 22)

The research gaps concern:

1. Ignorance of the competitive environment (competitors and customer) of an online company that customizes women fashion. This research gap will be addressed in chapter 3 by analyzing competitors' offerings and customers' needs.
2. There is not yet a best practice available (for an online company that customizes women fashion). Therefore, a best-in-class benchmarking procedure will be carried out in chapter 3 to identify best practices.

3. Ignorance of the application of the DART building blocks to a website of an online company that customizes women fashion. Therefore, the application of the DART building blocks will be analyzed in chapter 3.
4. The Web Experience of (potential) customers of an online company that customizes women fashion is not yet studied. Hence, this will be done in chapter 3 through customer observations and interviews.

To address the research gaps (questions not yet answered in the existing literature), chapter 3 will outline and justify the methodology used in this thesis to find answers to these questions. Chapter 4 will 'fill' the research gaps by analyzing the data collected in chapter 3. After this, chapter 5 can draw conclusions regarding the research problem **Developing a strategic and marketing plan for a newly set-up online business for customized women apparel**.

Chapter 3 Empirical study to address research gaps

'The great aim of education is not knowledge, but action.' – Herbert Spencer

3.1 Introduction

By means of a literature study, chapter 2 answered the first sub research question ***How can online companies create a successful online presence?*** by proposing and justifying the 4S Web Marketing Mix Model.

Furthermore, chapter 2 described parts of the research problem **Developing a strategic and marketing plan for a newly set-up online business for customized women apparel** that are already studied in previous research and identified research gaps (parts of the research problem that are not yet answered in previous research).

In the context of an online company that customizes women fashion, there were four research gaps identified:

1. Ignorance of the competitive environment
2. Best practice (best in class benchmark)
3. Ignorance of the DART building blocks
4. Ignorance of the Web Experience

This chapter describes the methodology used to provide data to investigate these issues. Section 1.4 provided an introduction to the methodology. This chapter aims to build on that introduction and to provide assurance that appropriate procedures were followed to answer the following sub research questions:

- *2a: What are the strategic dimensions and parameters in the business environment affecting the online business?*
- *2c: What are the strategic dimensions and parameters affecting the online business regarding strategic objectives?*
- *3b: What are the website issues regarding the application of the DART building blocks affecting the online business?*
- *3c: What are the website issues regarding the Web Experience affecting the online business?*

Thus, the methodology in this chapter will investigate the strategic issues and the website issues in practice.

To do this, there are several methods used in this chapter to collect data. The main methodology used in this chapter is the case study method.

The key methodology in investigating the strategic issues (addressing question 2a and 2c) is the multiple case study method.

The key methodology in investigating the website issues (addressing question 3b and 3c) is the single case study method analyzing the case of Styleshake. Within the case study, several information collection methods are used, like customers interviews, web based research, and desk research. The data collected in this chapter will serve as input to the fourth chapter where the data will be analyzed in the context of Designedbymyself.

3.2 Justification of the paradigm

In essence, the aim of this research is to describe and explain complex social science phenomena. According to Perry et al. (1999), realism is an appropriate scientific paradigm within which to research these phenomena. A scientific research paradigm is the overall conceptual framework within the research is done, according to Deshpande (1983, p. 101): *'a set of linked assumptions about the world which is shared by a community of scientists investigating the world'.* There are four paradigms:

1. Positivism
2. Critical theory
3. Constructivism
4. Realism (Guba & Lincoln, 1994)

Each of these paradigms consist of three elements:

1. Ontology: the reality that researchers investigate
2. Epistemology: the relationship between that reality and the researcher
3. Methodology: the technique used by the researcher to investigate that reality (Guba & Lincoln, 1994)

Table 3.1 summarizes Guba and Lincoln's (1994) categorization of the paradigms based on the three elements.

Element	**Paradigm**			
	Positivism	**Critical theory**	**Constructivism**	**Realism**
Ontology	Reality is real and apprehensible	Virtual reality shaped by social, economic, ethnic, political, cultural, and gender values, crystallised over time	Multiple local and specific constructed realities	Reality is real but only imperfectly and probabilistically apprehensible
Epistomology	Objectivist: findings true	Subjectivist: value mediated findings	Subjectivist: created findings	Modified objectivist: findings probably true
Methodology	Experiments/surveys: verification of hypotheses, chiefly quantitative methods	Dialogic/dialectical: researchers is a transformative intellectual who changes the social world within which participants live	Hermeneutical/dialectical: researcher is a passionate participant within the world being investigated	Case studies: triangulation, interpretation of research issues by qualitative methods

Table 3.1: Four categories of scientific paradigms and their elements (adapted from Healy & Perry, 2000)

Positivism assumes that science quantitatively measures independent facts about a single apprehensible reality (Guba & Lincoln, 1994; Healy & Perry, 2000). However, a positivism view is not appropriate in this study as it ignores the ability of social science phenomena (like respondents) to reflect on problem situations and act on these in an interdependent way (Robson, 1993, p. 60). Contradictory to the positivism's relevance to quantitative research, the other three paradigms are relevant to qualitative research (Healy & Perry, 2000).

Critical theory research inquiries are often long-term ethnographic and historical studies of organizational processes and structures. Hence, this paradigm is also not suitable for this research. Constructivism excludes concerns about important and clearly real economic and technological dimensions which makes this paradigm inappropriate for this study (Healy & Perry, 2000).

Finally, realism believes that there is a real world to discover even though it is only imperfectly apprehensible (Guba & Lincoln, 1994).

The three ontological assumptions are summarized by Popper in three 'worlds'. World one is positivist and consists of objective, material things. World two is related to critical theory and constructivism, and is the subjective world of minds. World three is related to realism and consists of abstract things that are born of people's minds but exist independently of any one person. According to Magee (1985, p. 61): *'the third world is largely autonomous, though created by us'*. Thus, the third realism world can be distinguished from the very objective world one and the very subjective world two.

The distinction between realism and constructivism is made by Stake (1995) between intrinsic and instrumental case research. In an intrinsic case study, the case itself is the focus. In an instrumental case study, the case is being used to understand something else, that is, to understand world three according to Popper.

In this research, realism is the appropriate paradigm since the phenomena being studied serve as a window on a reality beyond these phenomena, thus the case study serves to understand the third world of Popper (Healy & Perry, 2000). Next, the case study method will be outlined and justified.

3.2.1 Justification of the methodology

The methodology used in this chapter is the case study method. The goal of this case study is to explore and describe how the strategic and operational issues described in chapter 2 have been analyzed in the field and to outline the main empirical conclusions drawn from these findings. The goal of this chapter is to answer sub research questions:

- *2a: What are the strategic dimensions and parameters in the business environment affecting the online business?*
- *2c: What are the strategic dimensions and parameters affecting the online business regarding strategic objectives?*
- *3b: What are the website issues regarding the application of the DART building blocks affecting the online business?*
- *3c: What are the website issues regarding the Web Experience affecting the online business?*

A case study method involves a detailed examination of a contemporary phenomenon of theoretical significance embedded in its real life context, usually by the use of multiple data sources. In the context of this research a case study is an appropriate method for investigating the application of the strategic, operational, organizational and technological issues in practice for a number of reasons.
First, a frequently mentioned goal of case study research is inductively building of theory through theoretical or analytical generalization (Seale, 1999; Yin, 2003), which is described by Sim (1998, p. 350) as: *'the data gained from a particular study provide theoretical insights which possess a sufficient degree of generalization to allow their projection to other contexts or situations'*. However, instead of pure induction, a mix of induction and deduction is being advocated by some scholars. They argue that some prior theory can have a function in the case study design and data analysis and Richards (1993) states that it is impossible to go theory-free into a study. Pure induction could prevent that the researcher benefits from existing theory, while pure deduction might prevent new theory development (Perry, 1998). That is why existing theory and theoretical models are being used in this research.
Second, a case study design is advantageous in this thesis, since the issues of interest are so complex that cannot be quantified to answer the research question (Bonoma, 1985).
Finally, the phenomenon under study in this thesis cannot be studied outside its natural setting since the setting is also studied in this research. This implies that a case study design is an appropriate one (Yin, 2003; Bonoma, 1985).

Strengths and weaknesses of the case study design

The main strengths of the case study method are the depth of analysis, the flexibility, and the high internal validity. Because the phenomenon is studied in its real-life context as it is developing, the case study method can provide a rich explanation of the phenomenon by adapting the research design as issues are unfolding (Robson, 2002).

Nevertheless, a common-heard point of critique is the trade-off between internal validity and generalizability (Robson, 2002; Smaling, 2003). However, this only concerns the statistical generalization. Besides statistical generalization there are other forms of generalization (Constantinides, 2009). Yin (2003) rejects statistical generalization and coins the term analytical generalization, also theoretical generalization by Seale (1999) to indicate that there is generalization from one case to other cases that belong to the scope of the theory involved.

Case selection and their number

When designing a case study, the researcher should make a choice regarding the number of cases that will be investigated. Basically, this choice involves a trade-off of depth of analysis in a single case study against greater generality of the findings through the use of comparative analysis in a multiple case study.

The investigation of the strategic issues will address the research questions:

- *2a: What are the strategic dimensions and parameters in the business environment affecting the online business?*
- *2c: What are the strategic dimensions and parameters affecting the online business regarding strategic objectives?*

Research question 2a will be solved by drawing a strategy canvas comparing providers' offerings and customers' needs. To identify providers' offerings, a strategic group map will be drawn. Hence, a multiple case study method will be used. Through desk research and web based research information about the strategic group of Designedbymyself will be identified. To identify customers' needs, a customer survey was conducted.

Research question 2c will be addressed through a best-in-class benchmark of two cases, LEGO and Threadless. Hence, to address the strategic issues (research questions 2a and 2c), multiple case study methods are used.

The investigation of the operational web site issues will address the research questions:

- *3b: What are the website issues regarding the application of the DART building blocks affecting the online business?*
- *3c: What are the website issues regarding the Web Experience affecting the online business?*

Research question 3b and 3c will be answered through a single case study method analyzing the case of Styleshake. The application of the DART building blocks will be investigated through the website of Styleshake and the Web Experience of Styleshake's website will be investigated through customers observations and interviews.

3.3 Strategic issues

This paragraph will investigate the research question 2a and 2c.

Research question 2a ***What are the strategic dimensions and parameters in the business environment affecting the online business?*** will be solved by drawing a strategy canvas comparing providers' offerings and customers' needs. To identify providers' offerings, a strategic group map will be drawn. Hence, a multiple case study method will be used. Through desk research and web based research information about the strategic group of Designedbymyself will be identified. To identify customers' needs, a customer survey was conducted.

Research question 2c ***What are the strategic dimensions and parameters affecting the online business regarding strategic objectives?*** will be addressed through a best in class benchmark of two cases; LEGO and Threadless. Hence, to address the strategic issues, multiple case methods are used. Information was gathered through desk research and web based research.

3.3.1 Comparing providers' offerings and customers' needs

In this section research question 2a ***What are the strategic dimensions and parameters in the business environment affecting the online business?*** will be analyzed empirically through the drawing of a strategy canvas.

The competitive environment consists of competitors and customers. Next, the competitive environment will be studied empirically.

This analysis consists of an elaboration of the competitors and markets regarding online mass customization of women fashion. The concept of strategic groups will help identifying direct and indirect competitors (Johnson, Selnes and Whittington, 2005).

Furthermore, customers' expectations are not all the same and have a range of different requirements of which the importance can be understood through the concept of critical success factors (Johnson, Selnes and Whittington, 2005).

Identifying competitors

First, the strategic group in which Styleshake is competing will be determined to yield a clear picture regarding the competitive situation in this strategic group in which Designedbymyself will be competing too. The selection of the variables to reflect strategic behaviour in an empirical investigation of strategic groups is a complex process (McGee & Thomas, 1992). According to Cool and Schendel (1987) and Johnson, Scholes and Whittington (2005) two key dimensions have to be reflected by the strategic parameters when defining strategic groups. The first of these, the scope of firms' activity, covers the market segment(s) served, the product range offered and the geographical

coverage of company activities. The second dimension relates to the resources committed in pursuit of this strategic scope, and in particular the manner in which different firms allocate resources between the different functional areas in order to achieve competitive advantage within the target market segments.

The variables used in this strategic group analysis are based on the International Configurator Database[1]. This is the world's biggest configurator database, featuring over 500 web-based configurators. These are companies that co-create value through mass customization. The full version of the database covers 85 attributes per configurator. There are several categorizations, among which the industry the company is operating. There are 28 different industries including furniture, automobile, equipment for children, music and apparel. The industry of interest in this thesis is apparel. Within the apparel category there are 162 companies. Furthermore, there is a categorization of product and country. Table 3.2 visualizes the number of companies and the mass customizable product they are offering.

Product	Number of companies
Bag	1
Business clothes	1
Clothes	13
Dirndl	1
Diving-suit	1
Dress	3
Jacket	1
Jeans	5
Lingerie	1
Poloshirt	1
Pullover	2
Shirt	40
T-shirt	90
Trousers	1
Underwear	4

Table 3.2: Product offered and number of companies

According to the International Configurator Database there are 3 companies offering customizable dresses. These companies are: Styleshake, Dress by Design and Studio 28 Couture. To ensure that there are no more companies that offer customizable dresses the researchers conducted a supplementary search through Google which resulted in the same three companies.

For these three companies that form a strategic group, a strategic group map can be drawn.

The goal of drawing a strategic group map is to understand the most direct competitors of Styleshake, focussing on identifying the basis of competitive rivalry within the strategic group.

[1] http://www.configurator-database.com/, visited November 2009

Before drawing this strategic group map, the time dimension has to be addressed.
A full and rigorous consideration of the time perspective is extremely important in strategic groups analysis. There are serious drawbacks to basing such an analysis on a certain point in time. Such static studies implicitly assume that the structure of strategic groups detected in one specific period remains the same through time (Fiegenbaum et al., 1987). However, this invariance is not self-evident: the industry might not be in equilibrium at the point in time selected for the study or, even if it is, external distortions might be in train which will lead to a new equilibrium (Flavian, 1995).
Since the concept of Styleshake (co-creation of value through online mass customization) is relatively new in the business-to-customer apparel industry, the researchers realize that the strategic group will vary from this point on. It is very likely that many new competitors will enter the market the next 5-10 years. However, the goal of this research is to **Design an online business for customized women apparel that will compete** in the same strategic group as Styleshake, so the particular point in time where the research is conducted, is important. While writing the plan, the writers have to take into account that the competition is likely to become more intensive in a few years.
After these considerations, there can be proceeded to the strategic group map.
Mapping of strategic groups can provide insights into the competitive structures of industries and the opportunities and constraints for development. As already stated, the strategic group of Styleshake, consists of Styleshake, Dress by Design and Studio 28 Couture. Screenshots on the competitors websites can be found in appendix 2.
The variable groups used to distinguish the three different companies and to draw the strategic group map can be found in table 3.3. Each variable group consists of one or more variables that were measured on the three websites of the strategic group members.

Variable group	Variable	Styleshake	Dress by Design	Studio 28 Couture
Amount of choices	Extent of product diversity	Dresses, skirts, tops, accessories	Dresses	Dresses
	Extent of fabric diversity	Silk, cotton, linen	Wool, jersey, cotton, silk, chiffon, tweed, velvet, linen, satin	Jersey, cotton
	Extent of color and print diversity	29 colors, no prints	211 different colors and prints	17 colors, 11 prints
	Extent of element diversity	Upper body (8), neckline (25), sleeves (12), waist panel (2), lower part (19)	Whole dress style (8), neckline (9), sleeve (6) and length of dress (3)	Top style (4), skirt style (5), top details (3), skirt details (3)
	Number of steps to finalize design	7	4	6
Geographical coverage	Extent of geographical coverage	Western Europe, USA, Canada, Australia	Globally	USA
	Market segments served	Women age 20-60, bridesmaids,	Women around the world, age 30-70,	American women 20-30,
Customer service and customer Interaction	Made to measure	Yes	Yes	Yes
	Free alteration service	Yes	Yes	Yes
	Money back	No	Yes	No
	Shipping time	2 weeks	3-4 weeks	3 weeks
	Forum	No	No	No
	Rating possibility	Yes	No	No
	Client testimonials	Yes	Yes	No
	Number of payment methods	Credit card (9) and paypal	Credit card (4)	Check out malfunction
Price	Prices	$75-$125	$250-$300	$200-$250

Table 3.3: Variables used to draw strategic group map

With the four variable groups, a strategic group map can be drawn. There are four strategic variables: the amount of choices, the geographical coverage, the customer service and customer interaction, and the price. To serve clarity the price is visualized beginning with a high price on the left to a low price when shifting to the right. All the other variables are set beginning with low shifting to higher values following the arrow. The strategic map is visualised in figure 3.1.

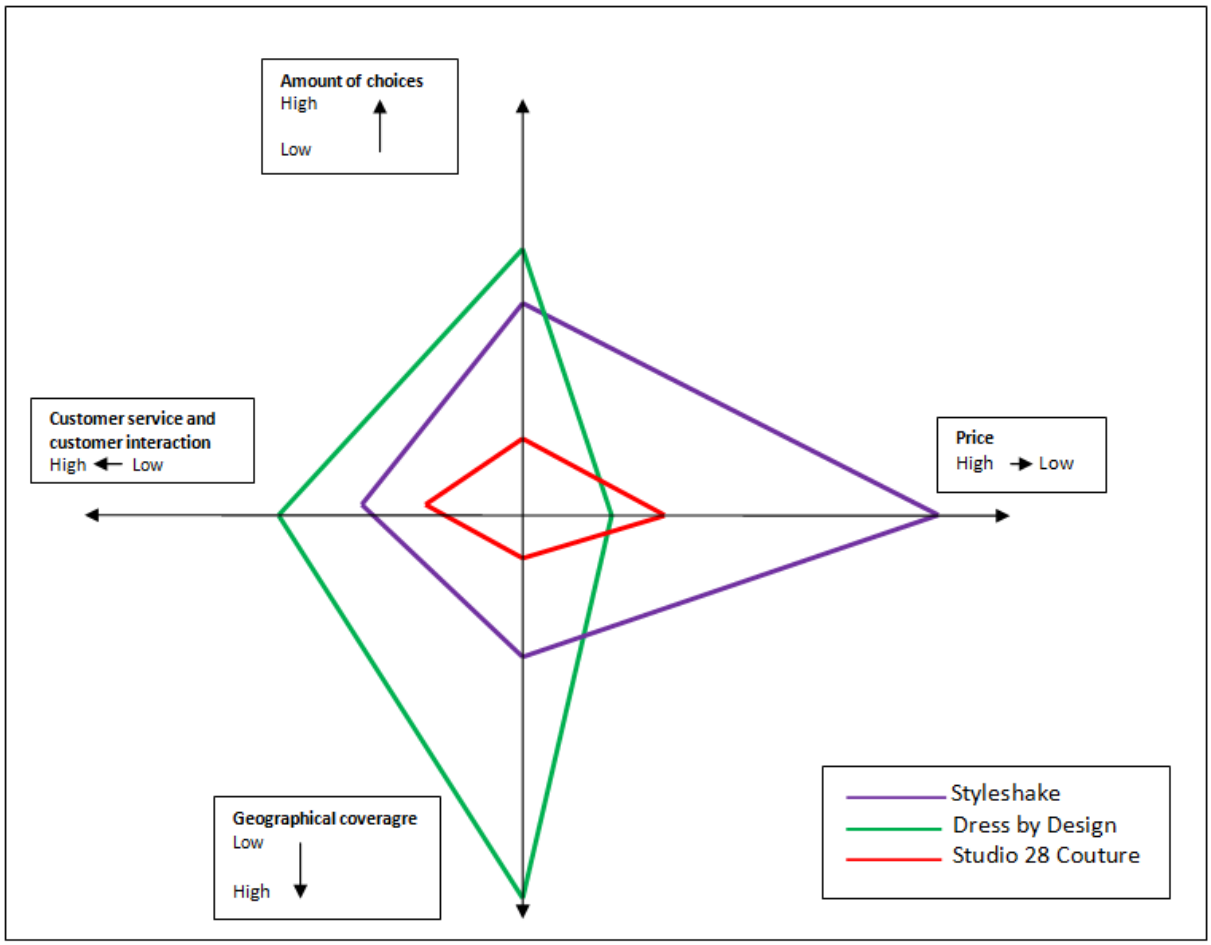


Figure 3.1: The strategic group map (adapted from: Johnson et al., 2005. P. 93)[2]

Figure 3.1 provides an indication of how the three competitors of Designedbymyself are positioned in terms of amount of choices, price, geographical coverage, and customers service and customer interaction.

The strength of Styleshake is the low price. Furthermore, Styleshake delivers to Western Europe, USA, Canada and Australia which means an average geographical coverage. The amount of choices was also on average. Finally, the customer service and customer interaction were below average, since there was low perceived interaction and the customer service did not respond to an email within the promised 24 hours, in fact they did not respond at all.

Concerning Dress by Design there can be stated that this company is relatively strong on all the terms except for the price. The price of an average dress is US$250-US$300 which is expensive in relation to mass produced and even design dresses in retail stores. Moreover, the price is also the highest in this particular strategic group. The customer service of Dress by Design responded to an e-mail within

[2] This strategic group map is only an indication of the proportions of the interrelations between the companies on the four variable groups since the variables are not all quantifiable.

several hours which is enhancing the score. However, the customer interaction was very poor since the design tool is of a low quality.

Studio 28 Couture is the weakest competitor in this strategic group. The company scores low on every point. First, the customer service and interaction was worse than Dress by Design and Styleshake. Second, Studio 28 Couture only delivers within the USA. Third, the quality of the design tool was very low. Finally, the price was relatively high and especially regarding the low scores on all the other items, the price of US$200-US$250 is too high.

Identifying customers

In this section, the customer profile will be described. This is a rather difficult task since the buyers can be quite different in terms of buying motives, cultural backgrounds, needs, demographic, technographic, lifestyle or geographic location (Constantinides, 2002).

Since Styleshake offers her customers to mass customize dresses, a one-to-one segmentation and a individually based customer identification seems to be a suitable approach.

Chapter 2 elaborated on N=1, customerization, a buyer-centric company strategy that combines operationally driven mass customization with customized marketing in a way that empowers consumers to design the product and service offering of their choice. In summary, a firm's decision to move from standardization to customerization is based on the changing customer needs and desires, their interest in customerization and ability and competencies to engage in this co-production process as well as the firms' technological and operational capabilities (Wind & Rangaswamy, 2001).

Critical success factors

To identify the critical success factors in the context of an online business that customizes women fashion, the researchers asked respondents in a customer survey[3] to rank the following factors according to the perceived importance of each factor:

- Price: is the price good? Not too low, not too high?
- Quality of designed product: does it meet you expectations?
- Design tool: is the design tool functional and user friendly?
- Quantity of choices: are there enough choices? Not too few, not too many
- Customer service: is the customer service good? Does the company interact on a personal basis with you?
- Identification: do you identify with the website and the brand? Do you want to be seen with the garment?

In table 3.4 the results of this survey are visualized.

Factor	Rank	Average score
Price	5	4,9
Quality	1	1,9
Design tool	3	2,8
Quantity of choices	6	5,2
Customer service	4	3,6
Identification	2	2,2

Table 3.4: Results of customer survey identifying critical success factors

The respondents perceived the quality of the designed product, the identification and the user-friendliness of the design tool the most important factors followed by the customer service. When these four factors are perceived as good, customers perceived the price and the quantity of choices not really important (if price is not too high and choices are not too scarce).

Combining competitor's offerings and customers' needs through a strategy canvas

As explained in chapter 2 the extent to which the offerings of different products address the factors valued by customers can be visualised by creating a strategy canvas to compare differences between customers with differences between providers (strategic groups). A strategy canvas is a graph where the horizontal axis represents the factors that customer's value and the vertical axis plots the rating of the competitors regarding these factors.

After making clear what customer's value, the researchers studied the three websites of Styleshake, Dress by Design and Studio 28 Couture and assigned a score for per factor for each website.

[3] See for more details concerning the respondents page 93, table 3.10

Figure 3.2 shows the strategy canvas comparing the differences between factors customers value with differences between the companies within the strategic group discussed in the previous paragraph.

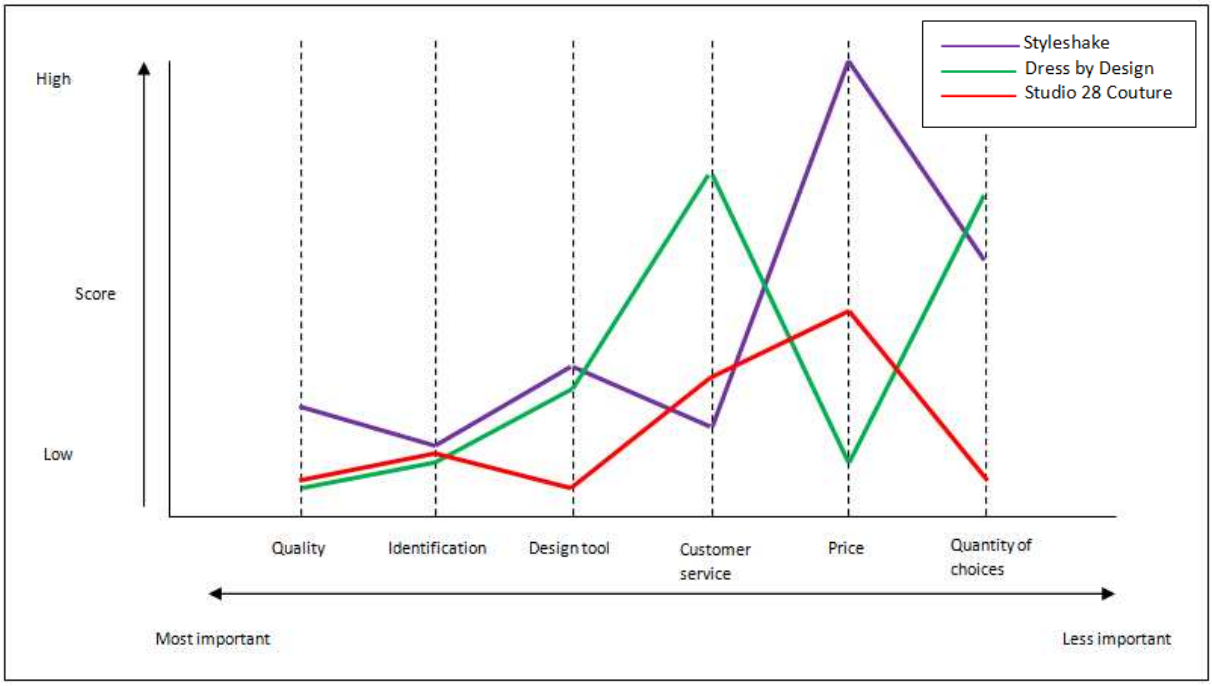


Figure 3.2: Strategy canvas of the strategic group of Styleshake, Dress by Design and Studio 28 Couture

Figure 3.2 shows that the most direct competitors of Designedbymyself will be Dress by Design and Styleshake. This is because Dress by Design and Styleshake score high on design tool and quantity of choices. However, the competitors of Designedbymyself do not focus on the factors that customers value (quality, identification, and design tool). Thus, the neglect of these factors by the competition are strategic gaps that can be filled by Designedbymyself to reach a competitive advantage.

Conclusion

In this section research question 2a ***What are the strategic dimensions and parameters in the business environment affecting the online business?*** was addressed empirically through the drawing of a strategy canvas.

There can be concluded that the competitive group of Designedbymyself (Dress by Design, Studio 28 Couture and Styleshake) is not focusing on the factors that are valued by customers. Hence, by focusing on these factors (quality, identification, and design tool) Designedbymyself can reach a competitive advantage.

3.3.2 Best practice (best in class benchmark)

In this paragraph research question 2c ***What are the strategic dimensions and parameters affecting the online business regarding strategic objectives?*** will be studied empirically through a best-in-class benchmark of two cases, LEGO and Threadless. These two cases were chosen since they are frequently mentioned in the literature as striking examples of implementing co-creation in practice (Prahalad & Ramaswamy, 2004; Prahalad & Krishnan, 2008; Piller et al., 2004; Piller et al., 2005; Piller, 2008; Pollard et al., 2008).

The case of LEGO

In 1932 the carpenter Ole Kirk Christiansen (1891 – 1958) established what is known today as the LEGO Company in the Danish village Billund, with a today's revenue of 9,526 million DKK (annual report 2008, p. 11). Through the years, LEGO needed to change their way of business a number of times. In the first years, LEGO was using wood as the basic material for their toys. However, after the WOII many toy manufacturers were searching for a new material which was much easier to shape. Since plastic was easy to form by heat and water, LEGO begun to produce plastic toys between 1949 and 1963. However, from 1963 onwards the plastic material was changed into acrylonitrile butadiene styrene (ABS), which enhanced the quality of the bricks in terms of life endurance, colour fastness and clutch power (Lauwaert, 2008, p. 222).

At the end of the 1990's, LEGO realized that product innovation was absolutely necessary to survive in a changing toy market. In these years, kids from ever earlier ages turn away from traditional toys and technological developments that made LEGO sets look boring and old fashioned. This phenomenon is also called KGOY (Kids Grow Older Younger). So, LEGO needed to extend its brand through diversifying its product range in order to extend their brand into new areas.

To overcome the problems developed in the nineties, LEGO had to escape the firm-centric view of the past and seek to co-create value with their customers through a clear focus on personalized interactions between the consumers and the company. LEGO has applied several different co-creation process. In the next section we will discuss one of these co-creation processes; the LEGO Factory.

Co-creation @ LEGO

In 2005 LEGO introduced LEGO-Factory. LEGO Factory allows you to build your own designs with the free LEGO Digital Designer software. LEGO Factory is meant for children of all ages, who can visit www.LEGOFactory.com to design, share and purchase custom models. The LEGO Factory functions through a software application called LEGO Digital Designer (LDD), with this application children can

design their own LEGO playing boxes just like professional LEGO model designers do. LEGO Factory is also designed to create a community of users who share their virtual creation with other users all around the globe. Children can view other's creations, they can modify them, they can even purchase them. Before designing the LDD software into its current version, LEGO sponsored a building contest to better understand the designs that consumers would design. In the eleven weeks that the contest lasted, more than 8.000 unique designs were created, through the BETA – version of LDD – software and the best ten builders were rewarded. The LEGO Factory is not only a nice application for the consumers, it's also beneficiary for LEGO as well. As CEO Mark Hansen states: *"With LEGO Factory we can expand beyond our 100 in-house product designers to marvel at the creativity of more than 300,000 designers worldwide. The LEGO Factory is not LEGO's factory, but it's the customer's factory*'. '*Furthermore the process from design to delivery is brought down significantly, to ranging from 48 hours to a week'.*[4]

Best practices @ LEGO

Table 3.5 shows the best practices regarding the LEGO Factory. These best practices are coupled to the DART building blocks of co-creation.

Building block	Best practices
Dialogue	On the website www.legofactory.com customers can design and order their own created models. Moreover, they can share and rate different models.
Access	Users have access to the software to develop/design new models (LDD)
Risk reduction	The customers design models, there is no design right. LEGO accepts the final responsibility for the products designed and ordered from LEGO Factory. Moreover, LEGO can refuse to produce creations (like nazi figures) that are risky for the company's reputation.
Transparency	LEGO factory shows all the models that other customers have built. But there is no real information about the business systems. There is no real information about the technologies, how LEGO makes the customer designed models.

Table 3.5: Best practices LEGO Factory

The case of Threadless

In 2000 Jack Nickell and Jacob DeHart started Threadless with only 1000 dollar seed money, which they won with an internet t-shirt design contest. Threadless is an online community centered apparel store, specifically focused on t-shirts with colorful graphics. A lot of stores print a lot of t-shirt and lose money on the ones that people do not like and therefore do not sell. T-shirts are a typical hit or miss product, its success is defined by fast changing trends, peer recognition, and finding the right distribution outlets for the specific designs (Piller, 2008). Threadless lets their customers rank the designs ahead of time and only produce the winning designs. So the t-shirts are produced only after a

[4] Interview Mark Hansen, http://www.madeforone.com, accessed 18-06-2009

sufficient number of customers have expressed their explicit willingness to buy the designs (Piller, 2008). The key to Threadless' success is that they have high margins, the t-shirts only cost around 4 dollar to produce and they sell the t-shirts for 15 dollar and more. Threadless business model is built on the care and feeding of an online community[5]. New designs are sold out fast and are only reproduced if a large enough number of additional customers commit to purchase a reprint.

Co-creation @ Threadless

As stated before Threadless is an online community centered apparel store. Members of the Threadless community submit their t-shirt designs online, these designs are put to a public vote. The winning design are printed and sold through an online store. Threadless' has a broad community including professional graphic designers but also hobbyist. According to Piller (2008) *'the company exploits a large pool of talent and ideas to get a much larger set of designs that it could afford of the design process were internalized' (p. 20).* The site gets around 1500 design submissions a week, these designs have 7 days to get scored by the community. User can evaluate each week between 400 and 600 new designs on a scale from zero (I don't like this design) to five (I love this design). On average each design is scored by around 500 people. At the end of this week the 6 best scoring designs are selected and about 1000 of each design are printed[6]. These lucky artists get each 2000 dollar in cash and merchandise and their name is printed on the particular t-shirt's label. Since the start of Threadless, over 1000 winning designs are chosen for production from more than 8000 submissions and the community is thriving with over 200000 votes submitted each day to evaluate. With this business model, Threadless exploits the commitment of users to screen, evaluate and score new designs as a powerful mechanism to reduce new product failures (Piller, 2008). Threadless uses the capabilities of customers and users to carry out the innovation process. Users do not only give their vote and preference for specific designs, they can also choose the option to purchase the design if it is chosen by the collective. *'In order to keep the competition interesting and encourage user to participate continuously, the number of given design at a given time has to be limited so that users don't get confused'* (Piller, 2008, p. 21). According to Jake Nickell, the online community is absolutely the most important thing of Threadless, because as much as the community has made Threadless grow, they could destroy it'. So the key to the site' success is keeping the community happy.
In order to keep the customers coming back, Threadless has a couple of rewards. When customers upload a photo of themselves wearing a Threadless t-shirt, they receive a store credit for 1,50 dollar. Referring a friend who ends up buying a t-shirt is will be rewarded with 3 dollar. This way of viral-

[5] http://money.cnn.com/magazines/business2/business2_archive/2007/06/01/100050978/index.htm, accessed 29-12-2009.
[6] http://www.npr.org/templates/story/story.php?storyId=6607681, accessed 29-12-2009

marketing results in 1550 t-shirt sales on a regular day. According to Piller, 'Threadless is not just offering t-shirts, it is offering an opportunity to participate in something that is exciting and interesting.

Best practices @ Threadless

Table 3.6 shows the best practices regarding Threadless. These best practices are coupled to the DART building blocks of co-creation.

Building block	Best practices
Dialogue	On the website www.threadless.com customers can submit, vote, share and buy designs.
Access	Users have access to a submission kit for templates; still the designers need Photoshop or Illustrator at home to create a design.
Risk reduction	Threadless makes use of crowd sourcing; the customers are part of an open source community. The design and the company retains all rights to the design.
Transparency	According to Threadless '*every move we make is transparent. If we screw up we apologize; if things go well, we reward people. I mean it's really just like hanging out with 400000 friends'* [7]. Threadless shows all the models that customers have designed, everybody can join. They also give a lot of information on the website how to design a t-shirt and how they work and produce the designs.

Table 3.6: Best practices Threadless

Conclusion

Resulting from the best practices of LEGO and Threadless it is possible to conclude that the community is the centre of co-creation. Threadless is completely driven by customers, every design is done by the users. Nothing is designed in-house. They also work very efficient; they only produce after a sufficient number of customer have expresses their willingness to buy the designs. And Threadless rewards the customers in a proper way with high prizes, by doing so they keep designers coming. LEGO enables every customer to design and buy their own design. While users of Threadless have to design with Photoshop and Illustrator, the users of LEGO have a direct access to an online design program. By making use of the community LEGO creates a balance between in-house and customer creativity.

By analyzing the best practices of LEGO and Threadless an answer can be provided to question 2c (see table 3.7) ***What are the strategic dimensions and parameters affecting the online business regarding strategic objectives?***

LEGO	Threadless
1. Specific software application; LDD 2. Every LEGO design can be ordered (not necessary to win a contest) 3. Building contest 4. Combination between in-house and customer creativity.	1. Crowd sourcing; community is the driving force (very transparent) 2. T-shirts are produced only after a sufficient number of customers have expressed their explicit willingness to buy the designs. 3. Contest element; high rewards

Table 3.7: Best practices LEGO and Threadless

[7] http://www.npr.org/templates/story/story.php?storyId=6607681, accessed, 29-12-2009

3.4 Operational web site issues

This paragraph will investigate research question 3b and 3c by means of the case of Styleshake.

Research question 3b ***What are the website issues regarding the application of the DART building blocks affecting the online business?*** will be answered through a single case study method analyzing the case of Styleshake. The application of the DART building blocks will be investigated through the website of Styleshake.

Research question 3c ***What are the website issues regarding the Web Experience affecting the online business?*** will also be answered through a single case study method analyzing the case of Styleshake. The Web Experience of Styleshake's website will be investigated through customers observations and interviews.

The case of Styleshake

In this thesis the case of Styleshake will be studied. Styleshake is a fashion eBrand, which allows customers to create their own individual and inspiring designs and share them with the Styleshake community.

Styleshake is selected since the company is an online apparel company that co-creates value through mass customization. Designedbymyself is comparable with Styleshake in several ways. However, there are also some perceived differences. The similarities and differences that derived from a brain storming session before the actual case study took place, can be found in appendix 3 of this thesis. Together with the findings from the literature study, the results of the brainstorm session were used in the design of this case study.

Case study design

In this thesis the single case study research design is compelling with regard to the previous research on the phenomenon, the nature of the research questions, the nature of the cases that are being studied, the role of replication, and the resources of the researcher.

First, there is little previous research conducted on the subject of this thesis, so that it can be justified that attention should be given to increasing the depth of knowledge through a single case study (Marschan-Piekkari & Welch, 2004).

Second, since the research questions deal with multiple and complicated factors, the level of complexity suggests that a single case study design is advantageous. (Yin, 2003; Marschan-Piekkari & Welch, 2004).

Third, the nature of the case has to be taken into account. According to Yin (2003), a single case is appropriate when the case is:

- The critical case in testing a well-formulated theory; the theory has specified propositions and circumstances within which the propositions are believed to be true.
- An extreme or unique case; when a case is so rare that any single case is worth documenting and analyzing.
- The representative or typical case; to capture the circumstances and conditions of an everyday or commonplace situation.
- The revelatory case; this is when an investigator has an opportunity to observe and analyze a phenomenon previously inaccessible to scientific investigation.
- A longitudinal case; this means studying the same case at two or more different points in time.

The case of Styleshake is in this thesis a critical as well as an extreme case. The theory in chapter 2 has identified suitable models to study an online apparel company and Styleshake can function as a testing case which makes the company a critical case. Furthermore, the case of Styleshake is extreme since there are very few online apparel companies mass customizing dresses (International Configurator Database, 2009).

Fourth, each case should be carefully selected so that it either predicts (1) similar results or (2) opposite results, but both for predicted reasons (Yin, 2003; Bennett, Glatter & Levačić, 1994). Three options are identified:

- Choose a case to fill theoretical categories, to extend the emerging theory; and/or,
- Choose a case to replicate previous case(s) to test the emerging theory, or,
- Choose a case that is a polar opposite to extend the emerging theory (Yin, 2003).

In this thesis Styleshake is chosen to extend emerging theory (option 1); the 4S Model is extended to the context of an online apparel company that uses mass customization strategies.

Finally, this research is conducted to write a master thesis, therefore the student has limited resources and needs to complete the study within a reasonable time. Hence, it can be justified that it is not preferred to do more than a single case to reach the required depth (Perry, 1998).

Case study procedures

In this paragraph the case study procedures that were followed are described. The investigation of the two research questions (3b and 3c) are described to enhance the validity of the study and to serve as an aide-mémoire to the investigators and the examiners. Since there are two investigators involved, this paragraph also increases the reliability, in the sense of assisting the investigators to follow the same set of procedures (Robson, 2002).

3.4.1 The application of the DART building blocks

In this section research question 3a ***What are the website issues regarding the application of the DART building blocks affecting the online business?*** will be studied empirically. Therefore, the researchers analyzed the website of Styleshake to examine in what way the company uses the DART building blocks in order to co-create value with their customers.

The building block dialogue is related to the interactivity, engagement and propensity regarding the website of Styleshake. It entails empathic understanding around experiencing what customers experience and recognizing emotional, social, and cultural context of experiences. Access is related to the provided information and tools on the website of Styleshake. Risk reduction refers to the probability of harm to the consumers. Transparency refers to information about products, technologies and business systems available on the website (Prahalad, 2004).

The data were derived from the International Configurator Database. The 85 attributes were coupled to the DART building blocks and addressed in the Styleshake case (see appendix 4) to draw conclusions regarding the application of the DART building blocks.

Conclusion

Table 3.8 gives a summarizing overview of the application of the DART building blocks on the Styleshake's website.

Dialogue	-	There is no help-button, the website doesn't give users active recommendations or possibilities. There is no automatic completion given in the designtool. The user can't interact with the visualization/garment and there is no Styleshake community.
	+	FAQ are visible from metanavigation, Styleshake gives a recommended path (in designtool) by means of a procedural (semi step-by-step) process. The system gives the user a summary after designing. Styleshake has a forum. The product price is visible during the whole design phase.
Access	-	There are no standard models offered as starting point. Contact only accessible by email, no direct contact. There is no explanation how to go through the steps. There is a zoom function, but doesn't zoom in sufficiently. There is no zoom possible at the avatar. The user has to 'scroll' vertically in order to see all other options. There is no animation on the website, the images are of a poor quality and the garments are shows in a 'white' context.
	+	Fast start designing; only go through 1 step. Customers can use process navigation to design and can use existing models (designed by other users) to further customize. Users can go one step back and forward. The loading time is fast and no plug-in is necessary. The different parts of the design are shown, consumers builds up the design out of different parts. The designed product can be bought easily online with different payment possibilities.
Risk	-	Styleshake doesn't offer the possibility to save the garment during designing. There is a need to log in, but if you want to try out, there is a quest account available. The fabrics and design are not clearly visualized, so it is possible that the actual design differs from the configuration. The designed garment is only presented from one perspective, no possibility to show it in 3D.
	+	Styleshake has a clear privacy policy, user's data is treated confidential. Styleshake offers different payment methods; payal, credit card etc.
Transparency	-	The designtool doesn't show clearly the options open for the user. The designtool is a semi step-by-step procedure but not clearly described and user-friendly. The designtool gives only the options open for that certain design and this causes confusion. The designtool doesn't show how the price is build up, only once the garment is ordered. Designedbymyself does not state what kind of transportation they use.
	+	The general terms and conditions are clearly visible on the website Styleshake throughout the whole metanavigation. The product price is visible during the whole design phase. The designtool gives only the options open -recommended path- for that certain design (depending on the previous selections). The delivery time is communicated clearly; 10 days.

Table 3.8; DART model in relation to Styleshake's 85 attributes

3.4.2 The Web Experience

In this section, research question 3b ***What are the website issues regarding the Web Experience affecting the online business?*** will be studied empirically.

The Web Experience of the website of Styleshake is studied by means of customer observations and interviews. As explained in chapter 2, the main building blocks of the Web Experience consist of functionality factors, psychological elements and content elements as visualized in table 3.9 (Constantinides, 2004).

Functionality factors		**Psychological factors**	**Content factors**	
Usability	Interactivity	Trust	Aesthetics	Marketing mix
-Convenience -Site navigation -Information architecture -Ordering/payment procedures -Search facilities and process -Site speed -Findability / accessibility	-Customer service/after sales -Interaction with company personnel -Customization -Network effects	-Transaction security -Customer data misuse -Customer data safety -Uncertainty reducing elements -Guarantees/return policy	-Design -Presentation quality -Design elements -Style/atmosphere	-Communication -Product -Fulfilment -Price -Promotion -Characteristics

Table 3.9: The building blocks of the Web Experience (Constantinides, 2004)

To explore the Web Experience factors, customer interviews were conducted aiming to identify behavioural aspects of online buyers. Next, the sampling and interview procedures will be outlined.

Procedures

A sample is a selection from the population. Particular attention needs to be given to the selection of the people sample. This is because the dependability of an interview is crucially affected by the principles or system used to select respondents, usually referred to as the sampling plan. In this study the sample was chosen in a purposive way because the researchers wanted to get insight in the Web Experience of potential customers who are designing a dress online (at the website of Styleshake). Therefore, the respondents were chosen from the environment of the researchers. Interactive and in-depth interviews were conducted. Respondents were asked to design a dress and subsequently interviewed to get an understanding of the Web Experience regarding www.styleshake.com. First, only female respondents were interviewed. Then, when the researchers did not get any new information, some male respondents were also questioned until the assumption was that the information was saturated.

The interview was divided into two parts (see appendix 6). The first part consisted of seven questions that had to be filled in before the respondents started with designing. This part included questions about the respondents' demographic characteristics and questions regarding the Internet experience, the attitude towards online shopping and the idea of designing your own dress online.

When the first part of the interview was carried out, the respondent was asked to start designing a dress on the Styleshake website. During the design process, the researchers observed the sentiment and attitude of the respondent and paid attention to see if problems occurred or if there were some things overlooked. Moreover, the time that it took the respondent to design a dress was recorded. After the design process, the respondents were asked to answer the second set of questions (see appendix 6). These questions were set up to analyse the Web Experience of the respondents. The questions were based on the building blocks of the Web Experience (see table 3.9).

Empirical results

Demographics and attitudes respondents

Table 3.10 gives an overview of the respondents' demographics and attitudes towards online shopping. The results show that the average age of the participant was 30 years, on average they had 10 years of internet experience and they needed around 13 minutes to finish designing the dress. 50% of the respondents previously bought clothes through the Internet.

Respondent no.	Gender	Age	Years Internet experience	Experience Internet buying	Time
1	F	50	15	Yes	10 m
2	F	23	10	Yes	15 m
3	F	24	10	No	10m
4	F	52	5	No	16m
5	F	24	10	Yes	30m
6	F	57	3	No	12m
7	F	24	10	Yes	8m
8	F	24	8	Yes	30m
9	F	24	15	Yes	13m
10	F	18	10	No	5m
11	M	23	11	Yes	5m
12	M	24	10	No	7m
13	M	23	12	No	15m
14	M	27	10	No	1m
A		29,8	9,9	50%	12,6m

Table 3.10: Overview demographics and attitudes respondents

Web Experience of respondents

Functionality

The element functionality was divided into *usability* and *interactivity* factors.

Regarding the **usability**, the biggest disadvantage of the website was that the users did not like the site navigation. They had to go through every category (like upper bodies and necklines) in order to finish the garment. And when they wanted to add or change something, the design was completely gone. There was no possibility to save the design during designing. For some it was not clear how they had to add the different elements on the avatar and this resulted in frustration. In relation to

that, a participant stated *'the process is not clearly described step-by-step, it would be better to use a 'wizard' to lead the customers through the design process'*. Some respondents felt there were too many choices and that these choices were dull and felt businesslike. Within the option fabrics, interviewees felt there was a lack of printed fabrics and the possibility to add notions, e.g. beads or stones. There was stated *'when you want something that is not in the predefined options, your interest is already gone'*. Some stated that there were too many options, while the above person states, that by given predefined options, people feel bounded. There were also divergent opinions on the visualisation of the avatar, some think that the visualisation could be better because the avatar and the design looks like a cut and paste job. It is not possible to zoom in and view the avatar and the designed garment in 3D. The perceived usability advantage of the website Styleshake was the possibility to design your own dress digitally; you do not have to go physically to the retail store but you can order it from your own house. There are more possibilities and options in relation to a mass produced dress in a shop and you can wear a dress that no one else has with a special design and shape. Overall, the respondents felt there were enough choice and is was easy arranged. Some respondents even thought there were too much options and that this makes it difficult to make a choice. Designing the dress goes fast and the options are handy predefined.

Concerning the **interactivity**, all the interviewees perceived the customer service '*good, okay, fine'*. The respondents especially liked the possibility of the free alternation service and the possibility to create a 'made-to-measure' dress for only 3 pound. Overall, the interviewees didn't really feel connected or interacted with Styleshake. *'What kind of interaction? I don't feel any interaction. There is no interaction'.* And another felt interaction with the avatar, the avatar shows how you want it; *'shorts on and shorts off'*. Moreover, they felt Styleshake could give a short introduction how to design your dress, there is some vagueness which is also due to the fact there is no help button. Everybody likes the idea of sharing, looking into other designs and rating other designs. The interviewees got inspiration from the other designers and thought it would be a great idea to reward winning or high scoring designs.

Psychological factors

The perceived risk of customer's data misuse on the website of Styleshake was low, everybody felt it was safe and secure to order on this website. Moreover, almost all respondents indicated that they were indifferent regarding the possibility that their data (name, address, e-mail address) could be sold to third parties.

As stated before, everybody was enthusiastic about the free alternation service; it really reduces the uncertainty of ordering a garment on the website. The interviewees did not expect that they could

return the garment, it was logical and by offering the free alternation service everybody was satisfied. *'It is one way or the other'*.

A lot of interviewees could not identify with the brand Styleshake; some just did not like the name and others did not liked the atmosphere (photo's, the fabrics and the options), while others felt it is more fun to shop in retail stores. Striking was that the respondents over 50 years felt identification and the younger respondents (15-25 years) did not identify with Styleshake. Some of respondents felt that the amount of frequently asked questions (FAQ) was poor, with the results that they had the feeling they should wait a long time for an answer by email, but most respondents thought the faq was a great summary of the most important information. Yet, quite a few respondents did not know what FAQ meant.

Content

The content element was divided into *aesthetics* and *marketing mix*.

Regarding the **aesthetics** (design, style and presentation) the interviewees expressed most criticism concerning the presentation of the fabrics and the avatar. The fabrics (also the cottons) look shiny, like they were silk. The avatar is '*flat'* and the garments are just 'pasted' on top of the flat avatar, the graphic quality is really bad. An interviewee stated: *'The avatar looks like a dull person; she has strange hands, strange shoes and those panties! Who wears such panties?'* Someone else added; *'Why isn't she laughing? You don't have to look so serious!'*. The interviewees would like the possibility to change the avatar in relation to the posture, skin tone, hair, shoes, accessories and they would like to see the avatar in 3D.

Some interviewees want tips and some kind of step-by-step guidance, to get to a design they want. *' I feel you need to have a feeling for designing, I tried all options to look whether it was what I wanted'*. Many participants even did not see the possibility to click through to a second or third page with more fabrics and dress element options. The greater part of the participants didn't felt that the layout of the website was really appealing; it was too dull, too clean and too cold, this is due to the use of a lot of white on the website. *' It may be more provocative, somewhat sexier'. ' I want it more fashionable, trendy and stylish'*. Someone stated: *'I want to have to feeling I am in a garment design studio'.*

In relation to the **marketing mix** the interviewees miss an overall introduction of the company and the website, what is possible on the website and how. Almost every respondent felt it was very good and fast that the designed garment will be delivered within 10 days. '*But the faster the better*'. And the prices were also perceived to be affordable; *' it is even comparable with retail prices and mass produced dresses'.*

As explained before in relation to the aesthetics, the presentation of the avatar and the fabrics were not satisfying to the respondents. To make the customers buy on the website, some appealing promotional actions would be a 'try-out' promotion and reduction in case of buying a second dress. *'And you have to try to keep the customers coming, by giving for example with the first order a gift voucher with reduction'*. '*Or give a gift with the ordered dress, like a bag with 'Styleshake' on it'*. And one participant stated to give existing users reduction when they introduce someone else on the website or introduce a system for saving points for every dress you order. Someone stated *' organize a competition between the best designed dresses, the one who wins get the dress for free, joehoee. Yes, then I am in!*'

In relation to the payment the participants think it is risky to pay with credit card, they prefer to pay with Ideal or PayPal.

Overall the respondents think it is important that Styleshake has to create a more competitive feeling and touch on the website, in relation to the designs and the orders. The participants did like the idea of designing their own dress. They wanted to show and tell everyone that they have designed the dress themselves. While the interviewees did like designing the dress, the greater part didn't like their eventual designed dress. Some even felt the dress was really ugly. These bad results were mostly due to the fact that the participants didn't knew how to choose the different options, did not had inspiration or just did not liked the offer of fabrics and elements.

Conclusion

In this section, research question 3c ***What are the website issues regarding the Web Experience affecting the online business?*** was studied empirically through customer observations and interviews. Table 3.11 provides a summarizing overview of the results.

Functionality factors		**Psychological factors**	**Content factors**	
Usability	Interactivity	Trust	Aesthetics	Marketing mix
-Convenience: not at all. No possibility to save the design, too much choice, bad choice options and unclear how the options work in the design program. -Site navigation: bad; a semi step-by-step procedure is needed. -Information architecture: lack of information on the designing. -Ordering/payment procedures: Good, clear options and the use of Paypal. -Search facilities and process: No search facilities -Site speed: fast enough. -Findability / accessibility: Not clear at all, vagueness in relation to designing, customer service, alternations and made-to-measure.	-Customer service/after sales: Bad customer service, there is only service by email. -Interaction with company personnel: No interaction; perception you are in charge, because you are designing. -Customization: everyone liked the possibility to design their own dress. -Network effects: everybody likes sharing, get inspiration, looking into other designs and rate other designs.	-Transaction security: Perceived security by use of PayPal. -Customer data misuse: No perceived misuse. -Customer data safety: Felt save. -Uncertainty reducing elements: By means of the free alternation service, participants felt less uncertain about ordering the dress. -Guarantees/return policy: No return, but free alternation. It is one way or the other. It is perceived obvious you cannot return a custom made dress.	-Design: professional but to simple, cool and businesslike. -Presentation quality: Fabrics looked to shiny, the avatar to flat. No zoom functions, no 3D. No possibility changing the avatar to your own taste. -Design elements: not enough options in fabrics and notions. -Style/atmosphere: too dull, too clean and too cool. Preferred more fashionable, trendy and stylish.	-Communication: No communication, participants miss tips on designing. Lack overall introduction. -Product: Bad, not as expected -Fulfilment: overall the participants liked the delivery time of 10 days; fast. -Price: perceived good; not to expensive -Promotion: respondents want try-out promotions; reductions at the first order. Or reduction for buying more dresses. Organize competitions with prices. -Characteristics: average 30 years, 10 years internet experience, designing 13 minutes and 50% ever bought clothes online.

Table 3.11: Overview of the respondents' Web Experience

3.5 Limitations of case study research and how they were handled

In this paragraph the limitations of the case study design and the tactics to counterbalance them, will be discussed.

3.5.1 Advantages and disadvantages of the case study design

Based on the discussions of the case study method by Robson (2002), Yin (2003), and Smaling (2003) advantages and disadvantages are visualized in table 3.12. The main advantages of the case study design are the depth of analysis, the high internal validity, and the flexibility. Nevertheless, the decreased statistical generalization is a disadvantage that can be increased since there is also a risk of researcher bias.

However, there are tactics that researchers can follow to control for such potential biases and to increase the quality of their research design, which will be discussed in the next section.

Advantages	Disadvantages
Holistic -depth of analysis -realistic -attention to context -extensive range of variables	Researcher Bias -observation bias -interpretation bias -cannot see everything going on -presence changes case -acceptance by subjects
Longitudinal -Develop history of case -details of process -causation and interactions -situation as it happens	
High Internal Validity -more complete understanding -direct observation of situation -multiple sources of data -triangulation of data -meaningful to subjects	Low External Validity -low generality -little control over phenomenon -comparative analysis difficult -representativeness of case -difficult to replicate
Adaptive -questions can be changed as case develops -methods can be changed -data sources can be changed	Costly -research time -volume of data -analysis of data

Table 3.12: Advantages and disadvantages case study design

3.5.2 Quality of research design

Any research design, including the single case study design, is supposed to represent a logical set of statements. Therefore, one can judge the quality of case study design according to the four tests that have been described in numerous text books concerning social science (Babbie, 2007; Bennett, Glatter & Levačić, 1994). These four tests are:

- Construct validity; establishing correct operational measures for the concepts being studied
- Internal validity; establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships.
- External validity; establishing the domain to which a study's findings can be generalized.

- Reliability; demonstrating that the operations of a study can be repeated, with the same results.

Table 3.13 lists those four tests and the recommended case study tactics, as well as the cross reference to the phase of research when the tactic is to be used. The tactics that have to be used in dealing with these tests were applied while conducting the case study and not just at the beginning.

Tests	Case study tactic	Phase of research in which tactic occurs
Construct validity	Use multiple sources of evidence Establish chain of evidence[8] Have a key informants review draft case study report	Data collection Data collection Composition
Internal validity	Establish chain of evidence Do pattern-matching[9] Do explanation-building[10] Address rival, contradictory explanations Use logic models[11]	Data analysis Data analysis Data analysis Data analysis Data collection
External validity	Use theory in single-case studies Use replication logic in multiple-case studies	Research design Research design
Reliability	Use logic models Use replication logic Use case study protocol[12] Develop case study database	Data collection Data collection Composition Data collection

Table 3.13: Case study tactics for four design tests (derived from Yin, 2003)

3.5.3 Tactics used to enhance the quality

Research design

In the research design phase, a theoretical framework was developed based on the three pillars e-commerce, co-creation through mass customization and fashion. This serves the theoretical replication and the external validity.

Composition

During the composition of the research, key informants (Henk Kroon and Efthymios Constantinides) have reviewed several draft versions which increased the construct validity. Moreover, a case study protocol was developed (see paragraph 3.2) during the composition and used when data was collected. This increased the reliability of this research.

[8] Within this procedure the external observer follows the derivation of evidence from the initial research questions to the case study conclusions.

[9] With this technique one compares the empirically based pattern with a predicted one (Trochim, 1989).

[10] This is a form of pattern-matching; here the analysis of the case study affects the explanation of the case.

[11] Within this model all the research steps are clearly defined within theory and displayed.

[12] This is important to develop in the first stages of a case study; it describes the rules and procedures of your case study.

Data collection

In the data collection phase, the researchers increased the construct validity of the study using multiple sources of evidence (websites, the International Configurator Database, customers observations and interviews, articles, etc.). Moreover, a chain of evidence was developed since the researchers followed the derivation of evidence from the initial research questions to the case study conclusions.

To increase the internal validity and reliablity, logic models were used through defining and displaying all research steps within theory using the 4S Web Marketing Mix Model as a guide.

The reliability was also enhanced through the use of replication logic since the case was chosen to fill theoretical categories, extending the emerging theory. Moreover, a case study database was developed.

Data analysis

During the data analysis the internal validity was enhanced by establishing a chain of evidence as explained before. Moreover, since the case study was conducted to fill the research gap that emerged from the literature and several models were used to fill in the 4S Model, pattern matching was performed. Third, explanation-building was carried out by explaining the case based on the analysis the researchers conducted.

Finally, during the whole research the internal validity, the construct validity, and reliability were enhanced because this study was conducted by two researchers which is a great advantage to prevent researcher bias.

3.6 Conclusion

Chapter 2 outlined and justified the models that are used to answer the research questions. However, the existing literature leaves four research gaps. These gaps ware identified in paragraph 2.2. In this chapter these research gaps were studied empirically to answer research question 2a, 2c, 3b and 3c. Research questions 2a and 2c were studied through multiple case study methodologies. Research questions 3a and 3b were studied through single case study methods. The research gaps and research questions, the methodologies, the data collection methods and the results of the analyses are summarized in table 3.14 below.

Research question	**Research gap**	**Addressed through**	**Methodology**	**Data collection method(s)**
2a: What are the strategic dimensions and parameters in the business environment affecting the online business?	Ignorance of the competitive environment	Drawing a strategy canvas	Multiple case study	Desk, web research and customer survey
2c: What are the strategic dimensions and parameters affecting the online business regarding strategic objectives?	Ignorance of best practice(s)	Best-in-class benchmark analysis of LEGO and Threadless	Multiple case study	Desk and web research
3a: What are the website issues regarding the application of the DART building blocks affecting the online business?	Ignorance of the DART building blocks	Analyzing DART building blocks of www.styleshake.com	Single case study	Desk research, website analysis
3b: What are the website issues regarding the Web Experience affecting the online business?	Ignorance of the Web Experience	Analyzing Web Experience of www.styleshake.com	Single case study	Customer observations and interviews

Table 3.14: Identifying and addressing research gaps

In the following chapter the results of this empirical study will be analyzed and applied to Designedbymyself to ultimately apply them to the strategic and marketing plan of Designedbymyself.

Chapter 4 Data analysis

'To acquire knowledge, one must study; but to acquire wisdom, one must observe'- Marilyn vos Savant

4.1 Introduction

In this chapter there will be elaborated on the data collected in chapter 3. The results will be analysed and interpreted to address the research problem: **Developing a strategic and marketing plan for a newly set-up online business for customized women apparel.**

The findings of this chapter will be applied to the strategic and marketing plan of Designedbymyself in chapter 5.

4.2 Strategic issues

4.2.1 Comparing providers' offerings and customers' needs

In chapter 3 figure 3.2, the strategic group map of Styleshake, Dress by Design and Studio 28 Couture was drawn. This map gives an indication of how the three competitors of Designedbymyself are positioned in terms of amount of choices, price, geographical coverage, and customer service and customer interaction.

The concept of the strategic group map in this context is useful in several ways:

- It visualizes the strong and weak points of the competitors in the strategic group.
- It helps understand who are the most direct competitors of Designedbymyself.
- It helps identifying strategic gaps for Designedbymyself.

The strength of Styleshake is the low price. Furthermore, Styleshake delivers to Western Europe, USA, Canada and Australia which means a average geographical coverage. The amount of choices were also average. Finally, the customer service and customer interaction were below average, since there was low perceived interaction and the customer service did not respond to an email within the promised 24 hours, in fact they did not respond at all.

Concerning Dress by Design there can be stated that this company is relatively strong on all the terms except for the price. The price of an average dress is US$250-US$300 which is expensive in relation to mass produced and even design dresses in retail stores. Moreover, the price is also the highest in this particular strategic group. The customer service of Dress by Design responded to an e-mail within several hours which is enhancing the score. However, the customer interaction was very poor since the design tool is of a very low quality.

Studio 28 Couture is the weakest competitor in this strategic group. The company scores low on every point. First, the customer service and interaction was worse than Dress by Design and Styleshake. Second, Studio 28 Couture only delivers within the USA. Third, the quality of the design

tool was very low. Finally, the price was relatively high and especially regarding the low scores on all the other items, the price of US$200-US$250 is too high.

The conclusion that can be drawn from figure 3.2 in chapter 3 is that the most direct competitors of Designedbymyself will be Dress by Design and Styleshake.

Strategic gaps can be identified in customer service and customer interaction. In other words, if Designedbymyself can obtain a significant better score on this item, it will create more value and the strategic position will be enhanced. Table 4.1 gives an overview of the intended amount of choices, geographical coverage, customer service and customer interaction, and price of Designedbymyself.

Variable group	Variable	Styleshake	Dress by Design	Studio 28 Couture	Designedbymyself
Amount of choices	Extent of product diversity	Dresses, skirts, tops, accessories	Dresses	Dresses	**Dresses**
	Extent of fabric diversity	Silk, cotton, linen	Wool, jersey, cotton, silk, chiffon, tweed, velvet, linen, satin	Jersey, cotton	**Jersey**
	Extent of color and print diversity	29 colors, no prints	211 different colors and prints	17 colors, 11 prints	**11 colours, 8 prints**
	Extent of element diversity	Upper body (8), neckline (25), sleeves (12), waist panel (2), lower part (19)	Whole dress style (8), neckline (9), sleeve (6) and length of dress (3)	Top style (4), skirt style (5), top details (3), skirt details (3)	**Standard: 5 styles Upper body (5), neckline (14), sleeves (10), waist (8), lower part (8), notions (8)**
	Number of steps to finalize design	7	4	6	**11**
Geographical coverage	Extent of geographical coverage	Western Europe, USA, Canada, Australia	Globally	USA	**Globally**
	Market segments served	Women age 35-60, bridesmaids,	Women around the world, age 40-70,	American women 20-30,	**(Young) women age 15-40**
Customer service and customer Interaction	Made to measure	Yes	Yes	Yes	**Yes**
	Free alteration service	Yes	Yes	Yes	**No**
	Money back	No	Yes	No	**No**
	Shipping time	2 weeks	3-4 weeks	3 weeks	**Asap**[13]
	Forum	No	No	No	**Yes**
	Rating possibility	Yes	No	No	**Yes**
	Client testimonials	Yes	Yes	No	**Yes**
	Number of payment methods	Credit card (9) and paypal	Credit card (4)	Check out malfunction	**Credit card, PayPal, ideal, bank transfer**
Price	Prices	$75-$125	$250-$300	$200-$250	**$150-$200**

Table 4.1: strategic group map Designedbymyself

Based on the values of the variables in table 4.1, Designedbymyself can be drawn in the strategic group map. The intended scores of Designedbymyself are drawn into the table in pink.

[13] For domestic orders: max 7 days, for international orders it depends on the location of the customer

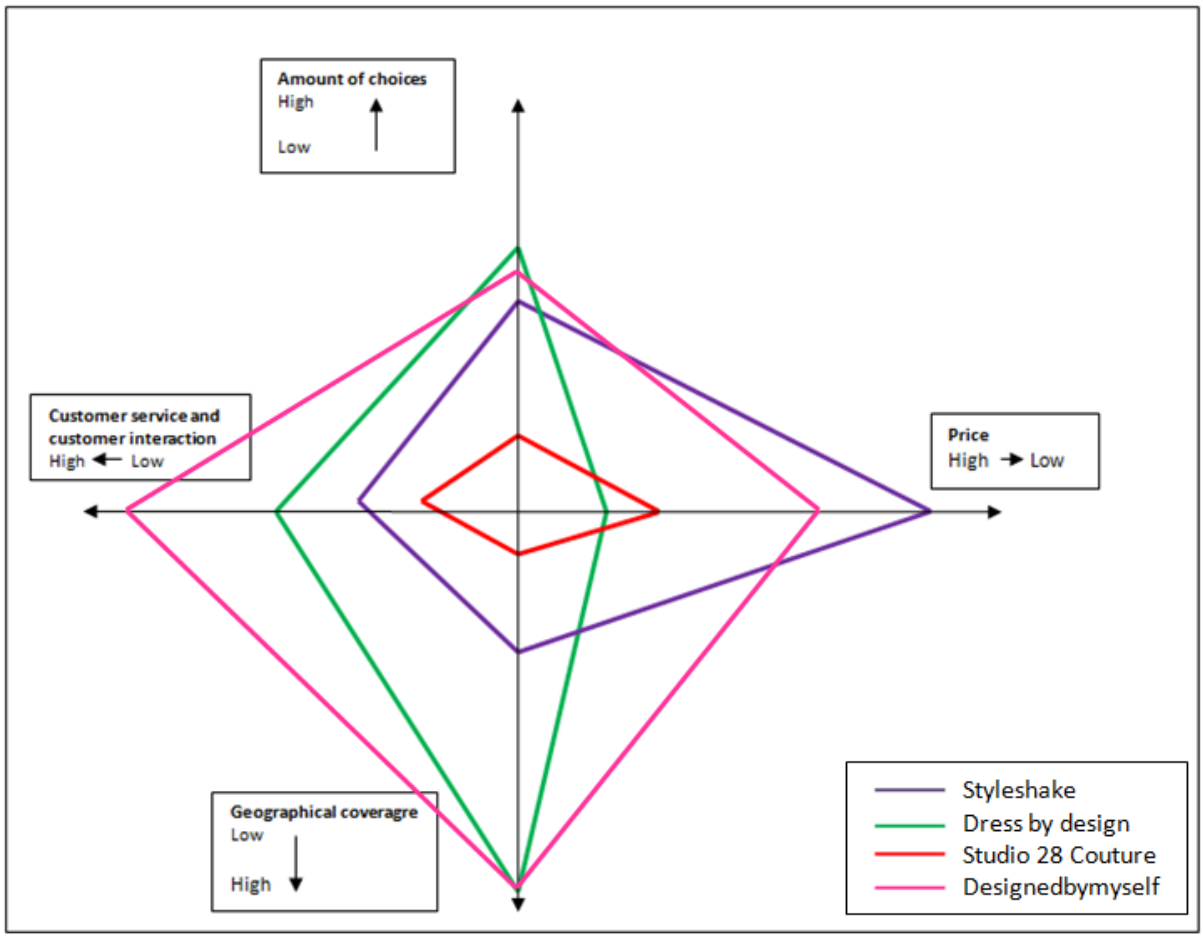


Figure 4.1: Strategic group map

Figure 4.1 shows that Designedbymyself outperforms the three competitors by offering significantly more customer service and customer interaction. As argued before, the price is higher than the price charged by Styleshake. This can be justified because Designedbymyself creates much more value for the customers than the competition, therefore the price can be set higher.

Understanding what customers value

The strategy canvas where the horizontal axis represents the factors that customers value and the vertical axis plots the rating of the competitors regarding these factors are drawn in figure 4.2.

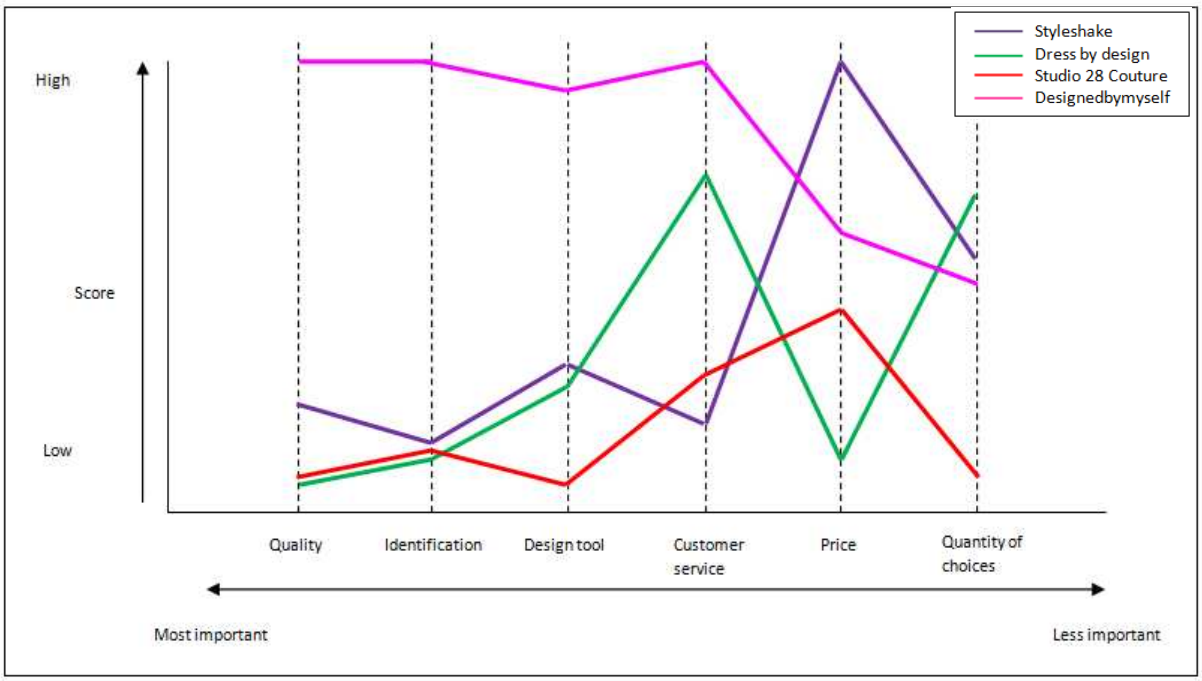


Figure 4.2: Strategy canvas of the strategic group of Styleshake, Dress by Design, Studio 28 Couture and Designedbymyself

The strategy canvas in figure 4.2 illustrates that the quality factor (Quality of designed product: does it meet you expectations?), the identification factor (Identification: do you identify with the website and the brand / Do you want to be seen with the garment?) and the design tool (is the design tool functional and user friendly?) were perceived as particularly important. Thus, these factors will determine which provider is preferred by the respondents. So, from the companies' viewpoint, these are the critical success factors. If Designedbymyself wants to obtain a competitive advantage, the company has to score substantial better than its three competitors. This can be accomplished since the competitors are not performing well at all on the three critical success factors, so there are some strategic gaps identified from this strategy canvas.

The pink line represents the intended scores of Designedbymyself in the strategy canvas.

4.2.2 Best practice (best in class benchmark)

Resulting from the best practices of LEGO and Threadless that were analyzed in paragraph 3.3.2 there was concluded that the community is the centre of co-creation. The best practices that were deducted from the two cases are visualized in table 4.2.

LEGO	Threadless
1.Specific software application; LDD 2.Every LEGO design can be ordered (not necessary to win a contest) 3.Building contest **4.Combination between in-house and customer creativity.**	**1.Crowd sourcing; community is the driving force (very transparent)** 2.T-shirts are produced only after a sufficient number of customers have expressed their explicit willingness to buy the designs. **3.Contest element; high rewards**

Table 4.2: Best practices LEGO and Threadless

The bold points will be used by Designedbymyself.

- Like LEGO every design can be ordered. This means there is no sufficient number of customers, which express their willingness to buy the design, needed. Neither is it necessary to win a design competition.
- Also like LEGO, there will be thematic contests like 'design your African dress'. These competitions are mainly used as a marketing tool.
- These competitions are an example of crowd sourcing (like Threadless). Designedbymyself also wants to use the community as the driving force. The community consists of users that can design and order, only order, or only design a dress. Moreover, the user community can vote or rate designs that are competing in a thematic contest.
- Finally, the winning design will be offered online for a special price and the designer is rewarded with a percentage of the sales.

4.3 Operational and web site issues

4.3.1 The application of the DART building blocks

In chapter 3 the researchers analyzed the website of Styleshake to examine in what way the company applies the DART building blocks in order to co-create value with their customers. In the previous paragraph it became clear that the website of Styleshake is not appropriately and sufficiently applying the four building blocks of the DART model (dialogue, access, risk and transparency). In table 4.3 the poor application of the DART building blocks by Styleshake is summarized.

Dialogue	-	There is no help-button, the website doesn't give users active recommendations or possibilities. There is no automatic completion given in the designtool. The user can't interact with the visualization/garment and there is no Styleshake community.
Access	-	There are no standard models offered as starting point. Contact only accessible by email, no direct contact. There is no explanation how to go through the steps. There is a zoom function, but doesn't zoom in sufficiently. There is no zoom possible at the avatar. The user has to 'scroll' vertically in order to see all other options. There is no animation on the website, the images are of a poor quality and the garments are shows in a 'white' context.
Risk	-	Styleshake doesn't offer the possibility to save the garment during designing. There is a need to log in, but if you want to try out, there is a quest account available. The fabrics and design are not clearly visualized, so it is possible that the actual design differs from the configuration. The designed garment is only presented from one perspective, no possibility to show it in 3D.
Transparency	-	The designtool doesn't show clearly the options open for the user. The designtool is a semi step-by-step procedure but not clearly described and user-friendly. The designtool gives only the options open for that certain design and this causes confusion. The designtool doesn't show how the price is build up, only once the garment is ordered. Designedbymyself does not state what kind of transportation they use.

Table 4.3: Poor application of DART building blocks by Styleshake

Complementary to table xx above, the 85 attributes (of the configurator database) are analyzed and filled in for Designedbymyself (see appendix 4). These 85 attributes are coupled to the DART building blocks and by doing so Designedbymyself takes away the disadvantages mentioned at Styleshake. Table 4.4 shows the positive effects of Designedbymyself in relation to the DART building blocks.

Dialogue	Designedbymyself will offer a help-button, the website does give users active recommendations or possibilities. The user can interact with the avatar (by customizing the looks and sizes) and the garment by means of 3D views. And there will be a Designedbymyself community and forum. FAQ are visible from meta navigation, Designedbymyself will give a recommended path (in design tool) by means of a procedural (semi step-by-step) process. A wizard is used (as an introduction) and as a guide during designing. The system gives the user a summary after designing. The product price is visible during the whole design process.
Access	There are standard models offered as starting point. Contact is accessible by email or telephone. There is a clear wizard that leads the customers through the design steps. There is a zoom function and a 3D tool. The user does not have to scroll vertically; all options are stated at the first page. There is animation on the website by means of customizing the avatar and 3D modelling the garments on the avatar. Customers can start designing fast; only go through 1 step. Customers can use process navigation to design and can use existing models (designed by other users and standard models) to further customize. Users can go one step back and forward and are able to save the dress during the designing. The loading time is fast and there is plug-in necessary for online rendering the 3D model. The different parts of the design are shown, consumers builds up the design out of different parts. The designed product can be bought easily online with different payment possibilities.
Risk	Designedbymyself offers the possibility to save the garment during designing. There is a need to log in, in order to save customers' designs and measurements (avatar). The fabrics and design are clearly visualized by means of 3D, and by customizing the avatar-on the customer's specifications- customers can see how the dresses will look on them. Designedbymyself has a clear privacy policy, user's data is treated confidential. Designedbymyself will offer different payment methods; PayPal, credit card etc.
Transparency	The design tool shows clearly the options open for the user. The design tool is a semi step-by-step procedure but is user-friendly by means of a help button and a wizard. The design tool shows clearly how the prices of the dresses are build up (within the different options) and the product price is visible during the whole design phase. The general terms and conditions are clearly visible on the website Designedbymyself throughout the whole meta navigation. The design tool gives all options open (visible) for the customers. The delivery time is communicated clearly; 7 days.

Table 4.4; DART building blocks for Designedbymyself

Conclusion

To counterbalance the poor application of the DART building blocks by Styleshake that was identified in chapter 3, this paragraph focused on the right application of the building blocks by Designedbymyself. Table 4.5 summarizes the outcomes.

Dialogue	Access	Risk	Transparency
-active recommendations -interaction avatar (3D) -community and forum -FAQ through meta navigation -introduction to designing	-standard models available -direct contact possible -user friendly interface -start design after one step	-save design -customization and visualization of garment by 3D -customization of 3D avatar -clear privacy policy -different payment methods	- semi step-by-step procedure -help button -visible price structure -clearly communicated delivery time

Table 4.5: summary DART building blocks by Designedbymyself

4.3.2 The Web Experience

To analyse the Web Experience of the Styleshake website, the researchers conducted customer interviews. The outcomes of these interviews regarding the building blocks of the Web Experience are discussed next.

Functionality factors

In chapter 3 (table 3.11) it became clear that the usability of the Styleshake website was perceived very poor by the respondents in this research. The website is not user-friendly since there is not enough information and accessibility is perceived low. A positive element is the site speed. The perceived interactivity was twofold. At the one hand customers liked the customization and the possibility of sharing and getting inspiration from other designs. At the other hand, this customer interaction should go further by e.g. a forum so that customers can interact with each other and help each other. Moreover, there was also a lack of interaction between the customer and the company. Finally the only possibility to contact the company was through email, which was perceived as not satisfactory.

Psychological factors

The respondents in this study perceived the website of Styleshake trustworthy. They perceived the transaction as secure. There was no perceived risk of data misuse and the free alteration service was regarded positively and risk reducing. The fact that there was no refund, was considered logical.

Content factors

The main criticism regarding the aesthetics concerned the style and atmosphere on the website and the avatar. The style and atmosphere on the website was perceived boring and cold. Respondents would like to see a more fashionable, trendy and stylish website. The main comment on the avatar was that she was dull and there is no possibility to customize her in terms of skin, eye and hair. According to the respondents the website looks professional, but this is not enough, it should be more stylish and fashionable.

Regarding the marketing mix the respondents perceived the price as slightly low and okay. However, there was a lack of communication and the final product resulted in dissatisfaction and frustration. Moreover, the respondents missed promotions like a design competition, reductions or additional gifts like a bag.

From the results of the customer interviews the researchers decided to design the building blocks of the Web Experience according to the potential customers wishes. The exact description of the building blocks of the Web Experience on Designedbymyself.com can be found below.

Functionality factors

Usability

In relation to the convenience of the website, Designedbymyself's designtool will be synoptic and user-friendly. Designs can be saved in the customer profile and only the possible options are visualized. The design process will be a semi-step-by-step, meaning that the design wizard provides options and a logical pathway. However, the design will not be lost when the customer changes an already chosen element of the design.

Designedbymyself 's website will offer more information about the company itself and more information regarding the design process e.g. an introductionary overview of the design process. The web site will also emphasize the possibility of viewing other designs and customizing them. Designedbymyself will offer several payment methods: credit card, paypal and bank transfer through Ideal. Designedbymyself will offer the customer good search facilities and process, the website will offer an information avatar (like Anna from Ikea[14]) which answers questions of customers. This question-answer-avatar is somewhat hipper and more fashionable than Anna (in the style of Hed Kandi[15]). The website will be highly accessible, by means of clear shortcuts to important information on the designing, production, delivery and customer service.

Interactivity

The focus of Designedbymyself's will be on interactivity. The website will offer interactive customer service in the form of the question/answer avatar and the customizable mannequin avatar. Moreover, customers can get advice regarding the most suitable colours and models based on their skin, hair and eye colour and figure. As explained before, the avatar is customizable, so the customer can see how the dress actually will look like. The designtool will offer a wide assortment of printed fabrics to choose from. Moreover, customers can begin with a dress and customize it so they do not have to start from scratch. A nice idea would be to add a 'random' button that customizes the dress in a random way combining all kinds of different fabrics and elements so that the customer can click the button several times to view the possibilities. Finally, the customer can also customize the brand by indicating his/her name, which will be sewn into the label of the garment.

[14] http://193.108.42.79/ikea-nl/cgi-bin/ikea-nl.cgi, accessed 16 December 2009
[15] http://www.popart.ch/fileadmin/global/events/diverse/HedKandi_600x450.jp, accessed 16 December 2009

In order to retain customers, it is important they build a relationship with the company/website. A forum where customers talk to each other, share ideas and designs and help each other can create such a relationship even without much effort from the company itself. Moreover, a 'gallery' where designs are showed seems a very good idea to create a network effect.

Psychological factors

Trust

In order to build trust, many payment methods like PayPal, credit card (at least 10 sorts), and Ideal (bank transfer) are used. By outsourcing the payment to a reliable third party, the security will be guaranteed. As the interviews showed, in relation to the website of Styleshake, it seems that customers do not worry about data misuse[16]. However, Designedbymyself will not sell customer data to third parties and this will be stated also on the website.

Designedbymyself will reduce uncertainty for the customers to order a garment, based on their own measurements/sizes and the possibility to virtually try-on the designed garment on the customized avatar. Since the means of production of Designedbymyself is very dependable and trustable, there is no need to offer a free alteration service. The measurement points that the customer has to provide, have to be explicated thoroughly on the website. If the measurements are accurately taken, the dress will fit exactly.

Content factors

Aesthetics

The design of the website of Styleshake will be clear and fashionable. The style will be trendy and stylish (in the style of Hed Kandi). But once the customers log in, they are able to customize their own web page.

The quality of designtool and the designed garment will be impeccable. There will be a zoom function to zoom in on the fabrics and on the designed garment. The avatar will be customizable to the customer's skin, hair, eyes and figure. Because the avatar and the garment are shown in 3D, customers are able to view it 360 degrees.

The design tool will offer 19 (jersey) fabrics, 11 colours and 8 prints. There will be multiple notions like beads, stones, buttons, studs, paillets, applications etc. With such a wide assortment countless options and designs can be made.

In order to attract customers and give the customers inspiration, the style of the website has to be fashionable. The customer has to identify herself with the style and therefore with the website and

[16] Interviews conducted November 2009

the company. The style and atmosphere have to be inviting to the customer. The customer has to get a good feeling when entering the website.

Marketing Mix

Because the online design process would probably be new for a lot of customers, the website will show a short introduction regarding the design process. There will be also tips and advices on the colours and models that fits the particular customer's attributes. Moreover, there will be a question/answer avatar that will answer the questions of customers.

It is important that the ultimate design has to be very satisfying for the customer. The end product will be exactly what is expected because the online product presentation will be accurate. Such an order fulfilment will be achieved by interacting with the customers before and during the design process. Customers can get advice regarding the colours and models of garment that suit their particular skin, hair and eye colour and their body figure. Moreover, suggestions of other customers will be yielded to inspire the less creative customers.

As the interview result showed, the price that Styleshake charges, was perceived good. However, from the interviews it became also clear that the respondents were willing to pay more if their needs were fulfilled. Therefore, Designedbymyself will charge a higher price ($150-$200).

In order to attract and retain customers, Designedbymyself will offer attractive promotions. To attract customers Designedbymyself will offer a first order reduction of 10%. To retain customers Designedbymyself will attempt to build a lasting relationship with the customers by organizing design competitions. Moreover, when customers order 2 dresses they can get discount. To extend the customer base, every customer that recommends Designedbymyself to a friend which will order a garment subsequently, will get a coupon worth $25.

Conclusion

Resulting from the customer interviews regarding the website of Styleshake, the factors of the Web Experience on the planned website of Designedbymyself are addressed in table 4.6.

Functionality factors		Psychological factors	Content factors	
Usability	**Interactivity**	**Trust**	**Aesthetics**	**Marketing mix**
-Convenience: synoptic and user-friendly design tool. (saving, customer profile) -Site navigation: a semi step-by-step procedure -Information architecture: More information about the company, the design process and the possibility to view other designs -Ordering/payment procedures: credit cards, Paypal, and Ideal. -Search facilities and process: presence of an information (Q&A) avatar -Site speed: At least as fast as the styleshake website . -Findability / accessibility: Clear shortcuts to important information	-Customer service/after sales: interaction with the company, customizable mannequin avatar, and customer advice -Interaction with company personnel: interaction with the company through Q&A avatar and clear information -Customization: Customizable avatar customers can begin with a dress and customize it, a 'random' button and customization of brand -Network effects: customer forum, a 'gallery' where designs are showed	-Transaction security: Many payment methods, outsourcing the payment to a reliable third party. -Customer data misuse: No perceived misuse but Designedbymyself will not sell customer data to third parties and this will be stated also on the website. -Customer data safety: See above -Uncertainty reducing elements: Through a thorough explanation of measurement point, the dress will be perfectly fitting. -Guarantees/return policy: No return, since the fit of the dress will be perfect	-Design: clear and fashionable. The style will be trendy and stylish in the style of Hed Kandi. -Presentation quality: a zoom function, The avatar will be customizable to the customer's skin, hair, eyes and figure. -Design elements: 19 (jersey) fabrics, 11 colours and 8 prints. There will be multiple notions like beads, stones, buttons, studs, paillets, applications etc. -Style/atmosphere: fashionable to enable customer identification with the company.	-Communication: introduction regarding the design process, tips and advices for customers, a question/answer avatar -Product: The end product will be exactly what is expected because the online product presentation will be accurate. -Fulfilment: Fulfilment is achieved by interacting with the customers before and during the design process and suggestions of other customers will be yielded to inspire the less creative customers. -Price: $150-$200 -Promotion: attractive promotions to attract and retain customers. first order reduction of 10%, design competitions, recommendation discount.

Table 4.6: Web Experience factors of the website www.Designedbymyself.com

4.4 Conclusion

In this paragraph the results of the empirical investigation conducted in chapter 3 are interpreted for Designedbymyself. Paragraph 4.3.1 focused on the DART building blocks. In table 4.7 the building blocks of www.Designedbymyself.com are summarized.

Dialogue	Access	Risk	Transparency
-active recommendations -interaction avatar (3D) -community and forum -FAQ through meta navigation -introduction to designing	-standard models available -direct contact possible -user friendly interface -start design after one step	-save design -customization and visualization of garment by 3D -customization of 3D avatar -clear privacy policy -different payment methods	-semi step-by-step procedure -help button -visible price structure -clearly communicated delivery time

Table 4.7: Summary of the DART building blocks of the website www.Designedbymyself.com

In paragraph 4.3.2 the focus was on the building blocks of the Web Experience. Results from the customer interviews were interpreted for the website design of Designedbymyself. Table 4.8 summarizes the functionality, psychological, and content factors of www.Designedbymyself.com.

Functionality factors		Psychological factors	Content factors	
Usability	**Interactivity**	**Trust**	**Aesthetics**	**Marketing mix**
synoptic and user-friendly design tool. (saving, customer profile) semi step-by-step procedure information about the company, the design process and the possibility to view other designs credit cards, Paypal, and Ideal payment possible an information (Q&A) avatar at least as fast as the styleshake website . Clear shortcuts to important information	customizable mannequin avatar, customer advice interaction with the company through Q&A avatar Customizable avatar, customers can begin with a dress and customize it, a 'random' button and customization of brand customer forum, a 'gallery'	Many payment methods, outsourcing the payment to a reliable third party. Designedbymyself will not sell customer data to third parties and this will be stated also on the website. Through a thorough explanation of measurement methods, the dress will be perfectly fitting. No return, since the fit of the dress will be perfect	The style will be trendy and stylish in the style of Hed Kandi. a zoom function, the avatar will be customizable to the customer's skin, hair, eyes and figure. 19 fabrics, 11 colours and 8 prints, multiple notions like beads, stones, buttons, studs, paillets, applications fashionable style to enable customer identification	introduction regarding the design process, tips, advices, a Q&A avatar The end product will be exactly what is expected because of the online product presentation Fulfilment is achieved by interacting with the customers and suggestions of other customers will be yielded Price: $150-$200 attractive promotions to attract and retain customers (first order reduction of 10%, design competitions, recommendation discount)

Table 4.8: Summary of the Web Experience factors of the website www.Designedbymyself.com

Chapter 5 Conclusion

'An idea that is developed and put into action is more important than an idea that exists only as an idea.' – Buddha

5.1 Introduction

To understand the structure and outline of this chapter, a jigsaw puzzle analogy is used. This research began like a jumbled jigsaw puzzle about the research problem. In chapter 2 the researchers started putting the pieces together by means of a literature review to uncover a picture. However, after the literature review research issues arose, showing that some pieces are still missing and so the complete picture cannot be known yet. In the chapters 3 and 4 the researchers looked for the missing pieces and the few newly found pieces were matched together. Finally, chapter 5 returns to the puzzle, briefly summarizing what the picture looked like at the end of chapter 2 and then explaining how the new and the old pieces fit to make the whole picture clear (Perry, 1998).

5.2 Conclusions about each research question

In this section conclusions will be drawn regarding each research issue in order to answer the sixth research question: ***How will the strategic and marketing plan of Designedbymyself look like?*** and to reach the goal of this thesis: **Design a web strategic and marketing plan for the newly set up company Designedbymyself.**

5.2.1 Strategic issues

The investigation of the strategic issues formulated an answer on the second sub research question: ***What are the strategic dimensions and parameters affecting the online business?*** This investigation was divided into four parts, discussing the four strategic issues.

Strategic issue #1: Business environment

The first section concerned the business environment. The business environment consists of three layers. Since the literature was sufficient, the first two (macro and industry environment) were dealt with in chapter 2. However, the existing literature could not provide enough information regarding the third layer (competitive environment) to answer research question 2a ***What are the strategic dimensions and parameters in the business environment affecting the online business?*** This was the first research gap. This research gap was addressed in chapter 3 by analyzing competitors' offerings and customers' needs.

Research question 2a was solved by drawing a strategy canvas comparing providers' offerings and customers' needs. From the strategy canvas was concluded that the competitive group of Designedbymyself (Dress by Design, Studio 28 Couture and Styleshake) is not focusing on the factors that are valued by customers. Hence, by focusing on these factors (quality, identification, and design tool) Designedbymyself will reach a competitive advantage.

Strategic issue #2: Internal analysis

The second section concerned the internal analysis. To picture and identify the value creation of an online company that co-creates value through mass customization, the value chain can be drawn. The value chain for Designedbymyself is drawn below.

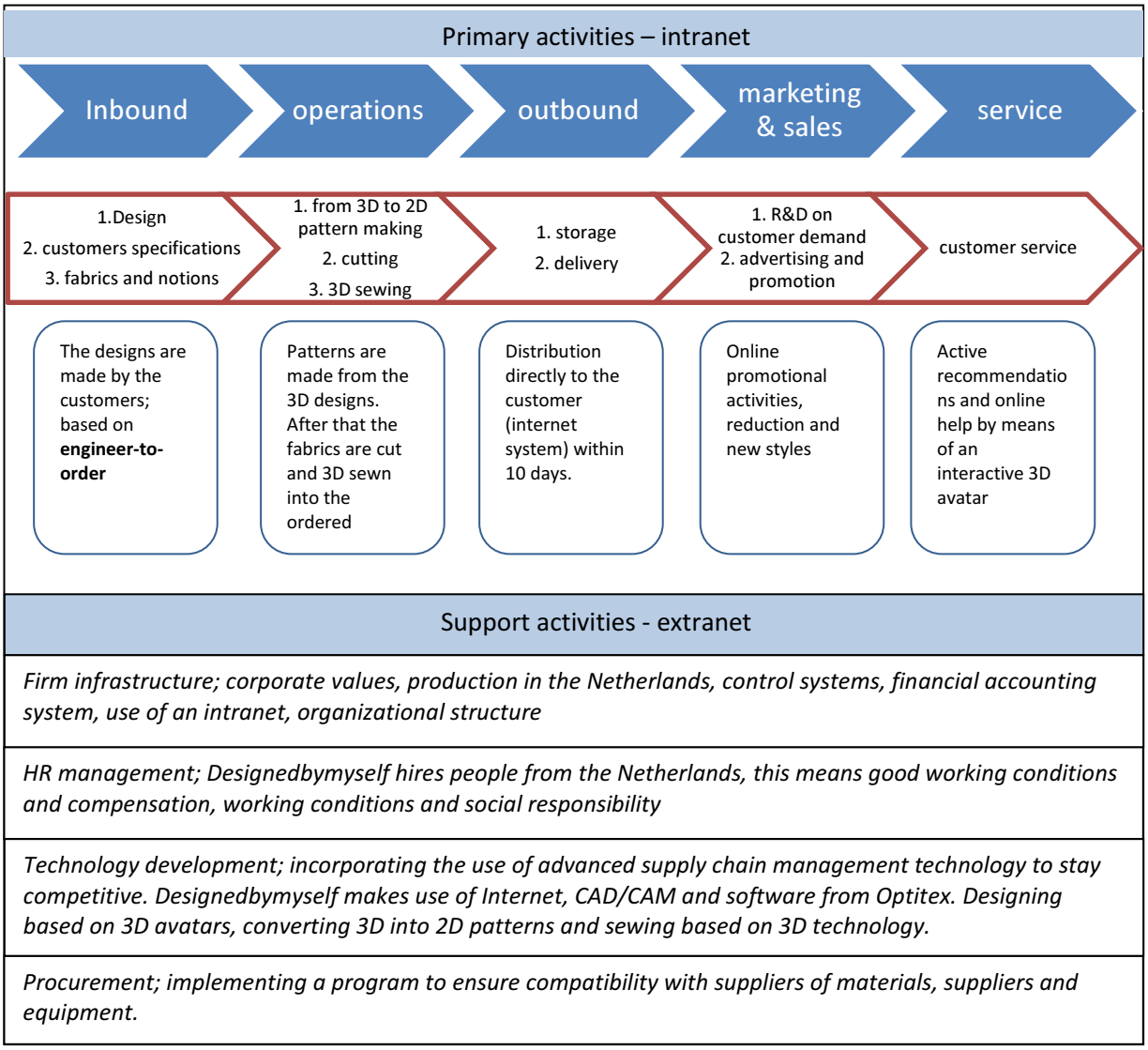


Figure 5.1; Value chain Designedbymyself

As described in the value chain (figure 5.1), Designedbymyself is planned to make use of 3D sewing machines. Leapfrog is currently working on the development of robotic sewing machines and other automatic production machines (see figure 5.2 and 5.3). Leapfrog is working on a robotic sewing head based on the concept of spherical sewing. The creation of an active reconfigurable mould would enable to precisely reproduce the volume and shape of the garments by translating novel surface generation strategies into software algorithms to create temporary 3D surfaces to drive volume and shape configuration in the mould.

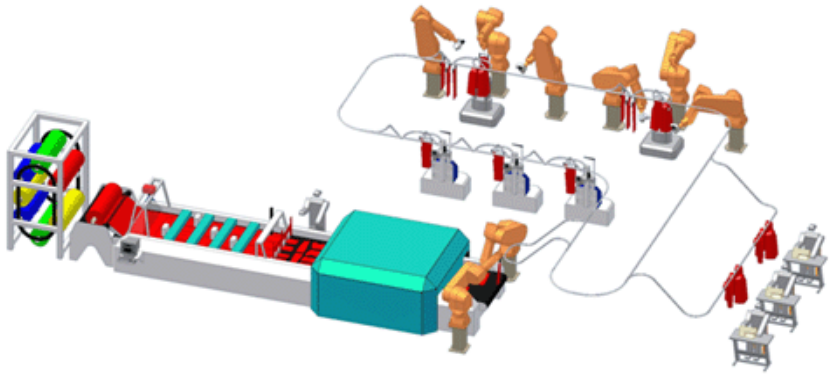


Figure 5.2: strategic concept of the innovative garment production (leapfrog) [17]

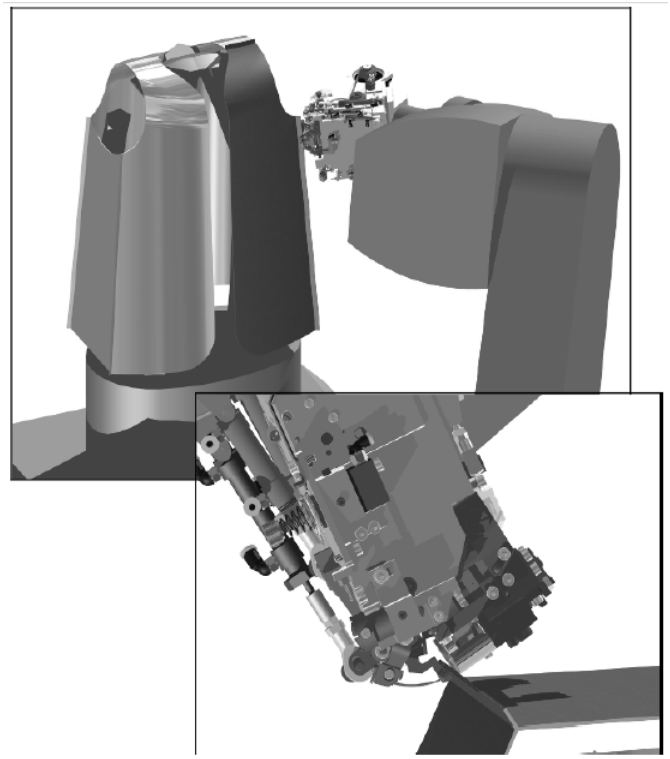


Figure 5.3: close-up of robotic sewing technology

[17] http://www.leapfrog-eu.org/LeapfrogIP/main.asp?pg=researchModuleB, accessed 19 January 2010

Hence, research question 2b ***What are the internal strategic dimensions and parameters affecting the online business?*** is addressed (see figure 5.1). For further information on the internal processes of Designedbymyself see appendix 6.

Strategic issue #3: Strategic objectives

The third section concerned strategic objectives that are based on the strategic position of a company. There are three ways to analyze the strategic position of a firm compared to other firms. The first way, historical benchmarking, is not applicable here. The second way, industrial benchmarking is already done through the strategic group map. The third way, best in class benchmarking could deliver useful best practices from companies in other industries. There was not yet a best-in-class benchmark conducted in the context of an online firm that customizes women fashion. So the existing literature could not address research question 2c ***What are the strategic dimensions and parameters affecting the strategic objectives of an online business?*** Hence, this was the second research gap. Therefore, a best in class benchmarking procedure was carried out in chapter 3 to identify best practices. In table 5.1 the best practices that Designedbymyself will use, deducted from the LEGO and the Threadless cases are summarized.

Best practices used by Designedbymyself	
LEGO **LEGO**	Every design can be ordered (not necessary to win a contest) Thematic contests
Threadless **Threadless**	Crowd sourcing; community is the driving force Contest element; reward is percentage of sales

Table 5.1: Best practices LEGO and Threadless used by Designedbymyself

Strategic issue #4: Sustainable competitive advantages

It became evident from the literature that online firms that mass customize fashion need to increase customer loyalty through (1) apply the N=1 principle, (2) develop appropriate toolkits (3) introduce a strong customized brand and (4) develop collaborative customer co-design in communities. Moreover, firms have to increase earnings by means of (1) apply the R=G principle, (2) apply principles of mass customization, and (3) economies of integration.

Research question 2d is addressed and the strategic dimensions and parameters affecting the sustainable competitive advantage of Designedbymyself can be outlined in table 5.2.

Customer loyalty	Competitive advantage
N=1	Engineer-to-order (value chain)
Develop appropriate toolkits	User friendly design tool (strategy canvas)
introduce a strong customized brand	Possibility to customize brand (DesignedbyMarlous)
Develop collaborative customer co-design	Community and forum (best-in-class benchmark)
R=G	Procurement and technology development(value chain)
Principles of mass customization	
-Modular product families	*-Engineer-to-order (value chain)*
-Flexible fabrication systems	*-3D sewing (value chain)*
-Stable processes	*-Operations (value chain)*
-IT systems	*-Technology development (value chain)*
Economies of integration	
-Decoupling and postponement	*-Engineer-to-order (value chain)*
-Efficiency in forecasting and product development	*-Market information on customer tastes and competitions (best-in-class benchmark)*
-Utilization of customer base	*-Crowdsourcing (best-in-class benchmark)*

Table 5.2: Sources of competitive advantage of Designedbymyself

5.2.2 Operational and website issues

The investigation of operational and website issues formulated an answer on the third sub research question ***What are the website issues affecting the online business?*** This investigation was divided into two parts.

Website issue #1: DART Model

Regarding sub research question 3a ***What are the website issues regarding the application of the DART building blocks affecting the online business?*** there was concluded there was no research conducted that identifies the application of the DART building blocks at an online company that co-creates value through mass customization. The third research gap was identified here. In chapter 3 this research gap was addressed through a single case study method. The application of the DART building blocks was investigated through the website of Styleshake.

The DART building blocks that Designedbymyself will apply, are visualized in table 5.3.

Dialogue	Designedbymyself will offer a help-button, the website does give users active recommendations or possibilities. The user can interact with the avatar (by customizing the looks and sizes) and the garment by means of 3D views. And there will be a Designedbymyself community and forum. FAQ are visible from metanavigation, Designedbymyself will give a recommended path (in designtool) by means of a procedural (semi step-by-step) process. A wizard is used (as an introduction) and as a guide during designing. The system gives the user a summary after designing. The product price is visible during the whole design process.
Access	There are standard models offered as starting point. Contact is accessible by email or telephone. There is a clear wizard that leads the customers through the design steps. There is a zoom function and a 3D tool. The user does not have to scroll vertically; all options are stated at the first page. There is animation on the website by means of customizing the avatar and 3D modelling the garments on the avatar. Customers can start designing fast; only go through 1 step. Customers can use process navigation to design and can use existing models (designed by other users and standard models) to further customize. Users can go one step back and forward and are able to save the dress during the designing. The loading time is fast and there is plug-in necessary for online rendering the 3D model. The different parts of the design are shown, consumers builds up the design out of different parts. The designed product can be bought easily online with different payment possibilities.
Risk	Designedbymyself offers the possibility to save the garment during designing. There is a need to log in, in order to save customers' designs and measurements (avatar). The fabrics and design are clearly visualized by means of 3D, and by customizing the avatar-on the customer's specifications- customers can see how the dresses will look on them. Designedbymyself has a clear privacy policy, user's data is treated confidential. Designedbymyself will offer different payment methods; paypal, credit card etc.
Transparency	The designtool shows clearly the options open for the user. The designtool is a semi step-by-step procedure but is user-friendly by means of a help button and a wizard. The designtool shows clearly how the prices of the dresses are build up (within the different options) and the product price is visible during the whole design phase. The general terms and conditions are clearly visible on the website Designedbymyself throughout the whole metanavigation. The designtool gives all options open (visible) for the customers. The delivery time is communicated clearly; 7 days.

Table 5.3: The DART building blocks of the website www.Designedbymyself.com

Website issue #2: Web Experience

The third part regarding sub research question 3b, ***What are the website issues regarding the Web Experience affecting the online business?*** concluded that the Web Experience of (potential) customers on a website of an online company that customizes women fashion is not yet studied. This forms the fourth research gap which was addressed in chapter 3 through a single case study method. The Web Experience of Styleshake's website was investigated through customers observations and interviews. Results from the customer interviews were interpreted for the website design of Designedbymyself. Table 5.4 visualizes the building blocks of the Web Experiences on the website www.Designedbymyself.com.

Functionality factors		Psychological factors	Content factors	
Usability	**Interactivity**	**Trust**	**Aesthetics**	**Marketing mix**
-Convenience: synoptic and user-friendly design tool. (saving, customer profile) -Site navigation: a semi step-by-step procedure -Information architecture: More information about the company, the design process and the possibility to view other designs -Ordering/payment procedures: credit cards, Paypal, and Ideal. -Search facilities and process: presence of an information (Q&A) avatar -Site speed: At least as fast as the styleshake website . -Findability / accessibility: Clear shortcuts to important information	-Customer service/after sales: interaction with the company, customizable mannequin avatar, and customer advice -Interaction with company personnel: interaction with the company through Q&A avatar and clear information -Customization: Customizable avatar customers can begin with a dress and customize it, a 'random' button and customization of brand -Network effects: customer forum, a 'gallery' where designs are showed	-Transaction security: Many payment methods, outsourcing the payment to a reliable third party. -Customer data misuse: No perceived misuse but Designedbymyself will not sell customer data to third parties and this will be stated also on the website. -Customer data safety: See above -Uncertainty reducing elements: Through a thorough explanation of measurement point, the dress will be perfectly fitting. -Guarantees/return policy: No return, since the fit of the dress will be perfect	-Design: clear and fashionable. The style will be trendy and stylish in the style of Hed Kandi. -Presentation quality: a zoom function, The avatar will be customizable to the customer's skin, hair, eyes and figure. -Design elements: 19 (jersey) fabrics, 11 colours and 8 prints. There will be multiple notions like beads, stones, buttons, studs, paillets, applications etc. -Style/atmosphere: fashionable to enable customer identification with the company.	-Communication: introduction regarding the design process, tips and advices for customers, a question/answer avatar -Product: The end product will be exactly what is expected because the online product presentation will be accurate. -Fulfilment: Fulfilment is achieved by interacting with the customers before and during the design process and suggestions of other customers will be yielded to inspire the less creative customers. -Price: $150-$200 -Promotion: attractive promotions to attract and retain customers. first order reduction of 10%, design competitions, recommendation discount.

Table 5.4: The Web Experience factors of the website www.Designedbymyself.com

5.2.3 Organizational issues

The investigation of the organizational issues addressed the fourth sub research question ***How to create an integrated online organization?*** This section was divided in three parts, analyzing (1) the front office, (2) the back office and (3) third parties. The results stem from literature and can be implemented for Designedbymyself.

Organizational issue #1: The front office

The first section reviewed literature to address research question 4a concerning the front office. From the existing literature resources it became evident how communication and marketing issues should be addressed by an online company that customizes women fashion. So there is no research gap left and the results from the literature study are applied next.

Communication strategy of Designedbymyself

The virtual communication of Designedbymyself is based on an N=1 approach. N=1 relates to personalized co-created experiences of consumers. This approach relates to customized marketing,

or one-to-one marketing. Because Designedbymyself's customers surf individually on the internet, they can be reached individually. So within the online environment, Designedbymyself is able to identify customer preferences and either focus their messages and products and services on meeting the needs of each individual, and allow the customer to customize the message, products and services they desire. It is important to note that Designedbymyself will focus, in the first place, on the Dutch internet market (see appendix 1). The website will be introduced on the Dutch market, but once the organization and the website are perfect the website will also be positioned on the worldwide web. During the introduction, the website will be available in two languages; Dutch and English. The website will give the (international) customers the option to order from everywhere, but the delivery costs are for themselves.

Designedbymyself wants to inform their potential customers about their current activities and future web activities and outline the advantages of doing business with them online. It is important that Designedbymyself will get much publicity since the moment the shop is online. Designedbymyself will inform their customers regarding upcoming activities by making use of a mailing list of all the registered customers. In these emails Designedbymyself will communicate about reductions, new models etc. Designedbymyself has an online presence only, so the website is the communication tool. Designedbymyself is planned to reach new customers through free publicity. Because designing online your own dress based on your own sizes is a new phenomenon in the Netherlands, it is expected to get free publicity in fashion magazines (like Elle, Avant-Garde etc) and also in the Elsevier and newspapers.

Designedbymyself is making use of a new marketing model, called *customerization*. At the website of Designedbymyself the customer is an active co-producer, it is necessary to interact with them and build relationships with them. The customer is perceived as an active participant in the process of creating and marketing the dress. The customer's name is the brand; Designedby**myself,** this increases the perceived value of the product and services offering and the customer ability to identify the resulting dress as her dress. Designedbymyself is planned to strengthen this perceived customization by sewing a label into the dress with the designers own name; for example DesignedbyMarlous. The mailings and all communication with the customers is done with the customer's first name. In the interviews in relation to Styleshakes's web experience, the greater part didn't felt that the layout of the website was appealing. It was too dull, too clean and too cold. The respondents wanted the website more fashionable, trendy and stylish. Because everybody has their own taste, Designedbymyself has planned that the customers can personalize the background and the style of the website in order to create a personal space where customers can express their creativity.

Marketing strategy of Designedbymyself

As explained in chapter two, the main categories of interactive media include (1) search engine marketing (2) online PR, (3) online partnerships, (4) interactive advertisement, (5) opt-in-email marketing and (6) viral and social marketing. In the text below it is explained how Designedbymyself will use the different forms of interactive media.

1. *Search engine marketing*

In order to expose the online presence of Designedbymyself in the online marketspace and to allow online customers to locate and easily access the site, Designedbymyself will make use of search engine marketing. The focus of search engine optimization (SEO) is driving web traffic to the website of Designedbymyself. Designedbymyself wants to use search engine key words, like '*je eigen jurk ontwerpe*n' (in Dutch) and by searching on this name Designedbymyself must pop up in the results of this search. These words are in Dutch because the search engines are focused on different countries and Designedbymyself will, in the first place, focus on the Dutch market. Designedbymyself will make use of both pay-per-click (PPC) key words and organic keywords. By making use of keywords, it is necessary to add the website to search engines. The keywords have to match subsequently where Designedbymyself wants to be found. It is necessary that Designedbymyself will use as much as possible keywords in the page title. This is where Google searches for (organic), so the more specific words (in relation to your company) there better you are located. Moreover, Google looks at the meta tags, in which the keywords and the description of the site can be found. Meta tags can be found in the source code. It is important that the content corresponds with the keywords. Designedbymyself has to organize that as much as possible other websites will add a link to their website. This is possible by means of press releases on fashion websites or getting mentioned on fashion blogs. Technorati is a website that rates and lists the best weblogs on the internet. For Designedbymyself weblogs in relation to fashion and design are helpful methods for the online marketing. Examples of those blogs are fashionista[18], trendhunter[19] and coolhunting[20]. Since Designedbymyself will focus first on the Netherlands, interesting fashion blogs are modeblog[21] and fashiondiva[22]. An interesting blog for online marketing is marketingfacts[23] and a blog for Dutch

[18] http://fashionista.com/; accessed 26 January
[19] http://www.trendhunter.com/; accessed 26 January
[20] http://www.coolhunting.com/; accessed 26 January
[21] http://www.modeblog.nl/; accessed 26 January
[22] http://www.fashiondiva.nl/; accessed 26 January
[23] http://www.marketingfacts.nl/; accessed 26 January

trendsetters is bright[24]. The more links to Designedbymyself, the higher the website will be in search engine results.

2. *Online PR*

Designedbymyself will use different ways of online advertisement; banner advertisement, email marketing and paid search results (see search engine marketing). Banner advertisements are ads as long as HTML-supported graphics . Designedbymyself will use online advertisement, which is based on placing interactive advertisements (like banners, buttons or hyperlinks) at high traffic websites, such as Elle, but also other fashion websites to attract potential customers. These kinds of advertisement are very expensive, so it is planned for later implementation, when it is financial more feasible. An online advertorial on the Elle website has a fixed price per week of 2000 euro. A medium rectangle advertisement costs 40 euro per 1000 displays on the Elle website. Elle has around 200.000 unique reach and around 1.700.000 page views per month. Assuming that the advertisement is shown on half of the visitor's (unique) pages, it means that it will cost around 4.000 euro per month. Designedbymyself will make use of email marketing. This way of online PR can have tremendous ROI when used effectively (read more below at opt-in email marketing).

3. *Online partnerships*

Designedbymyself will make use of affiliate networks, these are networks for online promotion. By doing so Designedbymyself will recruit other sites willing to place a banner or a link on their pages in exchange for a commission based click through. For Designedbymyself it is interesting to be part of an affiliate network because it is cost-efficient. Affiliate networks are interesting because Designedbymyself only has to pay based on performance/sales. An affiliate program participation is easy to implement, enables direct contact with niche markets and it will enlarge the brand awareness. Designedbymyself will use Adwords.google.nl, which is an affiliate network of Google.

4. *Interactive advertisement*

As explained at 'online PR' Designedbymyself has planned to use online advertisement (like banners). Some of these banners will be interactive. The advertisement should show the customers how the website looks like and how the designing process of Designedbymyself works, this can be done by using a 3D avatar/model that will explain the process. While it is very expensive to make an interactive advertisement it would get a lot of attention. Interactive adds are planned for later implementation.

[24] http://www.bright.nl/; accessed 26 January

5. *Opt-in-email marketing*

Designedbymyself uses the 'confirmed opt-in level' of email marketing. At confirmed opt-in the user provides their email address and receives an email that he just did. By using this strategy Designedbymyself is transparent (confirming the subscription) but it doesn't discourage customers by asking them to confirm the subscription (like with double opt-in). When customers subscribe to their own account in order to design their own dress at Designedbymyself they have to give their email address. When the customers finished the subscription they directly get a confirmation email with a link to activate their login. These subscribed customers are directly part of the mailing list. There is a link at the bottom of every email where customers can declaim being part of the list. Customers will get an email every week with new styles, new offers, reduction codes and with news of competitions etc. These emails are personal with the customer's name and special offers based on the customer's previous online behaviour (their designs or purchases). By doing so Designedbymyself will encourage customer loyalty, convincing customers to purchase something or acquiring new customers.

6. *Viral and social marketing*

In relation to viral and social marketing Designedbymyself takes the example of Threadless. Viral marketing refers to online worth of mouth marketing within social networks. Designedbymyself wants to involve customers actively with the brand, by doing so those customers will start talking with their friends and other people about Designedbymyself. Threadless is using worth-of-mouth and other viral techniques. They use blogs, their community and Twitter. Designedbymyself will use these options (see for information on blogs head 1 on search engine marketing) complemented with collaborating with Polyvore. Designedbymyself wants to evolve consumption on their website into a process in which people render products as part of themselves. Consumers of Designedbymyself are at the same time designers, models, voters or street team members and they personally invest into generating popularity. Customers can earn points towards future purchases by linking to Designedbymyself and referring friends and this helps achieve the viral marketing sales.

Organizational issue #2: Back office

In this section there will be described how Designedbymyself will integrate their online organization through the back office. The back office of Designedbymyself refers to e-commerce support activities to create a market oriented organization. In chapter 2 it became clear that this can be done through e-commerce support activities such as customer service, order processing and fulfilment. Hence,

there is no research gap and the results from this literature review will be applied to Designedbymyself below. The issues discussed next are as follows (1) customer service, (2) order processing, and (3) fulfilment.

1. **Customer service**

Additional costs in sales and customer interaction are related to the elicitation and interaction with the customers, by means of information-handling systems. The results of Styleshake's web experience (interaction) show that the customer feedback at the website was not as it should be. There is no direct contact possible; only by email. Styleshake promises to give answer by email within 24 hours, but they do not meet this time limit or sometimes give no answer at all. In relation to that Designedbymyself wants to ensure a perfect customer service by using information-handling systems. Such systems will enable the elicitation and interaction with the customers (customer interaction). Designedbymyself will offer services to online customers before, during and after a purchase. In order to provide services before and during purchase Designedbymyself will use a help function by using a 3D avatar that will answer (programmed) questions. Customers also get an introduction (text and video) how to use the designing tools and 3D avatar; this is mainly used by starting users. Designedbymyself will offer order tracking, where customers can check the status of their order, as an after purchase service.

Designedbymyself will facilitate the web back office needs by constant monitoring and communicating with the clients. A web statistic program (AWstats) will be used to keep track of the visitors amounts and the behavior of the customers of the website. With this information it is possible to continue improving the website and the customer friendliness.

2. **Order processing**

Designedbymyself will make use of single item picking; which means the picking, packing and delivery of a single online order. Once the customer has designed the garment, the order comes in. This order will be automatically translated into a production sheet and the 3D model will be converted into a 2D pattern. The pattern will be cut out of the fabric. The patterns exist of several parts; these have to be sewn together. Once the garment is finished it will checked on quality, order number, customer name and size. Than the garments are packed in a luxurious box and send to the customer. The delivery will be done by a postal service. The customers will get a confirmation email when they ordered and paid the garment and when the finished garment is send to their homes. The customers also get a number of the package so that they are able to track their order. By doing so Designedbymyself wants to keep the ordering process transparent.

Designedbymyself will use user friendly interfaces like the possibility to save the orders, temporary saving the design, search capabilities for special styles, purchase prices during designing and checkout features.

3. Fulfillment

In order to fulfil the order as just described above, back-end tools (such as fulfilment and logistics) are needed. Order fulfilment starts when the order comes in (point of sales) at this moment the order is digitally converted into a distribution and logistics function. As explained before the customer is integrated already in the design phase. Every garment is made based on individual sizes. This means that the order fulfilment option is **engineer-to-order**. The production only starts based on the individual order, no parts/modules are mode in stock. Therefore Designedbymyself has to use methods and techniques that enable customers to order a garment on the website Designedbymyself that are a three dimensional dresses worn by an avatar that looks like the customers wants it. Customers are able to adapt the avatar to their own wishes; like the ability to change the figure (body measurements), skin tone and different colors of hair. The eventual ordered garment is a made-to-measure dress which will fit the customer perfectly. No free alternation service is needed. According to Hammond and Kohler (2000) the real-power of e-commerce lies in the opportunities to improve supply channel management through B2B initiatives (back office). Opportunities that Designedbymyself takes are (1) making use of electronic data interchange (EDI) that connects Designedbymyself with the suppliers of the fabrics and notions (2) connecting the customers directly to the production facility (by means of an interface) (3) and connecting the received order directly with the production machines (from 3D to 2D pattern making etc).
By increasing the information intensity it will enable the economic individualization of products. Information technology is necessary to deliver mass customization (Piller, 2002). Technological applications (internet, CAD/CAM, 3D body scanning and virtual fitting rooms) have enabled firms to identify customer's individual needs and wants.
Designedbymyself uses the terms *customization of design* and *customization on fit*. Within fit customization garments are made based on the specific sizes of the customers. Customers will measure their sizes themselves. At Designedbymyself the customers can customize the avatar by filling in their own (measured) body measurements and the avatar is the concept for trying the customers own designed dresses on. The avatar is also adaptable by changing the colour of the hair and the skin.
Design customization is based on computer-aided-design and computer-aided-manufacturing. Customers are able to adapt and change the design throughout the design and production process.

The CAD systems include pattern manipulation and developing cutting arrangements. Designedbymyself want to make use of the technology to produce a 2D pattern piece in .dxf format directly derived from a 3D designed virtual avatar (based on the customer sizes). Designedbymyself wants to produce better fitting slacks for women. In the ready-to-wear market, the 2D patternmaking process assumes a standard body shape for each size category. Using standard measurements to create garments neglects the inherent variability of a woman's body. Designedbymyself uses the software of Optitex, this is a company that offers a lot of software applications within the apparel and fashion design industry. Their main products are PSD, Marker, Nest, Modulate, 3D runway and import and export software. PSD is a pattern design system, Marker and Nest are a software applications that generate nested layouts with a high speed and minimal material waist. Modulate is a made-to-measure software engine. Within this program each parametric style fits a particular set of dimensions that belong to specific people or represent particular manufacturing requirements. It is a unique method for generating made-to-measure patterns. 3D runway is a set of tools, it consists of different programs for designing and draping the dresses digitally and creating a pattern from the 3D model. The import and export software are data exchange modules, these modules convert, import and export data of all file types.
With these software applications the customers of Designedbymyself are able to design a dress in 3D on the website, this 3D design (based on the customers' own measurements) is converted into a 2D pattern. The program gives an (efficient) outlaid for the fabric. Illustrations on the 3D avatar, 3D designing, and the converting of the 3D model into a 2D pattern can be found in appendix 7.

Organizational issue # 3: Third parties

In this section the integration of Designedbymyself through third parties is explained. The success of Designedbymyself in the virtual marketspace requires cooperation with third parties outside the organization and its value chain. Third parties of Designedbymyself are parties that are not directly tied to the primary product (dresses) that a consumer is using. Third parties for Designedbymyself are; (1) TurnTool, (2) Optitex, (3) Polyvore, (4) My Virtual Model, (5) Elle, and (6) Google.

Turntool

An interesting third party that could provide tools to render the avatars and garments is TurnTool[25]. With the TurnTool software 3D models can be made available for everyone online on the Internet and offline from CDRom, USB, or from the computer. Moreover, TurnTool is free of charge and can be downloaded from the website.

[25] www.turntool.com, accessed January 2010

Optitex

Optitex can serve Designedbymyself in developing and providing 2D and 3D CAD software[26]. Optitex fashion design software solutions are designed to facilitate collaboration among partners throughout the manufacturing process, hereby enhancing the R=G principle. OptiTex is also active in e-commerce, providing online sales tools to promote branding and customer loyalty, which can assist Designedbymyself in reaching the N=1 principle.

Polyvore

Polyvore is a fashion community site that lets its users mix and match products from any online store (e.g. Designedbymyself) to create outfits for any kind of collage (see figure 5.4). It is also a vibrant community of creative and stylish people. On the website users can create sets (collages) composed of individual images. After the users have created a set, they can publish and share it with their friends and the Polyvore community. As stated on the website: '*Polyvore offers an unprecedented level of direct engagement with real products and brands, while its social features make it a powerful platform for the creation and distribution of user-generated advertising*.'[27] Moreover, Polyvore reaches a powerful, influential audience of over 3 million trendsetters and tastemakers. Polyvore has over 118 million pageviews per month. The average Polyvore user is a 22 year old female fashionista who loves to shop online and is open to engaging with new brands and products. This is exactly the target customer of Designedbymyself.

[26] www.optitex.com, accessed january 2010
[27] www.polyvore.com, accessed january 2010

Figure 5.4: Example of a collage on Polyvore.com

It is possible to promote brands and website through the Polyvore website in few ways. First, Polyvore users can compose a collage of the dress of Designedbymyself and publish it on the Polyvore site or on their blogs (see figure 5.5). Millions of shoppers use Polyvore to discover the latest trends and the hottest new products. In this way, Polyvore drives hundreds of thousands of clicks to retailers' websites every month.

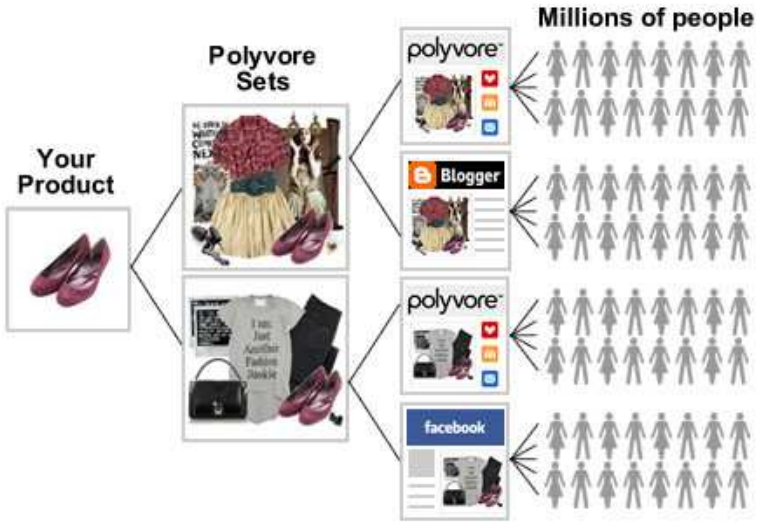


Figure 5.5: reach of polyvore

Secondly, Polyvore supports 300x250 display ads on product pages and browse pages. Sponsored products ads are highly targeted and blend seamlessly into the user experience, so they have high clickthrough rates (see figure 5.6).

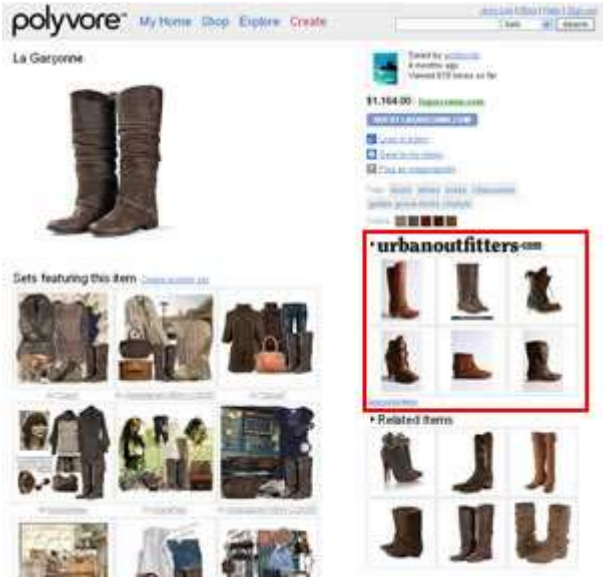


Figure 5.6: product ads on www.polyvore.com

Thirdly, Polyvore provides the option to sponsor a contest.[28] Sponsoring a contest allows the sponsor to harness the power and creativity of the Polyvore community to merchandise its products, raise brand awareness and generate viral buzz. They form a great way to instantly boost the firm's products' popularity and promote the brand to the entire Polyvore user base. For the duration of the contest, users are interacting with, talking about, and generating content with the brand of Designedbymyself. As the submissions roll in, each entry is essentially a display ad that remains indefinitely on Polyvore, gaining exposure via the community as well as through search engines. Additionally, each set can be displayed on the website of Designedbymyself, on blogs, and wherever the company or the creator decide to take them.

Contests usually get anywhere from 900 to 4000 entries. Since contests are a form of brand advertising, Designedbymyself should expect to see a lift in the brand's popularity on Polyvore, as well as viral buzz about the products around the web.

Finally, Polyvore can be added to the website of Designedbymyself. Polyvore sets help visually merchandise the products by illustrating the versatility and wearability of them. Designedbymyself can also use them to provide style advice to the customers. Furthermore, the add-to-Polyvore button can be put on www.Designedbymyself.com, allowing users to directly import the designed dresses to

[28] http://www.polyvore.com/cgi/business.contest, accessed January 2010

Polyvore. This will boost the popularity of Designedbymyself and increases the chance of them being used in sets or collages.

My virtual model

The company 'my virtual model' provides a tool that creates and offers 3D avatars. The company also created the concept 'BrandMe' which displays several brands in their virtual wardrobe and lets customers post them on their on their personal page were visitors can comment on them. So, my virtual model focuses on creating your own virtual model in order to virtually try on clothes. For exemplar images of an avatar, see appendix 7.

Elle

As already described in the communication plan, the website of Elle could be used as an online advertisement tool. Elle.nl is a fashion website that brings the latest fashion, beauty and lifestyle trends. It shows the latest catwalk trends by means of ELLE tv and backstage sideshows. The site focuses on women around 20-39 years, who have somewhat to spend and with a higher education[29]. The website would be a perfect medium for Designedbymyself to advertise. But as explained, in the start-up phase it would be too expensive. As explained in the marketing strategy of Designedbymyself, an online advertorial on the Elle website has a fixed price per week of 2000 euro. A medium rectangle advertisement costs 40 euro per 1000 displays on the Elle website. Elle has around 200.000 unique reach and around 1.700.000 page views per month. Assuming that the advertisement is shown on half of the visitor's (unique) pages, it means that it will cost around 4.000 euro per month.

Google

As already described in the marketing plan of Designedbymyself, Google is needed for search engine marketing [30]. Google is an online search engine, and such an engine is needed for customers to find a website (Designedbymyself). In order to enable Google to find your site you have to add your site to Google, rearrange the site and write clear meta tags.

[29] http://www.hachette.nl/online/elle.html, accessed 19 January 2010
[30] http://www.google.com/support/webmasters/bin/answer.py?hl=nl&answer=35291, accessed 19 January 2010

5.2.4 Technological issues

In this section the results of the investigation regarding research question 5 ***What are the technologies required for building the online business*?** describing the technological issues that are needed for building the online apparel business. The section is divided into two sections discussing the general technological issues of an online company and the technological issues regarding the co-creation of value through mass customization.

Technological issue # 1: General technological issues

In this section the general technological issues, that are required for the online business Designedbymyself, are described.The technological issues are related to; (1) Search engine optimization, (2) web site administration, maintenance and service (3) web server hosting an choice of internet service provider (4) site construction (5) content management (6) site security (7) transaction functionality (8) collection, processing and dissemination of the web site traffic and transaction data and (9) system backup.

1. **Search engine optimization**

In order to expose the online presence of Designedbymyself in the web marketplace and to allow online customer to locate and easily access the site, Designedbymyself will make use of search engine marketing. For search engine optimalization Designedbymyself has to generate keywords. It is possible to do keyword research with KeyCompete and analyze competitors with Seodigger and use the Wordtracker keyword suggestion tool (Jones and Moore, 2009). In order to enable the customers to find the website, Designedbymyself must optimize *meta description tags*, *meta key word tags* and create *meta robot tags*. Meta description tags belong to the head section of a website, it is usually placed after the title tag and before the meta keyword tags. The meta description for Designedbymyself is placed at the head section of the website. The description will be like <META NAME="description" CONTENT="designedbymyself.com is the first fashion eBrand that enables you be to your own fashion designer. You can order your own made-to-measure unique dress based on your own created avatar to create a new garment and look ">. The meta keyword tags for Designedbymyself will be <META NAME=”keywords” CONTENT=”design your own dress, be your own designer, made-to-measure garments, create your own model, made-to-fit dresses, couture dresses, women’s dresses, dresses NL, strapless dress, black dress, dresses online.”>
Designedbymyself will also use meta robot tags for the pages they do not want to index, like pages with personal information. In order to optimize their search engines, Designedbymyself must

optimize blogs posts for Technorati and fashion specific blogs, optimize site for del.icious.us and optimize images for Google images.

2. **Web site administration, maintenance and service**

In the start-up phase the website administration, maintenance and service will be done by WAME and by the owners. WAME is a company that will construct the website and by doing so they use their own content management system (CMS). The website Designedbymyself requires permanent monitoring. The maintenance of services on which a website relies needs to be done on a regular basis (web servers, proxy, domain name service, databases etc.). Maintenance tasks relate to security, crashes, logs, cache and monitoring. Designedbymyself will have a cache, which is a collection of data stored elsewhere; it is a temporary storage area. The effective and timely response to users' communications is a very important component of website planning, it will have an effect on the rating of the website and this communication will be done by the owners of the website. Also the content of the website (changes in styles, fabrics etc) is kept up to date by the owners of the website.

3. **Web server hosting and choice of internet service provider**

Designedbymyself will make use of external hosting, at www.mijndomein.nl. This webhosting company provides space on a server to provide internet connectivity. In addition to that they offer data space. There are different forms of hosting; a personal web server, institution based and a public server, Wame uses a public server. Complex websites, like the e-commerce website of Designedbymyself will have hosting with database support and application development platforms (like PHP). The hosting will be provided on a Linux hosting system.

4. **Site construction**

The website design relates to the creation of the presentation and content that is delivered to the end user by the internet. The website presentation is very important for Designedbymyself, because this apparel company has a web presence only. The website must appeal and attract customers to design and order garments online. This means that the site must be fashionable and trendy. In order to achieve that, the website will contain static but moreover dynamic web pages. In order to create dynamic websites with complex media, plug-in are needed (like Flash). The creation of a 3D real life model/avatar wearing clothes needs online rendering. In order to render online, customers must install a plug-in on their internet explorer.

The design of Designedbymyself' web pages will utilize multiple disciplines, like 3D animation, corporate identity, graphic design and interaction design. In relation to the content of the website, WCAG (web content accessibility guidelines) are needed. These guidelines make the website content more accessible.

5. **Content management**

For Designedbymyself the content management system (CMS) of WAME will be used. This content management system facilitates document control, editing, auditing and timeline management. There are three types of content management systems; online processing, offline processing and hybrid systems. WAME uses an online processing content management system, which is an open-source and support add-ons, which enable blogs web-stores etc.

6. **Site security**

It is important that Designedbymyself will use SSL (secure sockets layer) and TLS (transport layer security) to provide secure communication over the internet. A proxy server is used to keep machines anonymous; proxy servers act as an intermediary with a request and looks for sources from other servers.

7. **Transaction functionality**

The users of the Designedbymyself must have the feeling they are in control over the processing when using the website and in control over how to access and initiate whatever functionality is needed. Designedbymyself must offer such a functional website also during the transaction phase. The payment is an important element of the transaction. A PSP (payment service provider) offers the service of online payments by means of credit cards, back transfer (Ideal) and Paypal. Such a provider can connect to multiple banks in order to process the payments.

8. **Collection, processing and dissemination of the web site traffic and transaction data**

The web traffic of Designedbymyself will be measured and analysed in a web server log file, organized by the hosting company www.mijndomein.nl. Within such a file the hits and page views will be analyzed. By doing so, it is possible to monitor the number of visitors, page views, visit duration, most requested pages, top paths etc. With this information Designedbymyself can improve the website.

9. System backup

Designedbymyself will also ensure the security of all their data by copying all data on a server in order to restore data after a loss. A backup is needed from files, data, database, systems and the server. Back up will be done on a remote backup service .

Technological issue # 2: Co-creation of value through mass customization

In this section the technologies that are required for the online co-creation of value through mass customization at the website Designedbymyself will be described.

In order to co-create value (and customer loyalty), the online apparel company Designedbymyself will (1) apply the N=1 principle, (2) develop appropriate toolkits (3) introduce a strong customized brand and (4) develop collaborative customer co-design in communities to fully profit from the increased customer loyalty. Furthermore, in order to fully profit from increased earnings Designedbymyself will apply (1) the R=G principle, (2) principles of mass customization and (3) economies of integration. In order to reach these principles technological requirements are needed, there will be described below (see table 5.5).

<table>
<tr><th>Customer loyalty</th><th colspan="4">Increased earnings</th></tr>
<tr><td rowspan="2">Develop appropriate toolkits by using virtual prototyping 3D, 3D avatar, CAD/CAM and CAE</td><td colspan="4">Principles of mass customization</td></tr>
<tr><td>No assembly modules can be established</td><td>Flexible fabrication is based on made-to-order</td><td>Enable stable processes by using CNC and RP machines.</td><td>Enable IT systems by computer integrated manufacturing systems and CAD/CAM systems. Numerically controlled cutting machines and robotic sewing will be used</td></tr>
<tr><td rowspan="2">Introduce a strong customized brand by means of customized web pages, products and brand names.</td><td colspan="4">Economies of integration</td></tr>
<tr><td colspan="2">Enable decoupling and postponement by flow manufacturing systems;</td><td>Enable efficiency by using dimensional customization and online configurators</td><td>Enable utilization of customer base by using POS analysers.</td></tr>
<tr><td>Develop collaborative customer co-design by using collaborative software or computer supported cooperative work (CSCW) and social software</td><td colspan="4"></td></tr>
<tr><td>N=1 can be achieved by applying the enterprise space (spline chart).</td><td colspan="4">R=G can be achieved by applying the enterprise space (spline chart).</td></tr>
</table>

Table 5.5; capabilities to reach a competitive advantage for Designedbymyself

Increasing customer loyalty

Designedbymyself will maximize customer loyalty by means of appropriate toolkits, a strong customized brand, and collaborative customer co-design (see table 5.5).

Designedbymyself will use toolkits, enabled by simulation and virtual prototyping. Virtual prototyping is a process of product development. Designedbymyself will implement this by using CAD (computer

aided design) and CAE (computer aided engineering) software to validate a garment design before really making the product. The garment design is done by the customers, and the toolkit enables creating computer generated geometrical shapes (3D) en combining them into a 'assembly' and testing different mechanical motions, fit and function or just aesthetic appeal. Customers make use of so called trial-and-error problem solving. By doing so the customers generate and test (online) an selected answer and test it on the problem, relating to the results (successful or not) another possibility is selected on the problem. In practice this means that the customers test the selected styles and options on their own design 3D avatar and look whether the ultimate dress looks good on them or not.

As already described in the marketing strategy Designedbymyself will make use of customization in order to create a strong customized brand. In order to do so database technologies are very important, with these technologies loyalty building programs will be build. Designedbymyself will offer their customers customized web pages, customized products, and customized brand names (for example DesignedbyMarlous).

Designedbymyself will need collaborative co-design, this is possible by means of collaborative software, like email and social software. Examples of this computer-mediated social software are facebook, my space and communities.

Maximizing earnings

In order to maximize the earnings, Designedbymyself will apply some of the principles of mass customization and economies of integration. As explained in chapter 2, the **principles of mass customization** are (a) modular product families, (b) flexible fabrication systems, (c) stable processes and (d) IT systems.

A. As explained in theory, in order to enable **modular customization**, so called building blocks need to be used. However Designedbymyself enables customers to design their own garments based on their own sizes, no assembly modules can be established. The products are not designed for manufacturability, no product families can be made and garments cannot be organized around standardized parts and materials.
B. While Designedbymyself' one-piece working method doesn't enable modular customization it will create **flexible fabrication** possibilities. In order to fabricate flexible it is important to organize the production process in a way to avoid early proliferation of customer orders. The best way to achieve this is to divide the production process into two parts; (1) first parts works based on the MTS (made-to-stock) principle and produces components and (2) after the customer order arrives the product will be customized within the MTO (made-to-order)

system. The production of Designedbymyself is based on only the last part: made-to-order. No parts can be made-to-stock. It is impossible to keep all options into stock, and above all every garment part is based on individual sizes. The order decoupling point is directly the point when all the production starts.

C. Designedbymyself want to ensure stable processes by making use of CNC or RP (rapid prototyping) machines. These machines ensure that the costs of one article compared to another is strictly dependent on the production time and materials used, which are both minimized through the optimization of CNC coding. Designedbymyself also wants to use reconfigurable robotic handling devices for sewing and cutting the fabrics. Designedbymyself will use a new generation of shop-floor control systems. The requirement of the new control systems are decomposability, reconfigurability and scalability to achieve make-to-order with very short response time.

D. In order for Designedbymyself to implement mass customization **IT systems** are essential. Information technology is needed throughout the whole value chain. The production will be done by computer-integrated manufacturing systems and controlled by manufacturing equipment, and CAD/CAM systems are used for design and manufacturing. Designedbymyself will use digitalized operations, like cutting. To each customer's pattern, numerically controlled cutting machines are able to cut the fabric. The machine is capable of cutting virtually any pattern and can switch patterns instantly. There are also some innovations in relation to reconfigurable robotic handling devices. These devices can be directed to do the cutting of the fabric, but also the sewing of the garment (even in 3D). The leapfrog project is currently working on this robotic 3D sewing. This 3D sewing is possible by making use of a reconfigurable mould. This mould can precisely reproduce the volume and shape of the garment, and create a temporary 3D surface. In relation to that Leapfrog is working on a miniaturised robotic sewing head based on the concept of spherical sewing. This new sewing technique and the reconfigurable mould create the possibility to sewn in 3D.

The **economies of customer integration** for Designedbymyself are (a) decoupling and postponement, (b) efficiency in forecasting and product development and (c) utilization of customer base.

a. For Designedbymyself the biggest vulnerability is waiting, because of the **postponement** of activities until the customer order is placed. In order to deliver mass customized products fast, there is a need for flow manufacturing to make single products.

b. As stated before, the options Designedbymyself offers are standard, but because the customers can create the designs based on their own sizes, it is impossible to standardize different parts. This means that products cannot be developed in a synergistic way, in product families and around aggressively standardized parts and materials. Mass customized products can be produced in three ways; *modular, adjustable* and *dimensional*. Designedbymyself makes use of dimensional customization. This way of mass customization involves permanent cutting-to-fit, mixing, or tailoring and it is infinite. This type of customization will be made automatically on CNC equipment running program instruction (generated on demand from data that originates in parametric CAD). In order to enable to customer to cocreate the design, online configurators are used. Mass customization provides more accurate market information on changing customer tastes and the actual tradeoffs they make in choosing products. And it offers possibilities for more accurate **forecasting** for Designedbymyself; by doing so they can select favorite styles, colors and fabrics.
c. The **utilization of the customer base** of Designedbymyself relates to acquiring, structuring and analysing consumer data. With a POS (point of sale) analyser Designedbymyself and their suppliers have access to past sales data and are able to analyze the effectiveness of specific product segments, product options and styles.

N=1 and R=G

To maximize customer loyalty and earnings, Designedbymyself will apply the principles N=1 and R=G. To be able to act on customer insights and reconfigure resources dynamically, Designedbymyself will use the ICT architecture introduced by Prahalad and Krishnan (2008). This new ICT architecture embeds Designedbymyself in the internet, connecting the external devices, sensors, and products, customers, and supplier systems. By doing so the ICT architecture will enable an N=1 (personalized co-created) customer experience executed in an R=G environment (global access to resources and talent) (Prahalad and Krishnan, 2008).

Designedbymyself focuses on the experience of one single customer at a time, and by doing so the volume and variety of data, the analytical capabilities, and the need for flexibility grows. This means that in order to offer single customers an individual experience at a time, a high flexibility is needed. This flexibility can be offered by an online rendering tool and the possibility to create your own avatar. Such a turn tool offers the customers to create their own avatar based on their own measurements and also design and try-on the garments on these avatars.

In order to keep the website save, SSL (secure sockets layer), TLS (transport layer security) and a proxy server is used. For further information see site security.

The interdependencies of Designedbymyself and their technical demands can be identified in a spline chart (see figure 5.7).

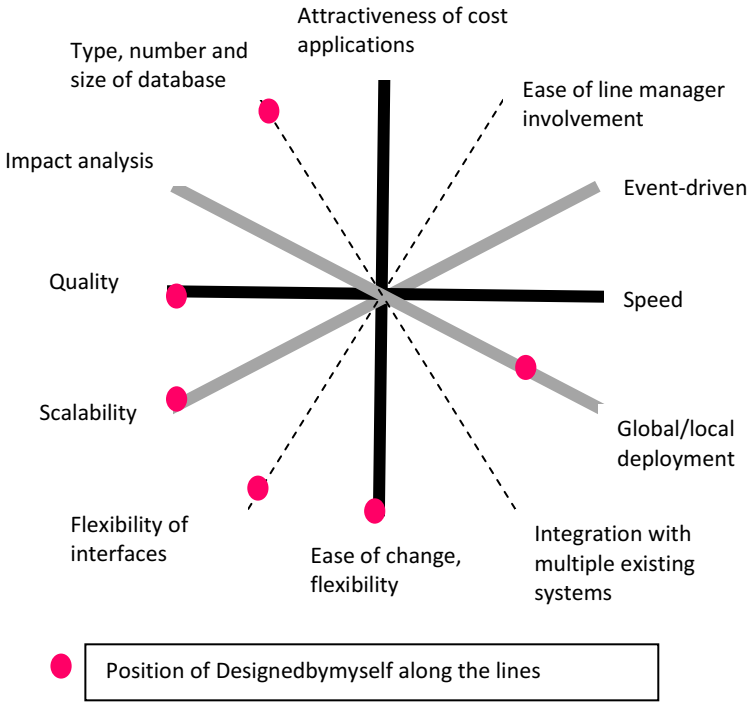


Figure 5.7: Enterprise space: centre of gravity of Designedbymyself

The chart shows where Designedbymyself ought to be along the three different lines. The thick black lines relate to the basic issues that dominate decisions making in ICT architecture. For Designedbymyself 'quality' and 'easy of change, flexibility' are the most important issues. In relation to the business-technical issues (the dashed lines) Designedbymyself focuses on 'flexibility of interfaces' and the' type, number and size of databases'. In relation to the technical issues (lighter solid lines) Designedbymyself focuses on the issue 'scalability' (in order to be cost effective) and 'global development' in order to produce the products and enable R=G. See figure 5.7.

5.3 Conclusions about the research problem

In this section conclusions about the research problem are listed. To encapsulate the achievements of this thesis, a final conceptual framework was drawn (see table 5.6).

S-element	Research questions	Sub research questions	Conclusion(s) & Implications for Designedbymyself
Scope	*2.What are the strategic dimensions and parameters affecting the online business?*	2a: What are the strategic dimensions and parameters in the business environment affecting the online business?	Three critical success factors to focus on; quality factor, identification factor and the design tool.
		2b: What are the internal strategic dimensions and parameters affecting the online business?	Designedbymyself's value chain focuses on early customer involvement. By offering high customer service and enable customer interaction, a high added value can be created in the value chain.
		2c: What are the strategic dimensions and parameters affecting the online business regarding strategic objectives?	Designedbymyself learned from this benchmark and will also apply the following; (1) order every design, (2) organize thematic contests, (3) use crowd sourcing and (4) offer high rewards in relation to the design contests.
		2d: What are the strategic dimensions and parameters affecting the sustainable competitive advantage of the online business?	Designedbymyself must increase customer loyalty and earnings through strategic capabilities that are valuable to buyers
Site	*3.What are the web site issues affecting the online business?*	3a: What are the website issues affecting the co-creation of value of the online business?	Designedbymyself will offer active recommendations and customer service by an interactive 3D avatar. The design tool will be a semi step-by-step process, with an introduction and a guide during designing. The designing will be done in 3D, on a 3D customized avatar created by the consumer, based on their own character/sizes.
		3b: What are the website issues affecting the Web Experience of the online business?	Designedbymyself offers the customers a user friendly design tool, by using a semi step-by-step procedure, Q&A avatar, introduction on the design tool, and the ability to customize the avatar. In relation to the style/atmosphere of the website, Designedbymyself offers the possibility to customize the avatar and customize the website background. Designedbymyself will be a hip and fashionable brand with a wide offer of styles, printed fabrics and multiple notions. Designedbymyself also wants to distinguish their website by focusing on interactivity; organizing design competitions, creating an online community and the ability to share designs within a gallery.
Synergy	*4.How to create an integrated online organization?*	4a: How to create an integrated online organization through the front office?	The virtual communication strategy of Designedbymyself is based on an N=1 approach. Designedbymyself will use a new marketing model, called customerization
		4b: How to create an integrated online organization through the back office?	Orders will be processed once the design is paid. The 3D design will be converted into a 2D pattern. Customers can check their order during the production and delivery phase.
		4c: *How to create an integrated online organization through third parties?*	Designedbymyself will use third parties like : (1) TurnTool, (2) Optitex, (3) Polyvore, (4) My Virtual Model, (5) Elle, and (6) Google
System	*5.What are the technologies required for building the online business?*	*5a: What are the general technologies required for building the online business?*	Designedbymyself will use (1) Search engine optimization by using keywords (2) web site administration, maintenance and service by using WAME (3) web server hosting and internet service provider using www.mijndomein.nl (4) site construction by using WAME (5) content management using the CMS of WAME (6) site security using SSL and TLS (7) transaction functionality by using a PSP (8) collection, processing and dissemination of the web site traffic and transaction data by using mijndomein's log file and (9) system backup by using a remote backup service.
		5b: What are the technologies required for co-creation of value through mass customization?	Designedbymyself will (1) apply N=1 by using the spline chart, (2) appropriate toolkits using 3D prototyping, CAD/CAM, 3D avatar, CAE (3) customized web pages, products and brand names (4) develop collaborative customer co-design in communities by (CSCW). To fully profit from increased earnings Designedbymyself will apply (1) R=G by using the spline chart, (2) principles of mass customization by using CAD/CAM, made-to-order fabrication, CNC machines and (3) economies of integration by using flow manufacturing systems, online configurators and POS analysers.

Table 5.6; Conclusion: final conceptual framework

From table 5.6 the Unique Selling Proposition (USP) of Designedbymyself can be identified. As stated in chapter 2, the USP of a company can be defined as follows:

- The brand must make a proposition to the consumer. Not just words, not just product puffery, not just show-window advertising. The brand must express to each potential customer: "Buy this product, and you will get *this specific benefit*."
- The proposition must be one that the competition either cannot, or does not, offer. It must be unique.
- The proposition must be so strong that it can move the mass millions, i.e., pull over new customers to your product. (Reeves, 1961, pp. 46-48).

The specific benefit of the products and service of Designedbymyself is that customers can design their own dresses in their own measurements. In the Netherlands this is unique, so each potential customer can get this product, service, or better *experience* only through Designedbymyself.

Regarding the international competition Designedbymyself will outperform DressbyDesign, Styleshake, and Studio28Couture by providing a number of services, possibilities and experiences that these competitors do not offer. First of all, the brand which is customizable is unique. Second, the possibility to customize the customers' avatar is also singular. Third, Designedbymyself will apply best practices from other industries which are unique within the competitive group. Finally, Designedbymyself focuses on the critical success factors that were identified through the customer survey: quality, identification, and design tool.

Through focusing on abovementioned factors (which are [totally] neglected by the competition) Designedbymyself can '*move the mass millions'* and will acquire a USP.

5.4 Recommendations and discussion

In this section there will be elaborated on implicit and explicit recommendations for Designedbymyself stemming from this research.

An important factor of starting a company is financing the investments. The budget of Designedbymyself can be found in appendix 8. Appendix 8 shows the financial plan, written for the TOP arrangement. It is necessary to consider the financing of the total amount of investments. The highest investment is needed for the online rendering tool and the 3D sewing machines. Further research and contact is needed for the 3D sewing machines, these machines are developed by the Leapfrog project and are not (yet) offered for sales to other parties. There is no information available on the prices of those 3D sewing machines. It is a possibility to produce, in the start-up phase, in Poland. In this situation the software of Optitex will be used for converting the 3D avatar into a 2D pattern.
The 3D rendering (avatar and clothes) is a costly tool, but it is necessary for Designedbymyself to be competitive and enable the USP. There are companies that offer such a rendering tool, so the knowledge is available for sale. The price of the online rendering tool is based on the number of frames. Looking to the investments (appendix 8), around €5000 will be paid for a website, €10.000 in relation to the 3D avatars and €10.000 in relation to the turntool/online rendering tool. The financial plan is an estimation, so during the development of the business, the plan needs to be altered. The planned sales are based on a selling price of €100 (incl.VAT). In the situation as appendix 8 shows, the total investments can be covered by the total capital.

To arrange the supply chain and build relationships with suppliers and third parties, Designedbymyself will focus an initial period on the Dutch market only.
When the supply chain is perfectly arranged and running flawless in the Netherlands, it is time to expand to other countries. Markets Designedbymyself wants to enter are Denmark, United Kingdom, Sweden, Germany, Luxembourg, and France. Residents of these countries are substantially shopping online (see appendix 1). To enter abovementioned markets, the main marketing strategy will be social and viral marketing as discussed in chapter 5.

5.5 Contributions

In this section a summary listing of the contributions of this research is listed.

First of all, this thesis contributed to the academic apparel literature which is very scarce. It provides a framework (with the adapted 4S Web Marketing Mix Model) which is useful for online start up fashion companies that aim to mass customize apparel. Such a framework was not available before completing this thesis. Since mass customization and co-creation are rising and promising especially in the fashion industry, this framework is a significant contribution, practically as well as theoretically.

Second and more specific, this thesis made contributions regarding the four research gaps that were filled in this thesis. In the existing literature four research gaps were identified:
The first research gap concerned the ignorance of the competitive environment of a newly set up online company that mass customizes dresses. This research gap was filled by concluding that there are several strategic gaps for such companies. Designedbymyself should focus on quality, identification, and design tool to reach a competitive advantage.
The second research gap (ignorance of best practice) was filled by means of a best-in-class benchmark. Best practices were derived from LEGO and Threadless. Designedbymyself will offer the option to (1) order every designed dress (there is no need to win a contest), (2) compete in a thematic competition e.g. design your African dress, (3)winning (popular) designs will be offered online for a special price, and (4) the community is used as the driving force (crowdsourcing).
The third research gap concerned the ignorance of the DART building blocks on mass customization websites. This gap was addressed by studying and analyzing the DART building blocks on the website of Designedbymyself's main competitor Styleshake. There was concluded that on this website the DART building blocks were poorly applied and that Designedbymyself should focus on dialogue, access, risk reduction, and transparency more.
Finally, the fourth research gap (ignorance of the Web Experience on a mass customization website) was addressed through analyzing the Web Experience on www.Styleshake.com, through customer observations and interviews. The three most important factors to improve were usability, interactivity, and aesthetics.

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Appendices

Appendix 1: Business environment

Layer 1: Macro environment

The first layer is the **macro-environment** consisting of the broad environment factors that impact almost all organizations. Identifying online apparel sales figures, future web trends and web developments is useful to get a view on this broad environment.

Online apparel sales figures

According to the 'Thuiswinkel Markt Monitor 2009-1' (Netherlands) the online spending of consumers has increased 19% compared to the first half of 2008 to a turnover of €2,700,000,000. The average number of orders also increased 20% to 3.3 orders per consumer. Furthermore, the average online spending per consumer is €380.
The turnover within the segment clothes is increased 30% to € 225,000,000 in the first half of 2009. Hence, the segment clothing obtained the third place in turnover after the segments travelling and electronics.

According to CBS (Central Bureau of Statistics) there are 5.5 million women in the Netherlands who are actively using the Internet. 51% (2,805,000) of them bought goods online in 2008. Within this group 48% (1,346,400) bought clothes and/or sportswear (see table 1.1). This means that half of all women that bought online, did also bought apparel. This is a high amount!

Internet purchases[31]					
		Women	12-25 years	25-45 years	45-65 years
Purchase goods all people[32]		56%	61%	79%	52%
When ordered/bought the last good for private use)?	< 3 months ago	38%	38%	59%	35%
	3 - < 12 months ago	13%	17%	15%	11%
	More than 1 year ago	6%	6%	5%	6%
	Never ordered	31%	39%	18%	34%
Kind of internet purchase in the last 12 months (for private use)?	Clothing and sport articles	48%	40%	46%	29%

Table 1.1: Internet purchases in the Netherlands
Source: CBS, 30-06-2009, Internet gebruik en verkopen, 2008, vrouwen, Nederland

[31] *Internet purchase: in relation to the internet purchases there is asked whether the, when they did the last purchase and the kind of purchased goods.*
[32] *Purchased goods % of all persons: when did you bought for the last time goods or services through the internet for private use? Total of all persons that indicated they bought goods online.*

Channels

According to a research of the Thuiswinkelmonitor (Netherlands) 68% of all respondents (in the first half of 2009) bought clothing/shoes, regardless the channel used. Of these 68% respondents, 28% bought these clothes/shoes online and 30% bought these clothes in a retail store, the rest bought is in other channels (see figure 1.1).

Clothing/ shoes	orientation	Crucial orientation	Place of purchase	After sales
Internet	28%	18%	17%	2%
Store	30%	26%	81%	8%
Print	27%	16%		
Tv/radio	4%	0%		
telephone	0%	0%	0%	3%
different	11%	8%	2%	
None	31%	32%		88%

Figure 1.1: purchase clothing/shoes, different sales channels

Type of information	internet	Shop
Satisfaction	71%	89%
price	71%	70%
special offer	57%	47%
availability	30%	13%
suitability wishes	24%	40%
shop/place of purchase	21%	
productspecs	18%	14%

Figure 1.2: type of information

Channel switch internet → shop	Channel switch shop → internet
No the possibility to see/feel/try-on the product	Easier, from home
Price/special offer in shop	Easier in relation to delivery at a desired place
Does not own credit card	Not bounded to 1 specific shop

Figure 1.3; research for switching

The respondents also stated that the prices was the most important factor to buy online or in a shop. 57% process bought online, because there was a special offer (see figure 1.2). Reasons not to buy online (or switch from internet to shop) in not having the possibility to see, feel or try-on the garments, there is a special offer in a shop or the respondents do not have a creditcard. Reasons to buy from the internet instead of in a shop, was that internet shopping was easy, in relation to the order place and delivery place and because the respondents were not bounded to one shop (see figure 1.3).

International

Figure 1.4 shows that the Netherlands are the most common to shop online and also do this the most of all EU countries. 50% of the Dutch shop online. There is a positive relation between the amount of households with internet and the amount of internet shopping.

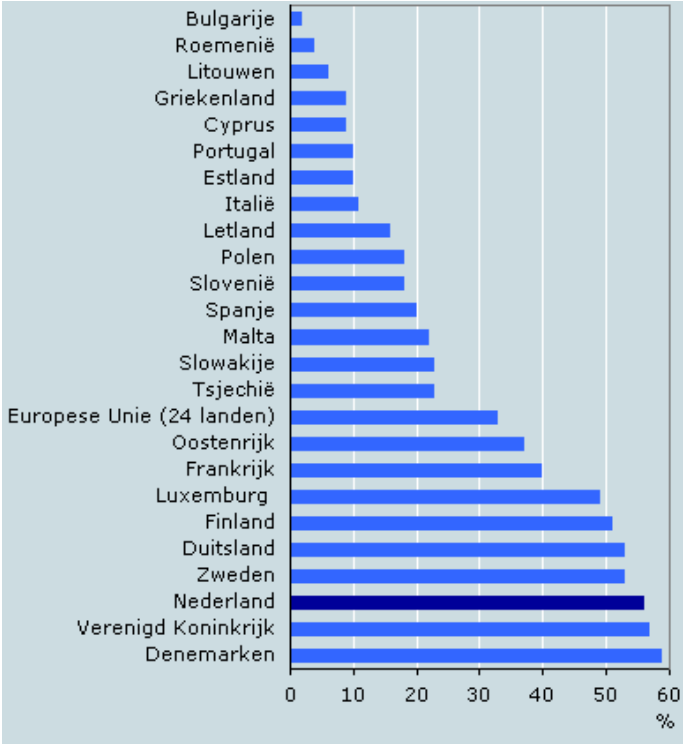

Figure 1.4: Growth online shopping in the EU, 2004-2008 (CBS)

In the Netherlands, e-shopping has grown with 20% with the period 2004-2008. This is the biggest growth together with the United Kingdom in the EU.

Future trends and web developments

Around 2015/2020 there are several important broad environmental factors that will impact organizations. According to Prahalad and Krishnan (2008): (1) more than 5 billion people will be connected by cell phones and the internet (2) the progress of social networks will create the ability to exercise people's individuality (3) everyone will get access to infrastructure (4) by means of large databases and powerful analytics there are better capabilities to co-create and (5) the current generation of 12-15 year olds (the generation of the future) are now active consumers, and they are used to individuality and self-expression. Resulting from these factors, Prahalad and Krishnan (2008) describe three key trends. These trends will enable firms and individuals to co-create new experiences through access to global resources.

The first trend relates to the convergence in ubiquitous connectivity in voice, data and video; because of the decreasing prices of access to connectivity and content, billions of people will be connected through voice, data and video.

The second trend relates to the ubiquitous access to computing at decreasing costs. 'Access to connectivity to personalized content through a device of the individual consumers' choice is becoming an expected reality' (Prahalad and Krishnan, 2008, p. 244). By means of do-it-yourself (DIY)

tools, individuals with minimum skills are enabled to get on with their own portfolio of operations. The third trend relates to the rapid experimentation in new platforms for collaboration. Socials networks are transcending personal communities to business applications. The distinction between private and public, and personal and business is blurring (Prahalad and Krishnan, 2008).

These trends result in an evolving ecosystem with implications for enabling N=1 and R=G – the two principles of co-creation – since (1) everyone will have access, (2) access to computing is becoming easy and affordable and (3) the social networks will dominate how we live, work and transact business. N=1 relates to the co-created experiences and R=G relates to the global access to resources and talent. Furthermore, N=1 and R=G are driven by connectivity, computing and collaboration; 'is has become a virtuous cycle' (Prahalad and Krishnan, 2008, p. 246).

Layer 2: Industry environment

The second layer of the business environment is the **industry environment** which consists of a group of organizations producing the same products or services.

An **industry** is a group of firms producing the same principal product. **The five forces framework** helps identify the sources of competition in an industry or sector.

Table 1.2 summarizes the main impacts of the internet on the five forces affecting online organizations.

Bargaining power of buyers	Bargaining power of suppliers	Threat of substitutes	Barriers to entry	Rivalry between existing competitors
The power of online buyers is increased since they have a wider choice and prices are likely to be forced down through increased customer knowledge and price transparency Forming electronic links with customers may deepen a relationship and it may increase switching costs	When an organization purchases, the bargaining power of its suppliers is reduced since there is wider choice and increased commoditisation[33] due to e-procurement and e-marketplaces	Substitution is a significant threat since new digital products or extended products can be readily introduced	Barriers to entry are reduced, enabling new competitors, particularly for retailers or service organizations that have traditionally required a high-street presence or a mobile sales force	The internet encourages commoditisation which makes it less easy to differentiate products. The internet facilitates the move to the global market, increasing the number of competitors.

Table 1.2: Main impacts of the internet on the five competitive forces

[33] the process whereby product selection becomes more dependent on price than on differentiating features, benefits and value-added services

Appendix 2: Screenshot on competitors websites

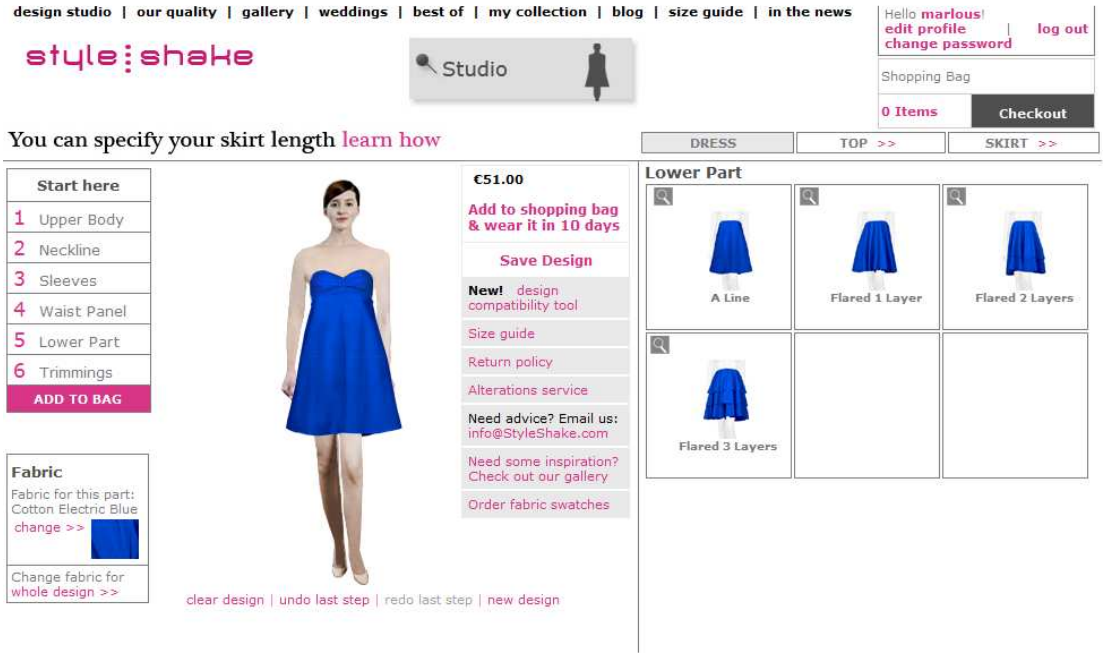

Figure 2.1: screenshot design studio www.styleshake.com

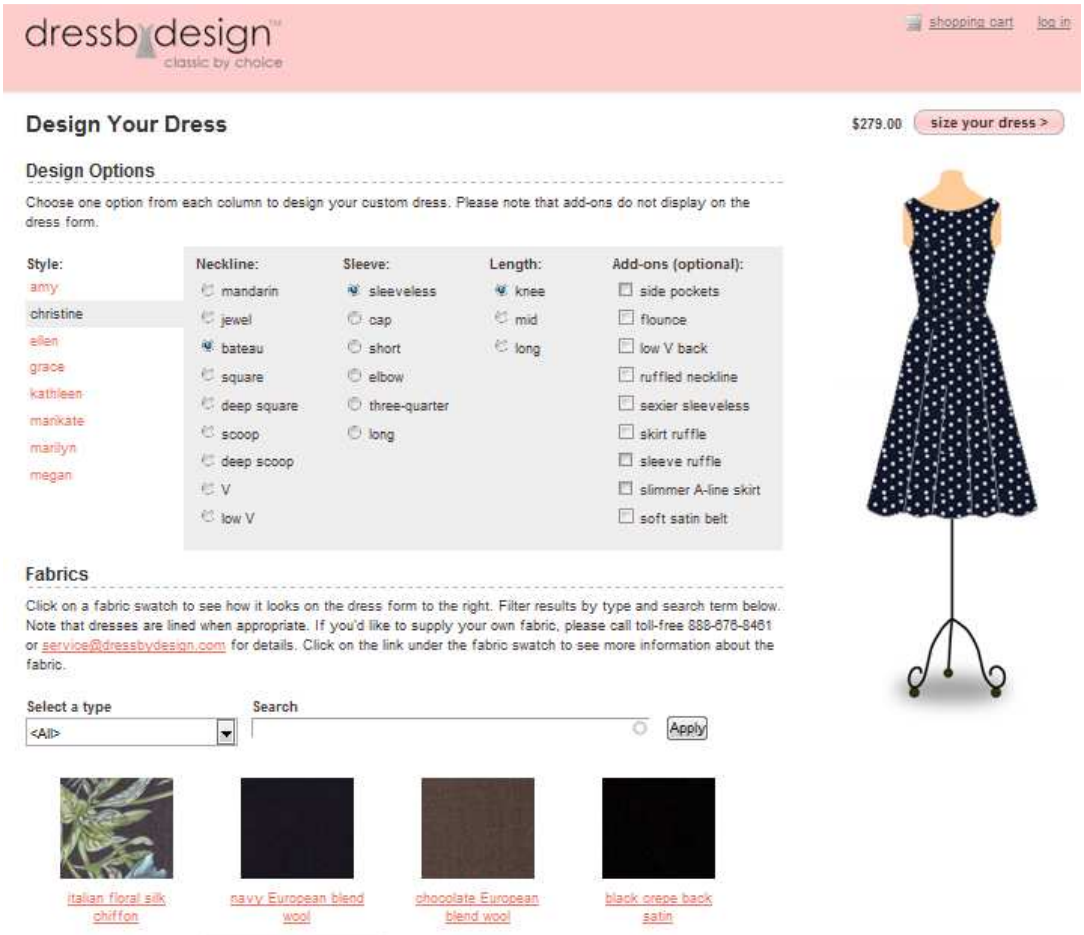

Figure 2.2: screenshot design studio www.dressbydesign.com

Figure 2.3: screenshot design studio www.studio28couture.com

Appendix 3: Brainstorm session

What are we planned to do differently, in relation to Styleshake?

1. Add the possibility to save the garment during the design phase.
2. Add the possibility to zoom into the avatar and to look around (front and back 180 degrees) the design.
3. Add the possibility to create/customize your own avatar.
4. Definitely add printed fabrics.
5. Create a more userfriendly design tool, so that the customers do not have to go through every category in order to proceed.
6. Add more choices for trimmings, like stones, beads and studs.
7. Add a help button.
8. Given advice during designing, like given advice what colours match together and what is nice to add to the customers design.
9. More emphasize the possibility to create a garment on your own measurements (made-to-measure).
10. Add the possibility that customers can communicate more with each other, Styleshake has a blog but they have the leading role in the discussions.
11. And emphasize the possibility to rate one another's designs and organizing competitions for the best design. This design will be (mass) produced and offered for an affordable price.

Appendix 4: Styleshake's and Designedbymyself's application of DART building blocks

DART building block	Attribute	Description	Styleshake	Designedbymyself	
Concept/Design					
Dialogue	Help-Button	A help-button exists to support the user in case of questions or misunderstandings. (yes/no)	No	Yes	
Risk reduction	Privacy Policy	A privacy policy is available from each site to guarantee that users' personal data is treated confidentially (yes/no)	Yes	Yes	
Transparency	General Terms and Conditions	The GT&C are accessible from the metanavigation. (yes/no)	Yes	Yes	
Dialogue	FAQ	The FAQ are accessible from the metanavigation. (yes/no)	Yes	Yes	
Access	Contact possibilities	A contact is accessible from the metanavigation via E-Mail address, online contact form or telephone number. (yes/no)	Yes	Yes	
Access	Steps to starting	Number of web pages the user has to go through in order to get to the configurator (distance from the Homepage)	1	1	
Structure					
Access	Process navigation	A process navigation exists to show the user the previous and upcoming configuration steps. (yes/no)	Yes	Yes	
Access	Structure of process navigation	Is the structure of the process navigation vertical or horizontal. (vertical / horizontal)	Vertical	vertical	
Access	Module library	Pre-customized products are available for further customization. The user can use existing modules and customize them (e.g. change the colour or image). (yes/no)	Yes	Yes	
Dialogue	Recommendation	The system provides active recommendations to the user, e.g. colour. (yes/no)	No	Yes	
Access, transparency	Current position	The user's current position is shown throughout the configuration process (visual feedback). (yes/no)	Yes	Yes	
Transparency	Price scheme	A price scheme exists showing the current selection of options and price to the user. (yes/no)	Yes	Yes	
Access	One Step Back	A back-button exists allowing the user to go "one step back". (yes/no)	Yes	Yes	
Access	One Step Forward	A next-button exists allowing the user to go "one step forward". (yes/no)	Yes	Yes	
Access	Product range	A "base model" exists giving the user a starting point for designing the product. (yes/no)	No	Yes	
	Different starting site	The configurator's "first site" differs from other configurator's pages. (yes/no)	Yes	Yes	
Access	Symbols	Unusual symbols are used in the configuration process (common symbols are zoom, loupe...). (yes/no)	No	No	
Transparency	Already accomplished path	The system shows the user how much of the configuration process he/she has already accomplished. (yes/no)	Yes	Yes	
Dialogue,	Possible path	The system shows the user the possibilities open in the configuration process. (yes/no)	No	Yes	

Transparency					
Dialogue, Transparency	Recommended path	The system guides the user through the configuration process with help of a recommended path. (yes/no)	Yes	Yes	
Dialogue, Access	Structure	Determines whether the structure of the configuration process is procedural (step-by-step), decision based (discontinuous) or knowledge based (the user has to enter input according to his/her needs)	Procedural	Semi step-by-step	
Dialogue	Automatic completion	The configuration process can be continued even if the user ignores a required decision during the configuration process. The system completes the product automatically, meaning that the user doesn't need to edit every step in order to continue the process. (yes/no)	No	No	
Access	Updated product description	The system provides the user with updated product descriptions during the configuration. (yes/no)	No	Yes	
Access	Number of configuration steps	Number of decisions that have to be taken to complete the configuration. The acceptance of the automatically generated proposal also counts as a decision. The amount of decisions within one category e.g. colour only counts as one decision.	13 (until payment)	11	
Access	Pages	Amount of pages of the configuration process. Checks if a page is alerted. But: Page is not seen as altered if only the depicted product changes and the rest of the site does not.	7	7	
Dialogue	Summary	After the accomplishment of the configuration, the system provides the user with a summary. (yes/no)	yes	Yes	
Technical specifications					
Risk reduction	SSL-Connection	A SSL-Connection exists to ensure the security of the user's personal data. (yes/no)	?	Yes	
Risk reduction	Save Button	A Save-button exists enabling the user to change and redesign his/her configured product at a later date. (yes/no)	No	Yes	
Risk reduction, access	Login	A Login-button is available during the configuration process e.g. in order to save the configured product. (yes/no)	Yes	Yes	
Access	Scrolling	Scrolling is necessary during the configuration. (yes/no) The user has to scroll vertically. (yes/no) The user has to scroll horizontally. (yes/no)	Yes No Yes	No No No	
Access	CD implementation	The corporate design is implemented throughout the configuration. (yes/no)	Yes:logo	Yes:logo	
Access	Pop-Up	The configurator appears in a Pop-Up. (yes/no)	No	No	
Access	Loading Time	The loading time is under 15 seconds. (yes/no)	Yes	No	
Access	Plug-in	The configurator requires a plug-in or offers a plug-in optionally. (yes/no)	No	Yes	
Visualization					
Access, risk reduction	Product visualization	The product or only a part of the product is depicted throughout the configuration process (the visualization can differ from the actual configuration). (yes/no)	Yes	No	
Access, risk	Product picture	The complete product is depicted. (yes/no)	Yes	Yes	

reduction					
Access, risk reduction	Current update	The system updates the product picture during the configuration process. (yes/no)	Yes	Yes	
Access, risk reduction	Perspectives	The product is presented from more than just one perspective. (yes/no)	No	Yes	
Access, risk reduction	3D	A 3D-perspective exists allowing the user to rotate the product picture 360°. (yes/no)	No	Yes	
Dialogue	Interactivity	The user can interact with the visualization. (yes/no)	No	Yes	
Access	Animation	An animation exists showing the user a predefined sequence of picture movements. (yes/no)	No	Yes	
Access	Image at step x	Number of configuration steps until an image of the product appears.	9	3 (-10)	
Access, risk reduction	Picture size	Length and width of the product picture in pixel.	190x190 pixels	300x300	
Access	Picture in special context	The product picture is presented in a special context e.g. with people, nature, special background... (yes/no)	No	Yes	
Ordering					
Transparency	Current Price	The current price of the configured product is stated during configuration. (yes/no)	Yes	Yes	
Transparency, access	Itemized price	An itemized price exists to show how the total price is composed. (yes/no)	No	Yes	
Access	Buy-Button	A Buy-button exists leading the user directly to the checkout. (yes/no)	Yes	Yes	
Access	Order Possibilities	The product can be ordered online. (yes/no) The product can be ordered offline. (yes/no)	Yes No	Yes No	
Access, risk reduction	Payment procedures	Different means of payment, e.g. credit card, debit card, cheque...	Yes	Yes	
Access	Shopping cart	A shopping cart-button exists transferring the product to the shopping cart. (yes/no)	Yes	Yes	
Access	User details upon registration	Details required for registration e.g. e-mail, name, date of birth...	Yes	Yes	
Transparency	Delivery time	The delivery time is quoted. (yes/no)	Yes	Yes	
Transparency	Duration of delivery	Duration of the delivery in business (5 days a week).	10	7, but asap	
Transparency	Means of transportation	Different means of transportation e.g. parcel service, mail order	No	No	
Extras					
Dialogue, access	Forum	A forum exists. (yes/no)	Yes	Yes	
Dialogue, access	Community	A community exists. (yes/no)	No	Yes	
Access	Exotic products	The product offered for individualisation is unusual or exotic. (yes/no)	No	No	
Dialogue	Blog entry	The configurator can be found in the cyLEDGE Know-how blog as well. (yes/no)	No	No	

Appendix 5: Interview questions

Ga naar de website www.styleshake.com. Het is niet nodig om een account aan te maken. Log in als gast (guest) en ontwerp een jurk naar je eigen smaak.

Vul voordat je gaat ontwerpen eerst de volgende vragen in:

1. Geslacht:
2. Leeftijd:
3. Internet ervaring in jaren:
4. Koop je weleens vaker kleding via internet en waarom wel/niet?
5. Ken je deze website al?
6. Wat is je eerste indruk van deze website?
7. Wat vind je ervan om online je eigen jurk te ontwerpen?

Ontwerp nu je eigen jurk. N.B.: Vermeld de tijd die je nodig had om de jurk te ontwerpen hieronder:

- Benodigde tijd:

Functionaliteit

Gebruiksvriendelijkheid:

- Wat zijn volgens jou de voor- en nadelen van het design programma op de website?
- Wat vind je van de volgorde van de keuzemogelijkheden?
- Wat vind je van de navigatie op de website?

Interactiviteit:

- Wat vind je van de klantenservice van Styleshake
- Wat vind je van de interactie tussen jou en Styleshake op de website?
- Wat vind je van de verschillende keuzes in stoffen en onderdelen?
- Wat vind je van de laadtijd van de website?
- Wat vind je van de toegankelijkheid van informatie op de website?
- Wat vind je van het bestellingproces?
- Wat vind je van de mogelijkheid om je ontwerp te delen, ontwerpen van anderen te bekijken en te beoordelen?

Psychologische factoren:

- Kun je jezelf met Styleshake identificeren en waarom wel/niet?
- Wat denk je van de veiligheid van de transactie/betaling?
- Hoe groot denk je dat de kans is dat je gegevens worden misbruikt (doorverkocht aan derde partijen bijvoorbeeld)
- Wat denk je van de veiligheid van deze website (mogelijkheid tot hacken en dergelijke)
- Wat vind je van de informatie die gegeven wordt bij de frequently asked questions (FAQ) op de website?
- Wat vind je van de free alteration service (gratis vermaak service)?
- Wat vind je van het feit dat je je geld niet terug kan krijgen?

Inhoud

Esthetiek

- Wat vind je van het design/ontwerp van de website?
- Hoe denk je over de presentatie/afbeelding van de stoffen?
- Hoe denk je over de presentatie/afbeelding van de designs/kledingelementen?
- Wat vind je van de avatar/paspop?
- Wat vind je van het aantal keuzes dat je krijgt betreft stoffen en kledingelementen?
- Wat vind je van de algehele stijl/sfeer op de website?

Marketing Mix

- Hoe denk je over de communicatie op de website van het bedrijf naar jou toe?
- Wat vind je van de leveringsvoorwaarden
- Wat vind je van de verschillende betalingsmogelijkheden?
- Wat vind je van je eindproduct/je ontworpen jurk?
- Hoe denk je over de prijs die je moet betalen voor je jurk?
- Zou je deze jurk voor deze prijs bestellen? Waarom wel/niet?
- Hoe zou je het vinden als je korting zou krijgen bij je eerste bestelling?
- Wat zou jij aantrekkelijke promotionele acties vinden?

Appendix 6: Processes at Designedbymyself

For the company Designedbymyself the processes (step-by-step) are described in detail below. By doing so it is possible to get a clear view how the company will look like when they are active. These processes are an addition on the value chain of Designedbymyself described in chapter 5.
The processes for the internet apparel company Designedbymyself are planned to be organized like in figure 6.1. Once the customers entered the website Designedbymyself to design a dress, they can to choose from the following options;

1. First the customer has to 'build' their own avatar in 3D, based on their own body measurements. Customers can also change their colour of the eyes, hair and skin. Based on the measurements of this avatar the garments are made.
2. After building the avatar, the customers can choose from 19 different colours and prints. All fabrics are jerseys.
3. Once they choose the fabric(s), they have the option to design a dress based on a standard model or a design from scratch.
4. When the choice is a standard model, they have the option to choose from five dresses; wrap, shirt, fitted, a-line and a strapless dress. Once the customers chose a model, they are able to change the fabric and by they are able to add notions and trimmings.
5. When the choice is to a design the dress yourself (from scratch) the customers are helped with a semi step-by-step procedure. First they have to choice what upper body they want, after that the neckline, the sleeves, waist panels, lower parts and different notions/trimmings have to be chosen.
6. Once they finished the garment successfully they can order the garment. They first have to pay the garment before the order will be produced. This 3D garment model will be converted into a 2D pattern.
7. This fabric will be laid down on the fabric and the pattern will be cut.
8. The patterns exist of several parts (sleeves, front panel, back panel etc), these parts depend on the type of dress. The parts are sewn together. Also the trimmings and notions are added here.
9. Once the dress is finished it will get ironed or steamed, when it is necessary. During this session also the quality will be checked.
10. After this quality inspection the order will be send directly (once a day) to the customers (by TNT).

Processes

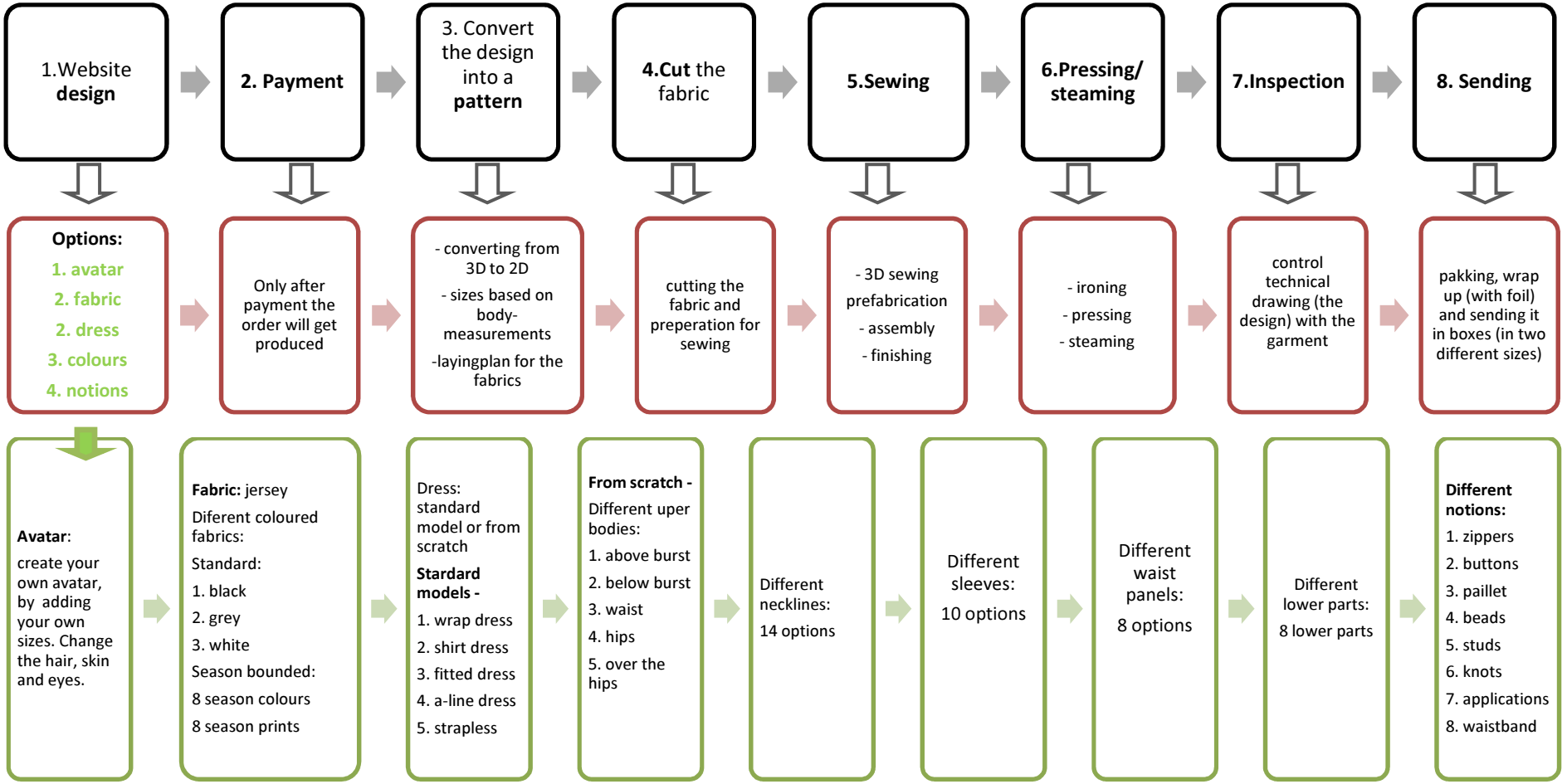

Figure 6.1: Processes of Designedbymyself

Appendix 7: Illustrations of Designedbymyself's design programme

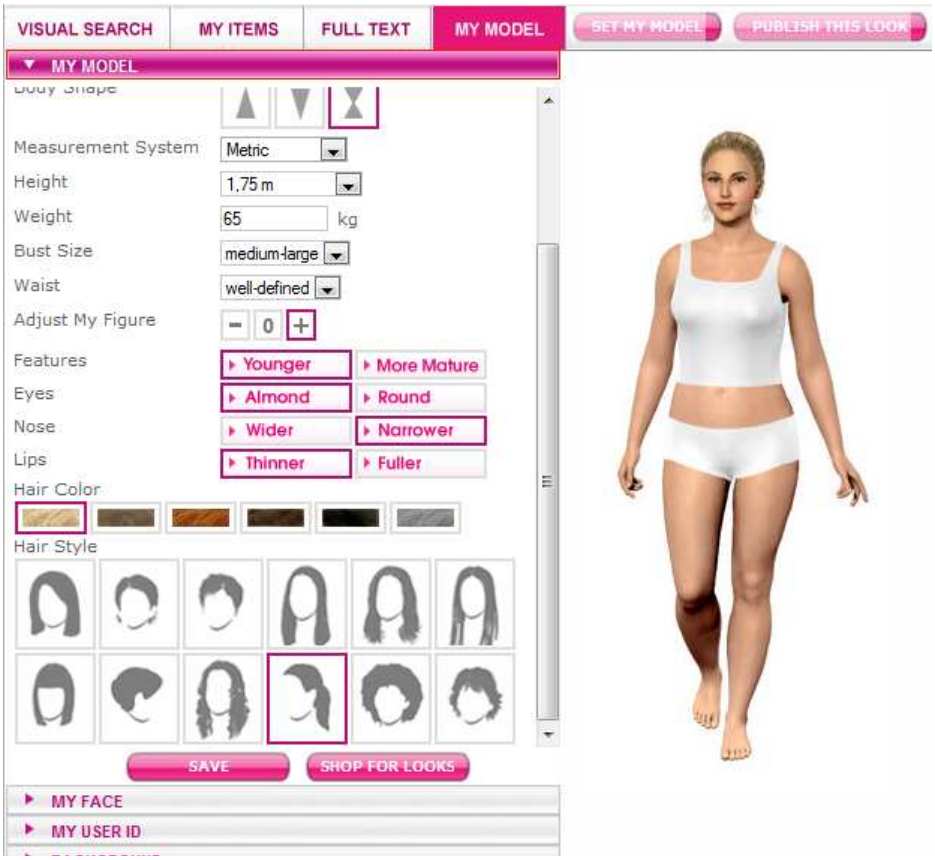

Figure 7.1: create your own real-life avatar

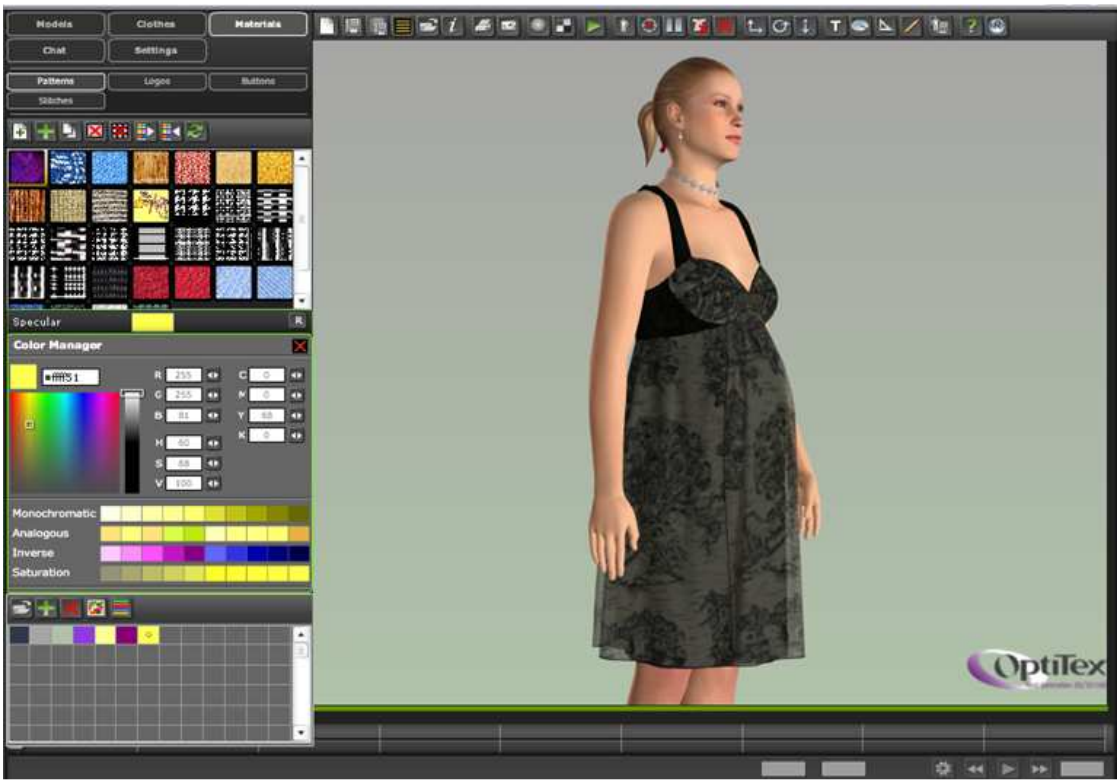

Figure 7.2: 3D designing

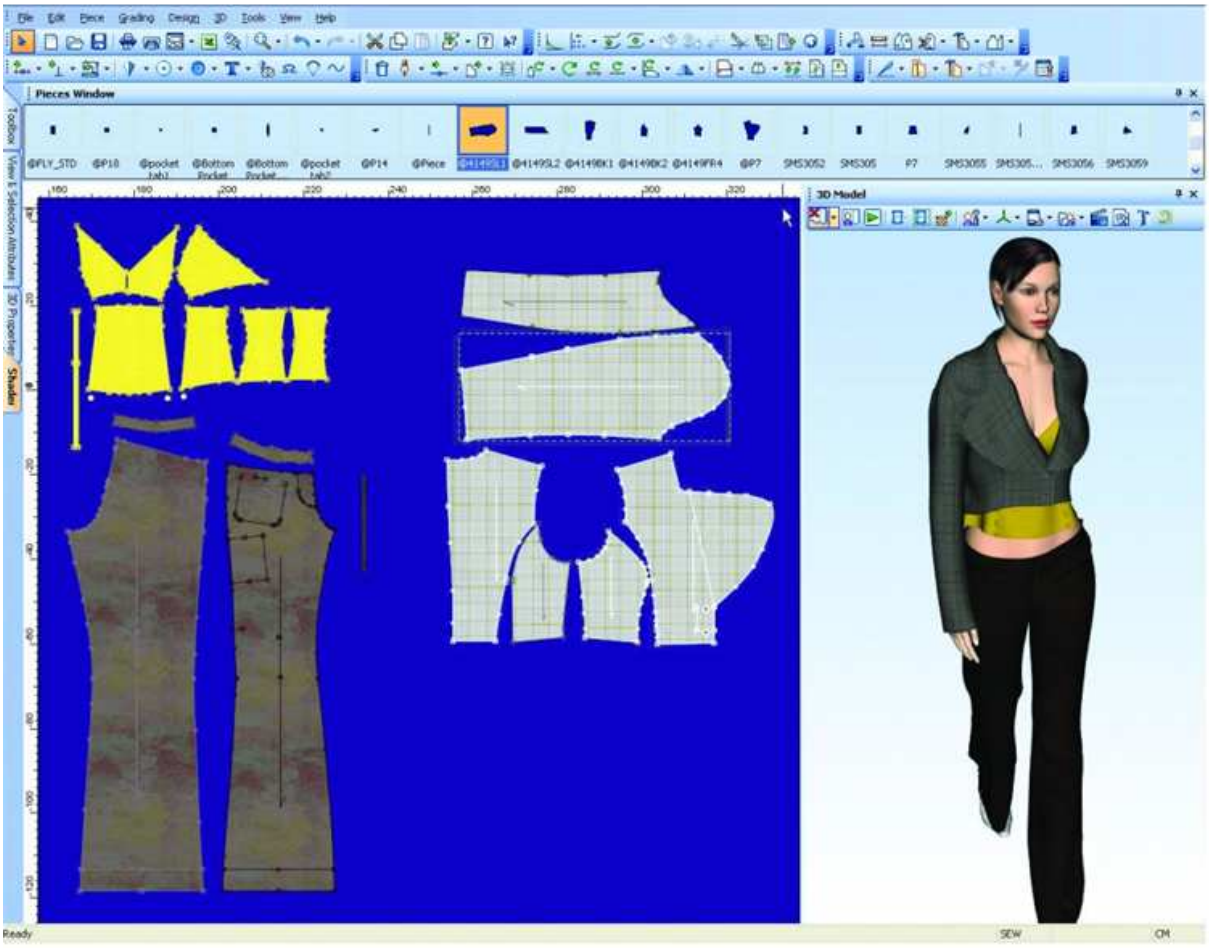

Figure 7.3: converting the 3D model into a 2D pattern

Appendix 8: Financial plan Designedbymyself

Total investments

	Start (t=0)	Year 1 (t=1)	Year 2 (t=2)
Fixed assets			
Buildings, refurbishing	€ 100,00	€ 100,00	€ 100,00
Machines, equipment, inventories [1]	€ 27.400,00	€ 8.266,67	€ 4.133,33
Means of transportation	€ 0,00	€ 0,00	€ 0,00
Total of fixed assets (A)	€ 27.500,00	€ 8.366,67	€ 4.233,33
Current assets			
Stock [2]	€ 1.855,00	€ 2.500,00	€ 2.500,00
Cash, bank, giro	€ 20.000,00	€ 500,00	€ 500,00
Total of current assets (B)	**€ 21.855,00**	**€ 3.000,00**	**€ 3.000,00**
Starting and first costs (C) [3]	**€ 1.100,00**	**€ 0,00**	**€ 0,00**
Total investment (A+B+C)	**€ 50.455,00**	**€ 11.366,67**	**€ 7.233,33**

[1] website, 3D avatar, turntool, laptops (with depreciation)

[2] 19 fabrics * €3 * 15metre = €855 + notions € 1000

[3] Optitex software €1000 + Chaimbre of commerce €100

Operating budget

Price=100	Year 1 (t=1)	Year 2 (t=2)
Turnover (excl. VAT)	€ 202.500,00	€ 324.000,00
Costs of buying/use of raw materials [5]	€ 40.000,00	€ 64.000,00
Services third parties [6]	€ 40.000,00	€ 64.000,00
Gross profit/added value	**€ 122.500,00**	**€ 196.000,00**
Operational coststs		
Personnel Costs	€ 0,00	€ 0,00
Production Costs	€ 0,00	€ 0,00
transportation/shipping Costs [7]	€ 12.500,00	€ 20.000,00
Offices and inventory	€ 100,00	€ 100,00
Depreciations [8]	€ 5.800,00	€ 5.800,00
Total operational costs	**€ 18.400,00**	**€ 25.900,00**
Net results	**€ 104.100,00**	**€ 170.100,00**
interest costs	€ 0,00	€ 0,00
Result before taxes	**€ 104.100,00**	**€ 170.100,00**

[5] (2.500 customers * €3 fabric * 1.5 metre)= € 11,250 + (2500 customers * €10 notions)= 25,000 = €36,250

[6] (€80 labour costs/3 type garments) = €27 * 2500 customers = €67.500

[7] €5 * 2500 customers + own transportation

[8] Depreciation laptops + avatars + website ex btw

Total capital

	Start (t=0)	Year 1 (t=1)	Year 2 (t=2)
List of own contributions			
Savings [4]	€ 50.000,00	€ 0,00	€ 0,00
Profits that remain in the company [5]	€ 0,00	€ 46.100,00	€ 100.100,00
Loans without interest	€ 0,00	€ 0,00	€ 0,00
Total of own capital (A)	**€ 50.000,00**	**€ 46.100,00**	**€ 100.100,00**
Foreign capital (long term)			
Mortgage	€ 0,00	€ 0,00	€ 0,00
Bank credit	€ 0,00	€ 0,00	€ 0,00
Other credit	€ 0,00	€ 0,00	€ 0,00
Foreign capital (short term)	**€ 0,00**	**€ 0,00**	**€ 0,00**
Suppliers credit	€ 0,00	€ 0,00	€ 0,00
Advance payments	€ 0,00	€ 0,00	€ 0,00
Total of foreign capital (B)	**€ 0,00**	**€ 0,00**	**€ 0,00**
Total available capital (A + B)	**€ 50.000,00**	**€ 46.100,00**	**€ 100.100,00**

[4] TOP= 20.000+20.000

[5] what remains after our own salary + paying back TOP

Overview sales /prognosis liquidity

Month	1	2	3	4	5	6	7	8	9	10	11	12
In:												
1.Start (cash, bank, giro)	€ 20.000,00	€ 1.462,96	€ 2.549,38	€ 7.625,00	€ 10.266,98	€ 14.612,65	€ 18.565,00	€ 28.811,91	€ 42.392,16	€ 51.065,00	€ 69.460,06	€ 92.274,88
2.Cash sales	€ 810,00	€ 1.620,00	€ 3.240,00	€ 4.860,00	€ 6.480,00	€ 9.720,00	€ 16.200,00	€ 20.250,00	€ 24.300,00	€ 28.350,00	€ 34.020,00	€ 52.650,00
5.VAT back	€ 0,00	€ 0,00	€ 4.232,78	€ 0,00	€ 0,00	€ 2.373,83	€ 0,00	€ 0,00	€ 6.626,54	€ 0,00	€ 0,00	€ 12.441,48
6.VAT on sales, debtors	€ 190,00	€ 380,00	€ 760,00	€ 1.140,00	€ 1.520,00	€ 2.280,00	€ 3.800,00	€ 4.750,00	€ 5.700,00	€ 6.650,00	€ 7.980,00	€ 12.350,00
7.Total income	€ 21.000,00	€ 3.462,96	€ 10.782,16	€ 13.625,00	€ 18.266,98	€ 28.986,48	€ 38.565,00	€ 53.811,91	€ 79.018,70	€ 86.065,00	€ 111.460,06	€ 169.716,36
Out:												
8.transportation costs ex	€ 50,00	€ 100,00	€ 200,00	€ 300,00	€ 400,00	€ 600,00	€ 1.000,00	€ 1.250,00	€ 1.500,00	€ 1.750,00	€ 2.100,00	€ 3.250,00
9.services ex	€ 160,00	€ 320,00	€ 640,00	€ 960,00	€ 1.280,00	€ 1.920,00	€ 3.200,00	€ 4.000,00	€ 4.800,00	€ 5.600,00	€ 6.720,00	€ 10.400,00
10.costs raw materials ex	€ 160,00	€ 320,00	€ 640,00	€ 960,00	€ 1.280,00	€ 1.920,00	€ 3.200,00	€ 4.000,00	€ 4.800,00	€ 5.600,00	€ 6.720,00	€ 10.400,00
11.Investments ex	€ 15.455,00	€ 0,00	€ 0,00	€ 500,00	€ 0,00	€ 0,00	€ 500,00	€ 0,00	€ 0,00	€ 500,00	€ 0,00	€ 0,00
12.total out ex	€ 15.825,00	€ 740,00	€ 1.480,00	€ 2.720,00	€ 2.960,00	€ 4.440,00	€ 7.900,00	€ 9.250,00	€ 11.100,00	€ 13.450,00	€ 15.540,00	€ 24.050,00
13.VAT on buys/costs/investments	€ 3.712,04	€ 173,58	€ 347,16	€ 638,02	€ 694,32	€ 1.041,48	€ 1.853,09	€ 2.169,75	€ 2.603,70	€ 3.154,94	€ 3.645,19	€ 5.641,36
14. Vat to taxes	*€ 0,00*	*€ 0,00*	*€ 1.330,00*	*€ 0,00*	*€ 0,00*	*€ 4.940,00*	*€ 0,00*	*€ 0,00*	*€ 14.250,00*	*€ 0,00*	*€ 0,00*	*€ 26.980,00*
15.Total costs	€ 19.537,04	€ 913,58	€ 3.157,16	€ 3.358,02	€ 3.654,32	€ 10.421,48	€ 9.753,09	€ 11.419,75	€ 27.953,70	€ 16.604,94	€ 19.185,19	€ 56.671,36
16.End result (7-15)=start of next month	**€ 1.462,96**	**€ 2.549,38**	**€ 7.625,00**	**€ 10.266,98**	**€ 14.612,65**	**€ 18.565,00**	**€ 28.811,91**	**€ 42.392,16**	**€ 51.065,00**	**€ 69.460,06**	**€ 92.274,88**	**€ 113.045,00**
amount of customers	10	20	40	60	80	120	200	250	300	350	420	650

average sales price (incl. VAT) **100**

only dresses

8. 5 euro per customer

9. 16 euro per customer (2h per customer*8euro)

10. 16 euro per customer (yarns, beads, ribbons, labels etc)