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Title: From idea to business model
'The transformation of service ideas into business models; A process model'

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Preface

Even though the theoretical disciplines used in this thesis are quite substantial in both quality and quantity, something does appear to be lacking. It provides food for thought when considering the fact that although scientific research is aimed at the creation of understanding, providing this understanding does not, strangely enough, always enable practical application. Especially in the area of social sciences where researchers are closely tied to their practitioner communities, more criticism about the fact that produced knowledge is not directly applicable to their respective community, exists. This issue is known as the rigor versus relevance debate.

When trying to make a contribution to the practitioner community, relevance will be sought. This is exactly what I tried to do with this research. Specifically, this research tried to combine several theoretical disciplines (i.e. Entrepreneurial, New Service Development, Business Model development) to try to create and provide knowledge about the development and process of new entrepreneurial activity. Even though I personally experienced this interdisciplinary (as a prerequisite) approach to be very complex, I tried to stay focused on producing something that would be relevant but could still contribute to the scientific body of knowledge as well. Sometimes however, as a former classmate and dear friend stated it, it felt like a never ending story.

Finally, now that this excruciatingly time-consuming and sometimes bothersome process is nearing its end, I can deal with the constant bullet rain of remarks and well meant questions about the status and progress of my research. Finally, the process I considered so many times to be endless is turning out to be a close start to a next chapter. When reaching this stage of completion however, I can only stop to wonder and appreciate the process, experience and the skill, perseverance and efforts of others who finished before me (although it wasn't really a photo-finish), consciously, for the first time.

The process would however not have come to fruition without a large amount of supporters. I would like to thank many of those that nearly drove me to the brink of insanity with motivational remarks and questions, as it was motivational support nonetheless. Special thanks goes out to my former fellow student and friend Yorrick Bakker whom I had the pleasure of working with for so long. Thanks to all of you, my partner Cathelijne, family, friends, classmates, supervisors and respondents for all your support, for the provision of input and for your time and efforts to read and discuss my thesis.

Rob Tuinte

Wierden, Januari 2011

Content:

Preface	2
Executive Summary.....	5
1. Introduction.....	6
1.1 Background	6
1.2 Previous Research and demarcation	7
1.3 Research Question and Objectives	9
1.4 Research strategy and thesis structure.....	10
2. Literature review.....	11
2.1 Entrepreneur.....	11
2.1.1 Entrepreneurship Framework	12
2.1.2 Entrepreneurship Initiation.....	13
2.2 New Service Development	14
2.2.1 New Service Development components.....	15
2.2.2 Established Development processes.....	18
2.2.3 The New Service Development Process Model	18
2.3 Business model Theory	23
2.3.1 What is a business model?	23
2.3.2 Business Model components.....	24
2.3.4 The Business Model development Process Model	26
2.4 Process models synthesis: New Service development and Business model	29
3. Methods.....	32
3.1 Research Design	32
3.2 Research method.....	32
3.3 Sample	33
3.4 Instrumentation	34
3.5 Data Analysis.....	35
4. Findings, analysis and synthesis.....	36
4.1 Sample information and characteristics	36
4.2 Entrepreneurial Phase	37
4.3 The Design process.....	38
4.3.1 Outcome dimension:	39
4.3.2 Process- and structure dimension:	40
4.3.3 Business Model components.....	40
4.3.4 Component Influences.....	41
4.3.4.1 The product Model:	41
4.3.4.2 The Market:	42

4.3.4.3	Strategic Intent:.....	42
4.3.4.4	Service delivery:.....	43
4.3.5	Influences and the Design order:.....	43
4.4	The domestic versus international design orientation:	43
4.5	Positive and negative development findings and influences:	46
5.	Conclusion and Recommendations.....	48
5.1	Research problem and question.....	48
5.2	Contributions to individual theoretical disciplines	48
5.2.1	New Service Development contribution	48
5.2.2	Business Model Development contribution	49
5.2.3	Service Entrepreneurship contribution.....	50
5.3	Conclusion: the main research question.....	51
5.3.1	Discussion.....	51
5.3.2	Research reflections.....	52
5.4	Recommendations.....	53
5.4.1	Practical recommendations.....	53
5.4.2	Recommendations for further research.....	53
	References.....	55
	Appendix 1: Nikos 4S Dimension Model	58
	Appendix 2: Prototyping Model.....	59
	Appendix 3: NSD Process Model elaboration.....	60
	Appendix 4: Business Model Components	62
	Appendix 5: Sequence of Development	63
	Appendix 6: Process Models	66
	Appendix 7: Interview Guide	67
	Appendix 8: Data analysis; List of Codes	72
	Appendix 9: Order of elements in the design process; a summary.	73
	Appendix 10: Positive and negative design results and influences.....	74
	Appendix 11: Issues, solutions and related design component.....	75
	Appendix 12: Design orientation differences; detailed design.....	77

Executive Summary

This study is directed towards uncovering the theoretical concepts concerned with the development of services and business models and specifies the order in which these concepts can be addressed in the transformation from idea to business model. In addition, it only focuses on the development of service entrepreneurship characterized by services with a high contact intensity and variety. Moreover, and in congruence with the international business nature of this study, the development differences between organizations with either a domestic or international orientation are analyzed to uncover their impact on the development process. The reason for this study is a general lack of a theoretical interdisciplinary approach to this specific kind of entrepreneurship development. As a result, theoretical knowledge about this development process remains limited which consequently also limits the availability of useable tools for entrepreneurs to aid in the development process.

A framework consisting of several theoretical disciplines (i.e. Entrepreneurial, New Service Development, Business Model development) was created containing all relevant theoretical concepts. This framework was used to develop a conceptual process model that depicts the expected sequence of development. An interview guide was subsequently created to collect data about the correctness and completeness of the developed process model. Potential respondents were identified and approached using a database with listed entrepreneurs provided by the Dutch institute for knowledge intensive entrepreneurship; NIKOS. Eight entrepreneurs that were allegeable as a respondent accepted the invitation and took part in an interview. Data saturation did to some extent occur, as the results appeared quite similar among respondents.

In contradiction to the expected theoretical process model which shows a very deliberate en calculative process, the process described by entrepreneurs during the interviews is mainly characterized by development as a result of a specific need. In short, a different development mindset and process was encountered. As a result, the proposed process model was developed using the interview data and refining it using the theoretical process model. The proposed process model can therefore be concluded as a reflection of what was encountered in practice. It however also provides a best 'practice overview' of the development process as it also includes theoretical elements that take into account the prevention of common issues encountered by multiple respondents. It also points out that current theoretical models could be complemented using these results.

The difference in design processes between organizations with either a domestic or international design orientation could neither be confirmed nor disconfirmed although evidence of no difference was concluded to be most plausible. Considering the fact that differences between and within groups did exist, the generalization options of the process model and therefore the need for additional differentiation, needs further consideration.

1. Introduction

1.1 Background

Not long ago European politicians and representatives of social and institutional groups believed that the small business sector would save Europe from the unacceptable and increasing unemployment rates due to endless series of efficiency and cost-cutting operations of the public and large business sectors (Wennekers & Thurik, 1999, p. 29). Employment statistics support these views. Even since the 1970s and 1980s, economic activity has gradually moved away from large firms to small firms. In the 1970s for example, the total employment share of the U.S. Fortune 500 stood at 20 percent, dropping to a mere 8.5 percent in 1996 (Wennekers et al. 1999).

Today, small business firms constitute a vital part of the total economic activity and job opportunities. Whereas the manufacturing and agricultural sector structurally shrunk in terms of employment opportunities, the services sector has shown an increase of 20 percent between 1961 and 1997 (Hagen, 2003, p. 3). The past years however, many small business firms and even industrial giants have been forced out of business due to the financial crisis, causing a surge of unemployment around the world. It seems that the small business sector must once again take on the role the European politicians and representatives of social and institutional groups bestowed on them some while ago.

Nurturing small business enterprises that constitute such a large part of the economic landscape could very well be a part of the solution to the current unemployment issues. Moreover, nurturing and increasing the rate of new business startups have also shown to lead to lower levels of unemployment (Wennekers et al. 1999, p. 29). It is however of vital importance for these small businesses to survive in order to sustain employment opportunities. According to Bullinger, Fahrnich & Meiren (2003), new service firms are continually pressured to deliver new and improved services. Competitive advantages over other firms they claim have to be created by subtle differentiations in their value propositions. New service ideas need to be operationalized into value propositions that are more valuable to their respective market than existing service products.

It seems that the success of new business ventures largely depends on the ability to create a good value proposition. Additional research has shown that innovation in products, services, and business models is the single factor contributing the most to the accelerating pace of change in the global business environment, outranking other factors related to information and the Internet, talent, trade barriers, greater access to cheaper labor and capital (Lai, Weill, & Malone, 2006). Therefore, not only the ability to develop a good 'product' but also the ability to conceive an innovative business model will determine the performance of a business startup. Therefore, this study aims to aid the new business startups of this particular sector by providing help to those that need assistance in developing a 'product' and business model.

1.2 Previous Research and demarcation

First, it is very important to make some clear distinctions and make choices about to which specific part of the new service development theory this study wishes to make a contribution. The typology devised by Fähnrich et al. (1999) is one of the few that has been concluded to have a considerable degree of practical relevance (figure 1) and is therefore the most obvious one to use. This service typology distinguishes four service types by using two attributes. These attributes, (1) *Contact intensity*, and (2) *Variety* were revealed to be the critical typology attributes by factor analysis (Bullinger, Fähnrich & Meiren, 2003, p. 6). Whereas *contact intensity* is seen as the measure of interrelationships between employees and customers, *variety* is seen as the total amount of determined manifestations of the service product.

Bullinger et al. (2003) claim that the difference between these service types is that service types with a relatively low variety tend to use traditional new product development tools to develop services. Due to limited exposure to customer variances, the characteristics of these services resemble to a great extent the characteristics of physical goods. Next to this, developing new services for the service typologies that experience high contact intensity is very different (Bullinger et al. 2003).

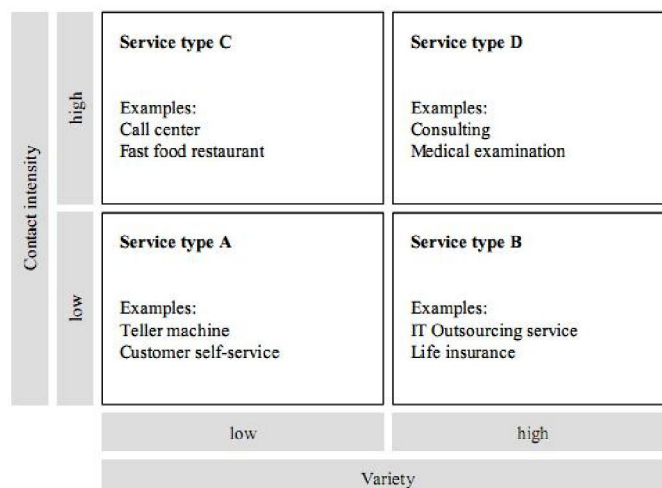


Fig. 1 *Service typology* (Bullinger, Fähnrich, & Meiren, 2003, p. 6)

Considering the difference in service development and tools already available to service firms with low contact intensity, a greater contribution can be made to service development for firms with a high contact intensity and variety, especially when considering the small body of literature covering this subject in this particular segment (De Jong & Vermeulen, 2003, p. 6). Not only for apparent reasons will service type D however be more interesting to select. The fact that successful service innovation relies on more than one dimension of service development (Goldstein, Johnston, Duffy, & Rao, 2002; De Jong & Vermeulen, 2003) and such a high variety of manifestations of the service product is encountered makes service development much harder and iterative.

Over the last decades the body of academic research on business model theory has grown extensively. While most academic research on business models was done in the context of e-business, strategy, information systems and business/economic management literature (Weill, Malone, D'Urso, Herman, & Woerner, 2006, pp. 3-5; Pateli & Giaglis, 2004, pp. 302-303), the majority of their content was mostly focused on the sub-domains *definitions, components* and *taxonomies* (Pateli & Giaglis, 2004, p. 305). Of over thirty academic studies about business models identified by Pateli & Giaglis (2004) between 1994 and 2003, only three were concerned with design methods and tools for developing business models (Pateli et al. 2004, p. 305). Moreover, developed concepts and tools mainly consist of UML diagrams or Petri nets whereas few concepts and tools exist that help companies and their managers specify their more conceptual business models on a higher abstraction level (Osterwalder, 2004, p. 14). The definition and components of the business model are very general and commonly used in all business model research. Components also make up for a vital part of the business model design since they concern their individual design. The use of business model taxonomies would require this study to make additional differentiations in its focus (i.e. differentiating service type D further). The business model taxonomies, however, are no different in terms of business model components. This means that the design and importance of business model components and not the presence or absence of the components themselves would differ (Weill et al. 2006, pp. 3,4). Therefore, no additional differentiations are made.

Even though additional differentiations are not required and to some extent even undesirable on the basis of New Service Development and Business Model theory, other distinctions may have to be made on the basis of the nature of entrepreneurship. Due to efficient worldwide communication technology and transportation, and decreasing governmental protectionist policies it has become possible and simultaneously necessary for many new firms to view their operating domains as international (McDougall & Oviatt, 2000, p. 902). Many academics have therefore also observed accelerated internationalization even among the smallest and newest organizations (McDougall & Oviatt, 2000, p. 902). Because research concerning the development differences between new organizations characterized by a domestic or international scope by McDougal (1989) has revealed significant differences, this study may have to make additional distinctions in the applicability of its content.

In short, this study aims to contribute to the existing new service development research field by *proposing a development process model that depicts the sequence of the elements important to service development for new service firms specifically aimed at services characterized by a high variety and contact intensity (service type D)*. This study intends to contribute to the existing business model research field by *proposing a development process model that depicts the conceptualization of a business models on a higher abstraction level (for new service firms in the process of developing a service characterized by high a variety and contact intensity (service type D)) by showing the origin*

and sequence of the design of the business model components. This study will try to contribute to the existing Entrepreneurship theory by examining the differences between new service firms that are characterized by either a domestic or international scope in terms of the sequence in which the elements important to service development (concerning service type D) and business model development are addressed.

The intention however is not merely to contribute theoretically. In fact the intention was already stated as: *"to aid new service business startups by providing help to those that need assistance in the development of the aforementioned tasks: Developing a 'service product' and Business model."* It is expected that information about the sequence in which the elements of new service development and business model theory are encountered and how they relate to one another will contribute both theoretically and practically by helping practitioners to prioritize parts of the development and making objective and informed choices about how to design their content.

1.3 Research Question and Objectives

In order to help new service firms that have no prior experience or knowledge about the process of developing a service product or a business model, it is important to determine the concepts concerned with the development of services and business models and the sequence in which new service firms will encounter these concepts on their way to capitalizing on their developed services. The research question is therefore stated as:

" Which concepts concerned with the development of services and business models are appropriate for transforming a service idea (service type D) into a business model and how can these concepts be addressed in the process involved?"

By answering this question it is first and foremost the intention of this study to put a focus on- and gain additional insights about- the entire development process of new service firms that have developed a new service and capitalize on it. As stated before, it is the belief of this study that the sequence in which the elements of new service development and business model development are encountered in the process of transforming the initial business idea into a business model- and how they relate to one another- is imperative to prioritizing and making well considered and informed choices about how to design their content. Therefore, the second goal of this study is of a practical nature: providing new service firms that have no prior experience or knowledge about this process (those believed to benefit the most from such a process model) with an insightful process model to stimulate a better development result.

1.4 Research strategy and thesis structure

This thesis will elucidate the study in three constituent parts. The first part is deductive containing a *review of available literature* which is addressed in chapter 2. This review will summarize and elaborate the domains, concepts and interrelations of the theoretical framework required to design the intended process models. Theoretical domains will be reviewed in separate sections and are then dissected into conceptual design elements. Each of these sections is then concluded by creating a sequence in the extracted design elements in terms of their development. Chapter 2 is concluded with a section concerned with the synthesis of the domain specific process models.

The second part of this study contains the *research methods*, which is described in chapter 3. The main research question purposefully states that it intends to answer the question which "*concepts are concerned with the development....*"; therefore not merely the known (theoretical) conceptual design elements are sought. In addition to the theoretical study, field research is performed with the intention to verify the theoretical process model and to complement it (if possible) with additional qualitative data. Therefore, in order to answer the research question, this chapter describes information about its sampling, required data collection, instrumentation and data analysis.

The third and final part is described in chapter 4 and contains the outcomes of the data collection and the analysis thereof. The analysis will aim towards the verification and improvement of the theoretical framework (i.e. process model) by also trying to identify additional concepts, interrelations or deviations in the sequence of development. Chapter 5 will conclude this thesis by implementing a proposal for a process model while simultaneously stating the perceived shortcomings and completeness of this study by pinpointing the manner in which future research would be able to complement this study.

2. Literature review

2.1 Entrepreneur

en-tre-pre-neur (än'tr ·pr ·nür) n. One who undertakes to start and conduct an enterprise or business (Standard Desk Dictionary, 1974).

en-tre-pre-neur (än'tr pr nür), --1. a person who organizes and manages an enterprise, esp. a business, usu. with considerable initiative and risk (Random House Webster's college dictionary, 1992).

entre-pre-neur (än tr pr n r) n. a person who organizes and manages a business undertaking, assuming the risk for the sake of the profit (Your Dictionary.com, 2009).

The term entrepreneur historically defined someone who undertakes a significant project or action, as partially shown in the oldest dictionary reference used. This term was later coined to be someone who shifts economic resources in to an area of higher productivity and greater yield, "Entrepreneurs create value" (Dees, 1998, p. 2). This description presumes an entrepreneur to be a catalyst for change as it uses resources in different ways, presuming others will follow. Drucker (1986) however, claims that an entrepreneur does not need to change things to be entrepreneurial, but sees them as exploiting the opportunities that change; "*The Entrepreneur always searches for change, responds to it, and exploits it as an opportunity*" (Dees, 1998, p. 2). Entrepreneurs are concluded to be innovative and the startup of a business is thus neither a necessary nor a sufficient condition to be labeled as an entrepreneur.

Dees (1998) mentions another addition by Howard Stevenson, who researched the differences between entrepreneurial and "administrative" management. Stevenson suggests that the heart of entrepreneurial management is the pursuit of opportunity without regard to resources currently controlled. Entrepreneurs do not let their initial resource endowment limit their options (Dees, 1998, p. 3; McDougall & Oviatt, 2000, p. 903). Although this study concerns new business startups and theoretically the startup of a business is not considered to be a necessary or sufficient condition in defining an entrepreneur, this study does use the terminology- and entrepreneurial theory because of the inherently innovative focus- and mostly low resource endowment of new startups focused on in this research.

2.1.1 Entrepreneurship Framework

Section 1.2 already stated the possible need for additional distinctions due to the organizational development differences of entrepreneurship characterized by a domestic or an international scope. Whereas entrepreneurship with an international scope is, for example, generally characterized by strategies of broad market coverage through developing and controlling numerous distribution channels and serving numerous customers in diverse market segments, entrepreneurship with a domestic scope is generally characterized by an emphasis on a production expansion strategy and customer specialization strategy (McDougal, 1989, p. 388). Another useful and very relevant source of differences is found in the body of research concerning *born-globals*¹. Born globals are stated to be young entrepreneurial firms with a strong innovation culture (Knight & Cavusgil, 2004, p. 127) and international entrepreneurial orientation which constitutes the firms overall innovativeness and proactiveness in the pursuit of international markets (Knight & Cavusgil, 2004, p. 129). Subsequently, It is argued that the possession of this orientation gives rise to different 'processes, practices, and decision making activities' aimed at- and associated with successful entry into new markets (Knight & Cavusgil, 2004, p. 129).

The differences between entrepreneurship with either a domestic or international scope is explained by the scope mechanism of the '*4S model of entrepreneurship in Networks*'; conceived by NIKOS² (Appendix 1). The 4S Dimension model depicts the value creation process along with four mechanisms (i.e. Scope, Scale, Skill & value and Social network) that operate concurrently and influence the value creation process in a structured, albeit non deterministic, way (Groen et al. 2004, p. 10). It subsequently describes the four mechanisms in terms of their relation to each of the phases of the value creation process. The focus of this study is however placed at the content of the three sequential phases of the value creation process (i.e. opportunity recognition, opportunity preparation and opportunity exploitation). Due to the fact that the four mechanisms described in the 4S dimension model are not an integral part of the design process and merely affect it, the influences of the scope dimension (international versus domestic scope) on the value creation process, and not the dimension(s) itself, are covered in this study.

In short, several theoretical disciplines point out that differences in the conceptual design of new business ventures with either a domestic or international scope exist. The Nikos '*4S Model*' subsequently points out that this difference manifests itself in the value creation process due to a difference in scope. Using this framework, this study will try to determine the effect of this difference in scope on the sequence of concepts, concerned with the development of services and business models, in the value creation process.

¹ A business organization that, from or near their founding, seeks superior international business performance from the application of knowledge-based resources to the sale of outputs in multiple countries (Knight & Cavusgil, 2004, p. 124).

² research institute of the University of Twente concerned with advancing business incubation and knowledge intensive entrepreneurship

2.1.2 Entrepreneurship Initiation

Because this research focuses on new service startups, it is therefore important to know what drives entrepreneurs to start up a new firm so the starting point of 'entrepreneurship' can be pinpointed and the entrepreneurial needs for structural development facilitated from there on. Numerous models of entrepreneurial opportunity recognition and development are available, all of which state the utmost importance of identifying and selecting the right opportunities (Ardichvili, Cardozo, & Ray, 2003, p. 106). The major factors argued to influence the core process of opportunity identification and development are; (1) Entrepreneurial alertness, (2) Information asymmetry and prior knowledge, (3) Social networks, (4) Personality traits, and (5) the type of opportunity itself (Ardichvili, Cardozo, & Ray, 2003, p. 106).

In a more abstract sense, one could argue that it is most likely for the entrepreneur to receive external stimuli from which the opportunity/idea(s) is generated. It is then argued that the first- and second step of the entrepreneur is the recognition (based on the opportunity identification factors) of an opportunity/problem and a mental formulation of the specific outcome that is needed to 'solve' this 'problem' (Ardichvili et al. 2003, p. 117). In short, this is the first step of the value creation process of the NIKOS 4S model which is consequently also used as the first step for the process model developed by this study. The subsequent steps of the value creation process are described using new service development and business model development in the next sections.

2.2 New Service Development

Service:

"an activity or series of activities of more or less intangible nature that normally, but necessarily, take place in interactions between the customer and service employees, and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems"(Grönroos, 1990; Dolfsma, 2004, p. 2)

Today, the principal challenge facing (new) firms, is the continuous pressure to deliver new and improved services (Bullinger et al, p. 2). Subtle differentiations in the form of innovative services constitute unique selling propositions and a competitive advantage for firms. Innovation hence, is the keyword. Especially when entering a market, a clear and innovative value proposition needs to be offered to customers that includes some form of competitive advantage over traditional players in the market (Hayes, 2005, p. 19). This is necessary because established players already have a substantial advantage in volume and new players have no brand name to rely on when trying to attract new customers (Greenwood, Li, & Deephouse, 2005).

The latter facts all have a significant impact on the development of services of new service firms. Another important aspect is the specific nature of the services this study aims at (high contact intensity and variety). This particular type of service requires the service provider to offer services tailored to the needs of the customer. Both variety and customer experience/needs have a lot of impact on the design of the service that is provided. As described earlier, the sensible development of a service is critical to enter the service market and to do that, the service development process also needs to take into account the specific setting of the developer and the type of services it wishes to develop. Current service development models are lacking in such distinctions which is a known problem of these models (Bullinger et al, p. 10). The literature review depicted in the next sections will therefore explicitly take into account both the nature of the service type and the 'novelty' of the value proposition that new service firms need to realize.

2.2.1 New Service Development components

To design a service, it is particularly useful to understand the characteristics and attributes of a service. Firstly, all services can be broken down and characterized by three different dimensions (Bullinger et al, 2003, p. 3). All three dimensions (Structure-, process- and outcome dimension) must be taken into account when developing a service (Bullinger et al, 2003, p. 4). Consequently, these dimensions should have design models and concepts of their own. The sum of these dimensions and their interrelations results in a service concept as shown in figure 2.

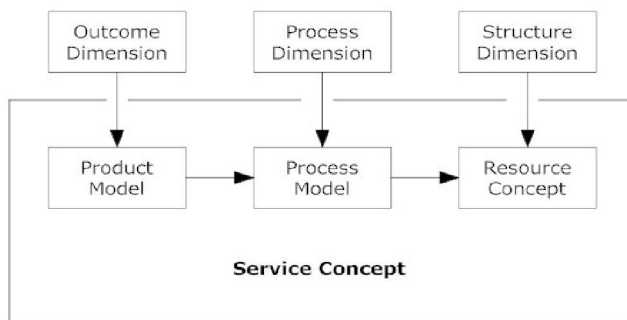


Fig. 2 The service Concept (Bullinger, Fähnrich, & Meiren, 2003, p. 4).

The Outcome dimension is characterized by the material or immaterial consequence for external factors. To achieve an intended consequence, one or more product model(s) that will stimulate the particular consequence need to be developed. Typically, product models comprise a definition of the service content and a structural plan of the service products (Bullinger et al, 2003, p. 4). Because the goal is to achieve a desired outcome, product models define *what* the service does. Subsequently, process models describe *how* the outcome is achieved. The entire process dimension is concerned with mapping how the service is performed on or with the external factors integrated in the process (Bullinger et al, 2003, pp. 3,4). The development of a process model also facilitates cost simulations due to the ability to make preliminary estimates of the costs for all individual activities in the process. The structure dimension subsequently contains the ability and willingness to deliver the service. The resource concept that needs to be developed here focuses on planning all resources (i.e. human resources, operating resources, access to information, communication technology (Goldstein, et al, p. 126)) that are necessary to perform the services subsequently (Bullinger et al, 2003, p. 5). Although this focus is primarily aimed at planning, the ability and willingness to deliver the service is also to a great extent dependant on the quality of the individual resources (e.g. competence of staff, quality of communication channels, adaption to customer taste (Bullinger et al, 2003, p. 5)).

The service concept in figure 2 constitutes a detailed description of *what* is to be done for the customer and *how* this is to be achieved (Goldstein et al, 2002, p. 123). Other definitions of the service concept entail how the organization wishes its service to be perceived by its stakeholders (Goldstein et al, 2002, p. 124). The service concept can therefore be concluded as a core element in the process of new service design, development and innovation. The service concept is hence quite common in NSD literature and even believed to be the central component in designing services (Goldstein et al, 2002, pp. 122,123). Although the model depicted in figure 2 is to a certain extent very valuable on a practical level, it does not explicitly facilitate nor does it depict the need for different approaches to service development as stated in section 2.2. It does not take into account the extent to which the service needs to have an innovative nature or the nature of the service product itself (Variety and contact intensity). These things are however of critical essence not only for the service itself, but also for the service delivery system and its other dimension (Goldstein et al, 2002, p.122; Bullinger et al, 2003, pp. 7-8). The development of a service with low contact intensity and no variety for example, requires a very different approach than the development of services with a high contact intensity and variety (Bullinger et al, 2003, pp. 8,9,10). To a certain extent, service development with low contact intensity can be facilitated by using traditional product development methods (Bullinger et al, 2003, p. 7), whereas service development with high contact intensity requires the mapping of interacting soft factors, rendering them plannable (Bullinger et al, 2003, p. 7). The model of the service concept by Goldstein et al (2002), is more facilitative in this sense (figure 3). One important distinction between the service concept as shown in figure 2 and the service concept delineated by Goldstein et al (2002) is the reciprocal relation of the service concept, the product- and process model and the resource concept. Another important distinction is that Goldstein et al. (2002) include other aspects, like strategic intent, customer feedback and experience, and value that are important to the content of the service concept and hence, service design.

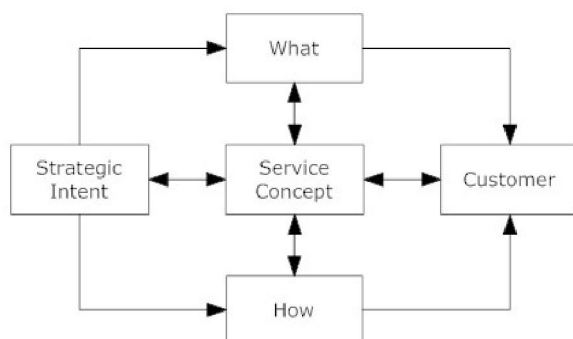


Fig. 3 The service concept (Goldstein, Johnston, Duffy, & Rao, 2002, p. 124)

Figure 3 more accurately depicts the interactions of soft factors needed for developing services with high contact intensity, but it lacks in providing concepts that could be perceived to be of practical relevance which is also a known problem in current literature

(Bullinger et al, 2003, p. 10). The model (figure 2) containing the service development dimensions and the model of Goldstein et al. (2002) (figure 3) however, contain similar concepts such as the service concept and the 'what' and 'how' of the service development. A synthesis of these models containing both the mental map of the valuable interactions of the soft concepts and the slightly more practical design dimensions of may create a better understanding and better approaches about the development of such services.

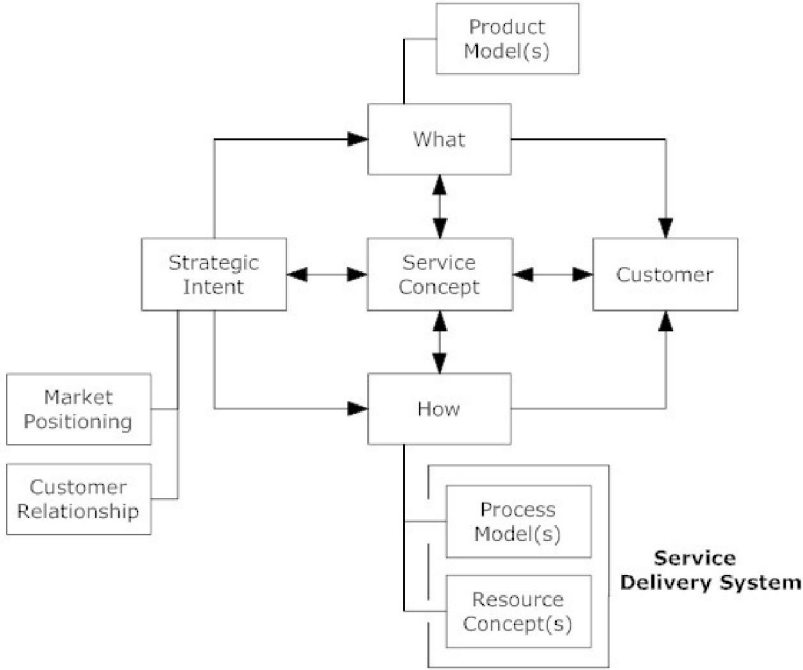


Fig. 4 The service concept in service design adapted from: (Goldstein, Johnston, Duffy, & Rao, 2002; Bullinger, Fähnrich, & Meiren, 2003).

The 'what' and 'how' in figure 4 include the product- and process model and the resource concept as described by Bullinger et al. (2003). The synthesis of these service concept models provides a more explicit description of the design elements when focusing on a service that has to facilitate subtle differentiations in the selling proposition as described in paragraph 2.2. Moreover, it better suits the nature of the service- delivery and design when considering the nature of the service (high contact intensity and variety), the vital role of customer needs in shaping and delivering the service and the importance of a concurrent strategy.

This model is viable for the purpose of this study, as it clearly includes the fact that a clear value proposition needs to be developed for a particular service type and setting (which entails customer interaction and feedback, formulating a strategy intent etc.), as stated in section 2.2. This model hence, contains the individual components and some interesting interrelationship which this study will use in the development of the process model depicting the sequence in which these concepts are addressed. To do this however, this model needs to be dissected in order to establish a subsequent order of steps.

Additionally, established development processes that provide insights into existing process models of service development will be reviewed first and used as a facilitator/reference to create subsequent steps.

2.2.2 Established Development processes

Models containing development processes that are of use to this research are all but widely theorized or even widely described in detail (Bullinger et al, 2003, p. 10). This thesis will however use some of the theorized development processes to uncover some development steps. Existing development process models can be split up in categories such as *waterfall models*, *spiral models* and *prototyping models* (Bullinger et al, 2003, pp. 8,9,10). One in particular should suit the needs of the service entrepreneurs this study focuses on: the prototyping models. Due to fast market changes, companies are forced to launch new 'service products' before they are polished, efficient, and contain all desired functions and options (Hayes, 2005, p. 20). Consequently customer interaction is increasingly important in the success of the initial- and re-development of services. Some even go as far to claim that co-creating 'products' with the customers is the very basis of value (Prahalad & Ramaswamy, 2004).

The prototyping model (appendix 2) shows that it accounts for these needs by creating early prototypes and then refining its key attributes by synthesizing customer experiences. Only at a later stage is a more refined, polished and efficient master design formulated. As described, it is important to include the customers in the design of the service. Although prototyping models inherently underline the importance of customer inclusion (Bullinger et al, 2003, pp. 9,10), due to the lack of detailed studies dealing with the use of prototyping models in connection with service development and the common lack of detail in these models (Bullinger et al, 2003, p. 10), they cannot be used exclusively to find subsequent steps.

2.2.3 The New Service Development Process Model

This section uses the initiation of entrepreneurship and the design components of NSD described in the previous sections to create a theoretical process model in which the sequence of these elements is depicted 'chronologically'. Considering the fact that this process model will be used as part of a larger process model devised specifically for practical usage, the depiction of the process model in this section is somewhat simplified to avoid confusion concerning the process and the practical application. A more informative elaboration of some of the steps is attached as appendix 3.

When taking into account the initiation of entrepreneurship summarized in section 2.1.2 and the model depicted as figure 4, the "*What*" could be concluded to affect the strategic intent more than the strategic intent affects the "*What*". This would be true for both new- and even improving existing services that would require novelty to differentiate their value proposition because after a certain service product crystallizes from a perceived

need, the strategic intent should then be formulated in a way that it is also focused on satisfying customer needs (Goldstein, Johnston, Duffy, & Rao, 2002, p. 124). Moreover, the specific problem and solution in the form of the service will partly determine the target clientele. This clientele will then have specific needs and will require the service- and possibly even the service delivery system to have specific characteristics. The aspects of the problem and the service would thus determine the setting and its evolving requirements.

1.	Opportunity Identification
2.	Develop Business Idea
3.	Creating an Initial Service Product

Fig. 5 Service Development Process Model; First development steps

Following this argumentation, the first step in the process from idea to business model after the entrepreneurship initiation would then be to start with the concretization of the outcome dimension resulting in one or more product models (figure 5). Moreover, companies are forced to launch new ‘products’ before they are polished, efficient, and contain all desired functions and options due to rapidly changing markets and information technology (Hayes, 2005, p. 20). It is therefore of the utmost importance to include the customer in the design of the service as soon as possible, consequently reducing the chances of initial failure and hence the wasting of valuable resources. This is especially important for this specific service type (high contact intensity and variety) due to the specific, tailor-made services that customers require. The services and their content are thus very dependent on customer input, which is also depicted by figure 4 and underlined in the elaboration of *prototyping models* (Bullinger, Fähnrich, & Meiren, 2003, pp. 9,10). Clients therefore, need to be included in the design process, preferably early on in the design process or a bit later by providing feedback on early prototypes (appendix 2).

1.	<i>Opportunity Identification</i>
2.	<i>Develop Business Idea</i>
3.	<i>Creating an Initial Service Product</i>
4.	Specify the Market

Fig. 6 Service Development Process Model; Early involvement of customer in Service Design

The specific needs of the client will naturally work its way through the specific configuration of the service concept and hence, each individual part. Moreover dimensions that make up the service concept such as the strategic intent or a service delivery system without any clue as to what the target clientele wants, is likely to cause a situation where the services offered are perceived as poor-value by the consumers (Goldstein, Johnston, Duffy, & Rao, 2002, p. 124). Therefore, the product model(s) and the target clientele emerging from the service idea will shape the rest of the service concept and its individual components.

Entrepreneurs can however also choose to ignore (or be ignorant towards) customer needs and desires. Therefore, the only factor on which the customer has no initial influence is the strategic intent as depicted in figure 4. This basically means that not only customer interaction (such as customer co-creation (C.K. Prahalad, 2004)) but also the strategic intent shapes the product model and the way the services are delivered (Goldstein, Johnston, Duffy, & Rao, 2002, p. 124). Both have an understandable impact on ‘what’ and ‘how’, as both have the tendency to require the product model and service delivery to have certain characteristics. As specified earlier, and in contradiction to figure 4, direct customer interaction with the product model is very much recommended for this particular service type. Also in contradiction with figure 4 is the importance of customer interaction with the type, nature etc. of service delivery. As with gaining competitive advantage through innovation in the service delivery (De Jong & Vermeulen, 2003, p. 8), adhering to customer needs in service delivery can also be perceived as extra value by customers (Goldstein, Johnston, Duffy, & Rao, 2002, p. 124).

1.	<i>Opportunity Identification</i>
2.	<i>Develop Business Idea</i>
3.	<i>Creating an Initial Service Product</i>
4.	<i>Specify the Market</i>
5.	Formulate Strategic Intent
6.	Specify Service Delivery
7.	Revise Service Product

Fig. 5 Service Development Process Model: customer interaction.

Figure 7 basically depicts the variables that make up the *outcome dimension* (with exemption of *Opportunity Identification* and *Develop business idea*) as described by Bullinger et al. (2003) (figure 2). Remember that the outcome dimension, as described in section 2.2.1, is characterized by a material or immaterial consequence for the customer. The product model (the content of the service product), service delivery (the intent of the manner of delivery) and the strategic intent (i.e. the manner in which strategy is formulated, the intended market positioning and customer relationship) all have a direct effect on this material or immaterial consequence for the customer. Mark that at this point, not one variable is concerned with the facilitation of actual delivery. This process of delivery is the second and subsequent dimension described by Bullinger et al (2003) and it describes how the desired outcome is actually achieved.

8.	Requirement Analysis
9.	Formulate Processes
10.	Plan Resources

Fig. 6 Service Development Process Model: Requirement analysis at the foundation of a waste-free process model.

Before the process(es) can be mapped however, questions such as: “ *What resources are needed to provide the service, how can these resources be acquired?*” come to mind. Hence, before the process of delivery can be mapped, one needs to know what resources are needed to create the ‘product’ and support delivery. Moreover, the objective of the process dimension is to formulate models without the inclusion of non-value adding activities (Bullinger, Fähnrich, & Meiren, 2003, p. 4) which as a result, makes a thorough requirement analysis stand at the foundation of the process model.

After the requirement analysis has surfaced all necessary resources such as ‘suppliers’, human resources, technology, physical facilities and equipment (Goldstein, Johnston, Duffy, & Rao, 2002, p. 126), processes stating the way the service is performed on or with the external factors integrated in the process, can be formalized and documented to facilitate a smooth and efficient service delivery. Process models, as described earlier in section 2.2.1, also facilitate cost simulations (Bullinger, Fähnrich, & Meiren, 2003, p. 4), hence allowing the service entrepreneur to estimate the service costs. Finally, once the process model(s) has been formulated, the more in-depth resource concepts can be formulated, which focuses on making sure the required resources are available, and subsequently planning them to execute the service delivery.

Even though all the dimensions and variables described in NSD literature review are now ordered in terms of their development (figure 8), the model has yet to adhere to the prototyping nature of development as described in section 2.3. Considering the fact that the other models like the model designed by Bullinger et al. (2003) describe no further process/actions or models, one would think that these models consider the development process to be complete. This being the case, it is assumed that the first prototype service is ‘completed’ with the completion of the latter process, mostly because of the fact that even prototypes need to have had these fundamental considerations before they could have been exploited even for a brief moment. As theorized in the existing development prototyping models, the prototype will be refined as market experiences and feedback are acquired. The service will most likely change after the first concept launches solely due to customer input or lack thereof (figure 9), after which it will gradually turn into a master design (figure 9) as depicted in the prototyping model by Shostack and Kingman-Brundage (appendix 2).

8.	<i>Requirement Analysis</i>
9.	<i>Formulate Processes</i>
10.	<i>Plan Resources</i>
11.	Launch Prototype
12.	Shape Master Design

Fig. 5 Service Development Process Model: Prototype possibilities and Master Design.

Even though this model inherently embodies the answer to two of the most important questions, *Who is the customer?*, and *What does the customer want?*, the economic logic that explains how the customer can be served with value propositions at an appropriate cost (among other things), remains to be divulged. Business model theory is used to provide more approaches and insights in the way the pieces of the business fit together, eventually adding important parts to the process model. Figure 10 depicts the full process of New Service Development.

1.	Opportunity Identification	7.	Revise Service Product
2.	Develop Business Idea	8.	Requirement Analysis
3.	Creating an Initial Service Product	9.	Formulate Processes
4.	Specify the Market	10.	Plan Resources
5.	Formulate Strategic Intent	11.	Launch Prototype
6.	Specify Service Delivery	12.	Shape Master Design

Fig. 10. Service Development Process Model: A completed service development process.

2.3 Business model Theory

Although the latter sections have stated the intention of creating a business model, none have explicitly elaborated its underlying meaning, purpose and design. Hence this section shall elaborate why this theory and the application thereof could be of vital importance to entrepreneurs.

2.3.1 What is a business model?

"The term business in the expression business model relates to "the activity of buying and selling goods and services" and earning money"(Osterwalder, 2004, p. 17).

"A model is a simplified view of a complex reality. It is a means to creating abstraction, allowing you to eliminate irrelevant details and focus on one or more important aspects at a time"(Eriksson & Penker, 1999)

A business model is hard to define. Many 'definitions' have been created and they are seldom the same. According to the latter quotes, a business model can be concluded to be a simplified view/description of how a company buys- and sells goods and earns money. A business model is not the description of a complex social systems itself, it merely describes how the pieces of a business fit together, uncovering the business logic of a specific firm (Osterwalder, 2004; Magretta, 2002). The business logic can be understood as '*the way a company makes money, in other words, what it offers, to whom it offers it and how it can accomplish this*' (Osterwalder, 2004, p. 17). Hence, every organization that is able to achieve a profit can be concluded to have a viable business model. Such a model can either be implicit or explicit (Margretta, 2002, p. 6) because even though every manager and entrepreneur has an intuitive understanding of how his or her business works and how value is created (the business model), he or she is rarely able to communicate it in a clear and simple way (Osterwalder, 2004, p. 14).

Even though no clear definition exists, Slywotzky (1995) describes the business model in a way that is very facilitative for this thesis, as he not only provides a clear definition, but he also enables the reader to make clear categorial distinctions within the model in his definition. According to Slywotzky (1995), a business model entails: "*the totality of how a company selects its customers, defines and differentiates its offerings, defines the tasks it will perform itself and those it will outsource, configures its resources, goes to market, creates utility for customers and captures profit. It is the entire system for delivering utility to customers and earning a profit from that activity*" (Osterwalder, 2002). This holistic description also raises questions as to which concepts are part of the business model theory. Its content will therefore be discussed in the next sections.

2.3.2 Business Model components

As stated in the latter section, a model can be described as a simplified view of a complex reality. This abstract view allows its user to eliminate irrelevant details and to emphasize on the more important ones. Also, the business model was stated as the description of the way the business fits together (Margretta, 2002, p. 6), uncovering the money making logic of the firm (Osterwalder 2004 p. 19). The business model therefore needs to contain the concepts that focus on and are needed to achieve just that.

Osterwalder (2004) suggests a framework that focuses on four main areas that a business model has to address which, in turn, can be subdivided into nine interrelated building blocks that are needed to conceive a business model (Osterwalder, 2004, p. 42). First, the four main areas were concluded as: Product (what), Customer interface (whom), Infrastructure management (how) and Financial aspects (financial viability). Subsequently, the product area was more specifically broken down into a *'value proposition'*. The customer interface was broken down into a *'target customer'*, *'distribution channel'* and *'relationship'*. The infrastructure management into a *'value configuration'*, *'capability'* and *'partnership'* and the financial aspects area was broken down into a *'cost structure'* and *'revenue model'*. This suggested framework was the result of a thorough synthesis of the body of business model literature (Osterwalder, 2004, p. 42).

Area	Building blocks
Product (What)	1. Value Proposition
Customer Interface (Whom)	2. Target Customer
	3. Distribution Channel
	4. Relationship
Infrastructure management (How)	5. Value Configuration
	6. Capability
	7. Partnership
Financial Aspects (Financial viability)	8. Cost structure
	9. Revenue model

Fig. 1: The business model: the business model elements (Osterwalder, 2004)

The *'value proposition'* can be described as the value that is created for both the customer and partners of the organization by the products and/or services that they offer (Osterwalder, 2004). Subsequently, the *'target customer'* is the group or segment the company wants to offer its value to and the *'distribution channel'* in turn, allows the organization to reach and deliver this value to the customers (directly or indirectly), connecting the *'value proposition'* and the *'target customer'*. The customer interface of the business model also needs to account for the type of *'relationship'* (e.g. acquisition, retention, add-on selling (Osterwalder, 2004, p. 72)) the organization wishes to establish with its customers. The value that is offered to customers, and the manner in which this is achieved, is considered to be the area of infrastructure management. Foremost, activities

and employed resources that are necessary to create the value for the customers are described in the 'value configuration'. The 'capability' is a building block representing the ability and competence to sustain a repeatable pattern of actions that provide or create value for the customer. The 'partnership' building block supports the capability by taking on voluntary partnership with other companies to facilitate the creation of value for the customer (Osterwalder, 2004, p. 89). The cost structure and revenue model of the financial aspects provide the moneymaking logic of the firm. Whereas the cost structure describes the amount of money it takes to employ all necessary resources, the revenue model describes the way money is made and the amount of money it makes with its (multiple) revenue streams (Osterwalder, 2004, p. 95). Furthermore all of these building blocks have sub-models that describe and explain the logic of the relating main model (Petrovic, Kittl, & Teksten, 2001). These parts are also interrelated which means that a closer look at each individual component and their interrelations is of great importance for a thorough understanding. Therefore a graphic depiction of the business model of Osterwalder (2004) accompanied with a more in-depth graphic description of each individual component is displayed in appendix 4. These in-depth descriptions of the nine building blocks are however, not of vital importance for this study and will therefore not be elaborated here.

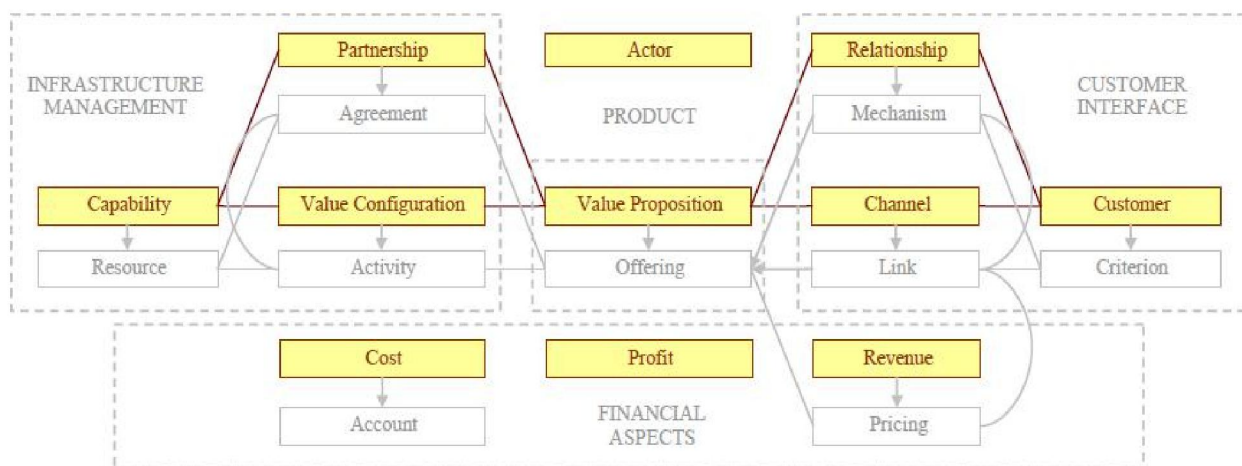


Fig. 12. The business model: The elements, areas and their interrelations (Osterwalder & Pigneur, 2002)

As stated before, many distinctions in the building blocks exist in business model literature. Chesbrough (2003) for example, uses building blocks that are quite similar to the building blocks used in the business model framework of Osterwalder (2004), but includes competitive strategy as an internal part of the business model. Many other authors seem to include the competitive strategy as an internal part of the business model as well. Margretta (2002) and Osterwalder (2004) among others however, claim that strategy is not an internal part of a business model. When a business model is perceived as a model that describes how the pieces of a business fit together, it does not in itself explicitly factor in competitive performance or how the company distinguishes itself (Margretta, 2002). A strategy explains how a company will do better than others (Margretta, 2002), a business model 'merely'

describes the moneymaking logic of a company. Osterwalder (2004) explains it by stating that when strategy, business models and process models are put together, they address similar problems on different business layers (Osterwalder, 2004, p. 14). First, the strategic layer is perceived as a planning layer, while the business model is baptized as the architectural and second layer in which the strategy is transformed into money earning logic. The third layer is the implementation layer, in which the business model is specified into process models and put to work. As a result, the characteristics (architecture) of the business model can be perceived as a result of a specific strategy. Hence, strategy should not be regarded as an internal part of a business model, but it does dictate its configuration to a large extent. Conclusively, the framework created by Osterwalder (2004) has provided this thesis with the nine building blocks that make up the business model. Section 2.3.4 will use these building blocks to provide a sequential approach to business model development.

2.3.4 The Business Model development Process Model

Even though the business model framework of Osterwalder (2004) is the main business model theory used for this research, it does not provide a very clear description as to when certain parts of the business model need to be conceived. Although this was not the primary purpose of Osterwalder's (2004) study, it is however very important because at least some parts of the business model appear to have a valid and possibly positive role in the development of structures and processes in organizations. Osterwalder (2004) however does describe development characteristics and a business model development process which should be helpful for this study. A particular design characteristic mentioned is the business model blueprint as a result of a chosen strategy (Osterwalder, 2004, p. 15). Consequently the formulation of the content of process models will be a result of the business model blueprint.

Formulate strategy create Business model blueprint Formulate process models

Parallel to this, the respective subjects are:

Planning level Architectural level Implementation level .

Conclusively, even though Osterwalder (2004) does not provide any detailed information about the point at which the business model parts should be conceived, his thesis did provide a general abstract overview of the initiation of business model design and its implementation. In contrast with Osterwalder (2004), Chesbrough (2003) does describe the order in which parts of the business model are conceived. Besides describing the elements and functions of the business model, Chesbrough (2003) points out that the conception of a business model starts with the formulation of a value proposition. He continues to 'order' the remaining parts of the business model he envisioned. Even though the business model elements of Chesbrough (2003) are not identical to the business model

building blocks that Osterwalder (2004) described, similarities are present and hence, the order in which Chesbrough (2003) orders the business model elements is worth reviewing.

As stated before, according to Chesbrough (2003), the conception of a business model starts with the formulation of a value proposition (1). The formulation of a value proposition is then followed by the specification of a market segment (2). The third element to be specified, according to Chesbrough (2003), is the firm's position in the value chain (3). Once the place in the value chain has been determined, the cost structure and target margins (4) can be described (Chesbrough, 2003, p. 67). These costs structures and target margins are a result of a global understanding of the business system and its costs, because when the general specifications of the offering and the value chain are 'known', an estimate of the likely costs can be made. Subsequently the value network (5) that is created around the business environment, determines the role that suppliers, customers and other third parties will play in the (amount of) value that is captured from commercialization of an innovation (Chesbrough, 2003, p. 68). Chesbrough (2003) argues that such a value network is able to leverage the value of a technology, because besides increasing the supply of complementary goods on the supply side, the value network can increase the network effects among consumers on the demand side. The final step according to Chesbrough (2003), is the formulation of a competitive strategy (6) and 'how' this strategy is conceived (figure 13).

1. Formulate value proposition	<i>Value that is created for both the customer and partners of the organization by the products and/or services that they offer</i>
2. Specify market segment	<i>The users to whom the technology is useful</i>
3. Value chain position	<i>Chain required to create and distribute the offering</i>
4. Cost structure and target Margins	<i>Specification of the revenue mechanisms of the firm</i>
5. Value Network	<i>Network of suppliers and customers</i>
6. Competitive strategy	<i>The way the firm intends to achieve a advantage over its rivals</i>

Fig. 13 The business model: The elements, creation and functions of a business model(Chesbrough 2003).

Even though Osterwalder (2004) describes the business model using more parts than Chesbrough (2003), when examining their meaning and function, several similarities between the business models appear. For example, part one, two and three of Chesbrough's (2003) business model seem to pertain 'What' a business sells, to 'Whom' the sale is made and 'How' the value is created and continuously delivered. Osterwalder (2004) also makes such a distinction when describing his business model. The first part mentioned by Osterwalder (2004) concerns the 'What', the second, third and fourth part the 'Whom', and the fifth, sixth and seventh part concerns the 'How'. When comparing both models however, part four and seven of Osterwalder's (2004) business model also seem to resemble the value network that Chesbrough (2003) describes. Hence part 4 (*relationship*)

and 7 (*partnership*) of Osterwalder's (2004) business model theory shall also be used as a part of the 'value network' part that Chesbrough (2003) describes. The similarities in meaning and function between the models of Chesbrough (2003) and Osterwalder (2004) provide a good opportunity to sequence the business model steps in terms of development. Even though the sequence of development described by Chesbrough (2003) was not validated or tested, it seems like a good place to start considering the fact that information regarding these sequences is not all that available. Hence, when using the sequence of Chesbrough (2003) and aligning the business model elements of Osterwalder (2004), the following process emerges (figure 14).

Step ->	1 'What'	2 'Whom'	3 'How'	4	5
Chesbrough (2003)	Value proposition	Market segment	Value chain position	Cost structure and target Margins	Value Network
Osterwalder (2004)	(1) Value proposition	(2) Target customer	(7) Value configuration	(8) Cost structures	(11) Relationship
		(4) Distribution channel	(5) Capability	(9) Revenue model	(10) Partnership
		(3) Relationship	(6) Partnership		

Fig. 14 Comparing the business model: The sequence of development (Chesbrough 2003; Osterwalder 2004).

Unfortunately, the alignment of individual components in the sequence of development (Figure 14) is not seamless. It is, for example, still hard to determine and backup beforehand, the sequence in which the 'target customer' and 'distribution channel' is (or needs to be) developed. Consequently, step two, three, four and five need a more specific description. Considering the fact that it is hard to make these distinctions using existing business model literature, this study used the New Service Development literature reviewed in section 2.2 to try and find a prevailing logic that could backup possible distinctions. As stated before, competitive strategy was already dismissed by Osterwalder and Margretta (2004; 2002), the elaboration of step two, three, four and five in the sequence of developing a business model remains and is included as appendix 5. In short, the process model of business model development is depicted as figure 15.

1.	Value Proposition	7.	Value Configuration
2.	Target Customer	8.	Cost structures
3.	Customer Relationship	9.	Revenue Model
4.	Distribution Channel	10.	Value network <i>Partnerships</i>
5.	Capability	11.	Value network <i>Relationships</i>
6.	Partnerships		

Fig. 15 Process Model: The business model (Chesbrough 2003; Osterwalder 2004).

2.4 Process models synthesis: New Service development and Business model

This study has so far stated two process models, one showing the development process of a service and the other showing the development process of a business model. Considering the fact that the purpose of this study was to create and test a single development process model, the two earlier models need to be aligned and merged. This is done by initially following the NSD Process model and integrating the elements of the Business Model development Process model at the correct stages. The integration of the business model elements in the single new process model is achieved by using the theoretical similarities between NSD and Business Model Development elements (appendix 5) to determine the sequence of the business model elements that Osterwalder (2004) described. Although the similarities discussed in appendix 5 are not altogether indisputable, they do provide a seemingly good idea about the precise time in which several parts of the business model can be formulated, relative to the New Service Development process.

First, the section that signifies the mental stage of developing a new service is untouched. Afterwards, the actual development phase is initiated with the concretization of the product model. Subsequently, section 2.3.4 concluded that the product model was somewhat similar to the value proposition as described by Osterwalder (2004) and Chesbrough (2003). Therefore, when a product model has been formulated, a value proposition can to some extent also be formulated.

The second phase of development (of the business model) was concluded as the target customer. The NSD literature review already partly determined the time at which the target customer is identified. First, the perceived opportunity will have a perceived market in the mind of its creator. Then, after the perceived opportunity is concretized, the real target market is formulated and approached. Hence, the target market is formulated as soon as the firm is ready to discuss its offering, after an initial concretization of the product model has been developed.

The third step is assumed to be the type of relationship that the firm wishes to establish with its customers. The NSD literature review in section 2.2 stated several times, the importance of customer interaction at the design stage of a new business. The desired relationship with the customer, as Osterwalder (2004) stated it, is therefore assumed to start when a strategic intent has been formulated and one starts to interact with customers about the design of the product.

The fourth step, i.e. the distribution channel, enables the firm to get in touch with and reach the customer. It was made clear in section 2.2.3 that the product model, target customer and strategic intent were a leading factor in designing the distribution channel. Due to this conclusion, it is assumed that the distribution channel is 'designed' after the strategic intent has been formulated, also due to the fact that an initial service design (product model) and target market have already been formulated.

The fifth step for both the development of a service and the development of a suitable business model is checking whether a business is capable to create and deliver the service. A requirement analysis will surface a minimum of resources, skills and competencies that are needed to do just that. Hence, the capability expressed by Osterwalder (2004) can be concluded to be satisfactory when the firm has access (and is able to make use of) the resources, skills and competencies that surfaced in the requirement analysis. The capability of the firm is therefore examined after the requirement analysis is completed.

The sixth step should subsequently plan and organize the resources that surfaced in the requirement analysis. This step was partly linked to the value configuration and Partnership mentioned by Osterwalder (2004) and the value chain position mentioned by Chesbrough (2003). In fact, although Chesbrough (2003) states the formulation of partnerships to be in the rear end of the process, ** characteristics of required partnerships are in fact already to some extent uncovered at the requirement analysis**. Next to this, Chesbrough (2003) also states that the value chain is formulated in a way that includes all that is needed to create and distribute the offering (Chesbrough, 2003, p.p. 64, 66-67). The structure of the value chain and the formulation of process models are however only possible when the required content is known and obtained. Hence, (if so required) partnerships are formulated between the results of the requirement analysis and the formulation of process models to facilitate the integration of partnerships in the value chain and the formulation of process models. Subsequently, process models and resource concepts can be formulated. Osterwalder (2004) describes the *"Value configuration"* element of the business model as a description of the arrangement of activities and resources that are needed to create value for the customer. This way the "value configuration" is considered to be complete when the process models and resource concepts are formulated.

The seventh and eighth step concern the cost structure and revenue model. The formulation of these steps was already partly formulated in the NSD literature review and is also discussed in appendix 5. The NSD literature review already concluded that cost simulations could be formulated when process models are completed. Cost structures can however only be made at the subsequent stage when resources are planned. Revenue models are formulated after the cost structure is completed.

The ninth and tenth steps contain the creation of a "value network" as described by Chesbrough (2003). This value network was described as a network of partners and customers that facilitates both the creation of value and the opportunity to sell it. It is therefore approached as a means of influencing and attracting additional partnerships and customers through existing relations to create additional value for customers and other partners and stimulate additional sales. Hence, these elements would be created when the product has already been launched. Therefore, it is assumed that these elements will be formulated at the time the master design is completed.

Figure 16 graphically depicts the process of New Service Development and the time at which it is possible to formulate parts of the business model. All nine of Osterwalders (2004) business model elements have been integrated in the process, with some additional (and taking into account) elements mentioned by Chesbrough (2003). As stated before, some models used in this thesis (especially business model theories) have not been tested and remain assumptions. Due to this a certain caution is maintained, both in testing and making claims concerning the created process model. In this light, this thesis will also use a more explorative mindset while ‘testing’ the model depicted in figure 16.

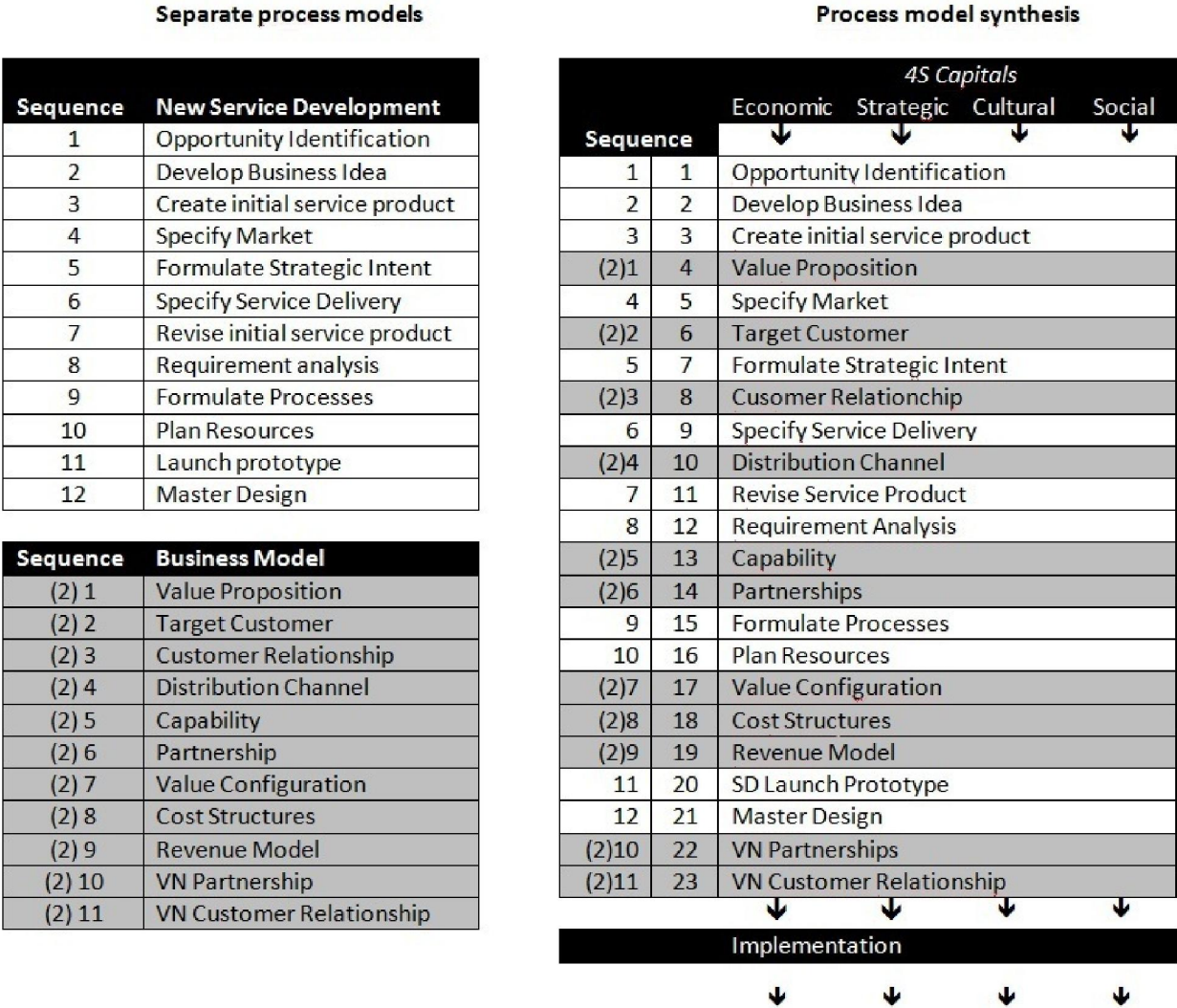


Fig. 16 The synthesis of the theoretical Service development- and business model development process

3. Methods

3.1 Research Design

As stated in chapter 1, the purpose of this study was to provide new service entrepreneurs with a process model that depicts the development process of transforming a new service idea into a business model. This model is aimed towards providing entrepreneurs with a simplified schematic of an otherwise complex process while simultaneously creating awareness and a better understanding of the process by pinpointing and focusing on the key elements of development.

This process model was deductively created by reviewing and synthesizing elements from several relating theoretical domains. Some models that were used and integrated into the process model of this thesis however, have not yet been previously 'tested'. Therefore, although the aim is partly to verify the constructed process model, this study is also largely concerned with complementing it. The methods used in this study therefore, were chosen to facilitate both the verification of the theoretical process model as well as leaving room to gain additional knowledge of the actual process to check whether or not parts seem to be missing. A qualitative approach is hence the preferred one, as it is better equipped to collect a broader spectrum of information about the described process. In short, one could say that the process model that was subtracted from theory is verified and additional information will be included if it seems to be lacking in the theoretical process model. In doing so, the result of this study will then also provide a better, deeper and more complete understanding of the development process model depicted in figure 16, both for theory building and practical application.

3.2 Research method

In parallel to section 3.1, this study does not lend itself for simple quantification, especially due to the possible incompleteness of the process model. Therefore, a qualitative method seems desirable. If after further inquiry and consideration the process model appears complete, quantifiable methods may be employed in addition to the qualitative method, facilitating a more in-depth test of the process model. Due to the mainly descriptive and explorative nature of this study, interviews are concluded as the method of choice for this study. Not only due the lack of time and resources are interviews chosen above the use of other qualitative research methods that could have otherwise proven to be very rich sources of information (e.g. participative/observational). To be precise, due to the descriptive and explorative nature of this study, it is likely to encounter information that would change the design of the process model which would mean that the instrument used to gather information also needs to be adapted to reflect this change. The process can hence be concluded to be very iterative and considering the fact that interviews are able to gather a lot of rich information and are easily changed if necessary (Babbie, 2003, p. 305), they are concluded to be the method of choice.

3.3 Sample

In accordance with the proclaimed flexibility needed for this research in section 3.1 and 3.2, no specific sample size is set in advance due to the fact that the required sample size to adequately answer the research question generally becomes obvious as the study progresses. The right number of subjects is generally reached as data saturation emerges (i.e. new categories, themes, explanations stop emerging from the data) (Marshal, 1996, p. 523). Due to the level of abstraction of the research topic and therefore relatively few questions (which is expected to require fewer respondents, Marshal, 1996, p. 523; Morse, 2000, p. 3) and the preferred method for data analysis described in section 3.5, the maximum amount of subjects is set at 20.

The data that is required to test and enhance the process model needs to be obtained from service entrepreneurs that have already been successful in capitalizing on a new service product characterized by a high variety and contact intensity. Therefore, the sampling needs to be *purposeful* (i.e. judgment sample, Marshal, 1996, p. 523). However, when does one consider the variety- and contact intensity to be high or low? The service typology model by Fahnrich (Bullinger, Fahnrich, & Meiren, 2003, p. 6) does not provide any useful operational characteristics in this sense. We do know that Fahnrich (1999; 2003) describes four dimensions on two scales with two variables (*contact intensity and variety*). We also know that Fahnrich (1999; 2003) refers to contact intensity as the measure of interrelationships between employees and customers and *variety* as the total amount of determined manifestations of the service product. In order to make classifications and determine potential respondents, this study assumes that variety is considered to be high when customers have the 'possibility' to customize the service offering (choosing between predetermined service-packages is not considered to be a customization, service content on the basis of a specific need/context is). Customer interaction on the other hand, is considered to be high when it is impossible for the service provider to provide the service to the customer without direct interaction and input (per phone or actual physical contact/presence).

Also, due to the fact that Fahnrich (1999; 2003) found that the service industry could be subdivided by contact intensity and variety (for service development purposes), it is assumed that other characteristics (such as the type of the service) do not significantly influence the course of firms in the development of the idea/service product/business model. Hence, there is no reason to subdivide the sample on the basis of additional variables. Potential respondents were identified with the help of the University of Twente (advertising an entrepreneurial image and therefore well known for its entrepreneurial nature) and its NIKOS organization which is concerned with advancing business incubation and entrepreneurship. In short, they provided this study with access to a large pool of potential respondents that have already completed the development process. Additionally, to try and facilitate the gathering of accurate and valuable data, entrepreneurs were only

eligible as respondents if they had started their business no more than five years before the start of this research. This way, the absence of valuable information due to memory recollection issues is partly prevented.

3.4 Instrumentation

The operationalization of the process model is mainly achieved by designing questions that fit each step of the theorized process model. In short, the structure depicted in the process model is used as the structure of the interview guide whereas the actual content is focused on extracting information about the origin and influences of (and on) each design step. The interview however starts with an explanation of the study and the mention of anonymity of everything that is disclosed. Then, some general, categorizing questions will be posed for the purpose of identifying the domestic or international orientation of the respondents and the identification of potentially discriminating variables.

In the second phase of the interview, the respondents are asked to provide information about how the business idea initially progressed to determine the reason for initiation (input displayed in figure 16). Subsequently, the respondents are asked to provide important influences in the development of the idea before any 'physical' development was initiated. This is used to determine which elements played a role in the phase between the thought of starting an own business and actually making a conceptual design of the service offer. In this phase, it is specifically interesting to acquire information about the influence of the market on the idea, as theory states this to be the most influential concept.

The next phase of the interview 'measures' the sequence of development in several ways. First, the respondent is asked to describe the development after the business idea was determined. This allows the respondent to reveal the sequence of development by pinpointing the order in which the theoretical concepts are addressed during the narration. During the narration the respondent is asked to reveal which elements influenced the development of the addressed concept. This is used to check the storyline sequence and provides a more in-depth view of the development process. After theoretical concepts are addressed this way, the respondent is explicitly asked to confirm the encountered sequence (e.g. '*So the after you determined the service product you wanted to offer, you started to search for potential customers?*'). After addressing a concept this way, the respondent was asked to specify if any changes were made to the concept. If so, respondents are asked ones again to specify which elements influenced the change. This provides a more detailed development process overview. If concepts are not mentioned, respondents are first asked if they were addressed and subsequently discussed in the same way as the mentioned concepts.

Lastly, respondents are asked if any problems were encountered during or 'after' the development process and how they were dealt with. This provides information to the interviewer about the possible incompleteness or flaws in the encountered development process and its solutions. This in turn provides all necessary information about a desirable development process.

3.5 Data Analysis

Even though Section 3.3 stated no theoretical need to subdivide the population on the basis of additional variables, this study however does start the interview with the collection of general information (easy factual questions) about the respondent's company both to put them at ease and to identify potentially discriminating variables. The underlying reason for collecting potentially discriminating variables is to 'test' whether or not additional distinctions *need* to be made on the basis of a different market scope: Domestic vs. International. If such variables are identified additional distinctions will be made both in the analysis (if possible) and the conclusions.

The data analysis approach used by this study consists of three concurrent flows of activities: *data reduction, data display and conclusion drawing/verification* (Miles & Huberman, 1984, p. 21). First the post data-collection data reduction will sharpen, sort, focus, discard and organize the collected data by summarizing, thematizing, clustering and coding the collected data chunks. Thematizing and clustering has to a large extent already been completed by *anticipatory data reduction*. Section 3.4, stating the instrumentation of data collection, already described the distinguished phases or topics used in the interview. These distinctions will provide a smoother approach to additional clustering and coding. The list of codes for coding the collected data is summarized in appendix 7.

Due to the fact that narratives are generally believed to lead to overload human information processing capabilities and prey on their tendencies to find simplifying patterns if the quantity of field notes is very great (Miles & Huberman, 1984, p. 21), data matrixes are used to facilitate an insightful and structured overview. Data matrixes are therefore used both because it is believed that a more informative analysis can be made and because the creation and elaboration of data display matrixes is far more comprehensible for this amount of information.

4. Findings, analysis and synthesis

The first results provide a clear overview of the research and its participating respondents. Additionally, at this stage, a distinction is made between respondents that indicated an international design orientation and respondents that indicated a domestic design orientation.

The subsequent results of the analysis provide an overview of the service and business model development process as indicated by the respondents. This analysis uses two phases to describe and verify the development process of the respondents. The first phase depicts and uses the development process as indicated by the respondents, the second phase consists of an analysis of the way design components influence one another in the development process. The second phase is subsequently used for two reasons: for verification and complementation of the development process (as indicated by the respondents) and the creation of a more detailed overview of the design process.

Using the overview of the more detailed development process and the development process as a whole, it is possible to determine the difference between the development process of companies with an international design orientation and companies with a domestic design orientation.

The subsequent and last step of the analysis describes the issues (and related solutions) the respondents encountered during and after the development process. The described issues and their solutions are then linked to their respective development components, which will then lead to a more complete and resilient initial development (process) that accounts for the needs of entrepreneurs.

4.1 Sample information and characteristics

In total nearly 40 entrepreneurs that satisfied the required characteristics to be selected as a respondent were extracted from a large database containing all entrepreneurs participating in a NIKOS entrepreneurship program (which incidentally also completely exhausted the database provided by NIKOS of potential respondents). These potential respondents were individually approached by e-mail and in case of no response, were contacted by phone. Of nearly 40 approached entrepreneurs, 9 were willing to participate which constitutes a response rate of 22.5%. Additionally, after further consideration, one respondent did not match the criterion to participate as a respondent for this study and results obtained from this respondent were therefore omitted. Due to the fact that it was only possible to obtain a sample group of 8 respondents, it will be even harder to make any hard claims and therefore the emphasis will be placed on description and exploration even more.

At the start of the interviews, some questions were posed for the purpose of identifying the characteristics and potentially discriminating variables of the sample. The results of this part of the interview are summarized in figure 17. This figure depicts whether or not the entrepreneur initiated entrepreneurial activities on his/her own or with a business partner (grey checkbox indicating a yes). It also depicts the development time span *from the start of preparations for entrepreneurial activity until the actual launch of a service*. Perhaps most importantly, the theoretical framework stated the importance of the domestic vs. international design intention which is therefore also included. The results will therefore also be mirrored against the indication whether or not respondents had indicated an international startup.

		Resp. 1	Resp. 2	Resp. 3	Resp. 4	Resp. 5	Resp. 6	Resp. 7	Resp. 8
Business partner									
Development Time	< .5 yr								
	< 1 yr								
	< 1.5 yr								
	>= 2 yr.								
Technological equipment									
International startup									

Fig. 17 Characteristics of the sample

4.2 Entrepreneurial Phase

Before examining the development process, the entrepreneurial phase, which includes the *opportunity identification* and *business idea development*, is reviewed first due to the fact that *no actual design takes place in this particular phase*. Moreover, this phase is static in a sense that merely the content of the elements of this phase could differ. The content and start of all respondents preceding all entrepreneurial activity is therefore reviewed first.

Of the respondents, 7 out of 8 indicated to have initiated entrepreneurial activities on the basis of their interests, knowledge and convictions. As a result, these entrepreneurs also claimed the base of their knowledge, interest and convictions to be the main elements, as opposed to market indications, that influenced their initial conceptual idea. Of the respondents, 3 out of 8 respondents stated to have initiated entrepreneurial activities mainly or partly due to necessity or lack and unattractiveness of other employment opportunities. The elements influencing the initial development of this concept were concluded as the knowledge, interest and conviction of the entrepreneur.

4.3 The Design process

Table 18 depicts the findings about the sequence of the service and business model development components as indicated by the respondents. The development components depicted in figure 18 are ranked relative to one another. This means that even though the time span between development components is not included, it did in fact range from almost simultaneous to some months before the next was addressed. Also, the development components in table 18 are depicted in the theorized sequence (from top to bottom) and contain combinations or integrations of development components which is a result of expected simultaneous and predetermined sequences of design elements (discussed in paragraph 2.3.4, 2.4 and appendix 5). By examining their relative standing, it is possible to deduce the order in which these elements are addressed in the development process (figure 18). A more structured ordering of the encountered sequence of development, deduced from figure 18, is displayed on appendix 9. The numbers used in the matrixes in this section (from top to bottom) indicate the sequential order in which the design components were encountered during the interviews for each respondent.

Design component ↓	Resp	Resp	Resp	Resp	Resp	Resp	Resp	Resp
	1	2	3	4	5	6	7	8
Create Service Product/Value proposition	1	1	1	1	1	1	1	1
Specify Market/Target customer	2	3	2	2	2	2	2	2
Formulate strategic Intent/Customer relationship	3	2	4	3	3	-	-	-
Specify Service Delivery/Distribution Channel	-	5	5	5	5	4	4	-
Revise Service product/Value proposition	-	-	10	10	11	7	7	5
Requirement Analysis/Capability/Partnerships	4	4	3	4	4	3	3	-
Formulate Process Models	8	8	-	12	10	-	-	6
Pricing (as a part of Plan Resources)	6	7	7	6	7	5	6	4
Launch Prototype	5	6	6	7	6	6	5	3
<i>Master Design</i> Strategic intent/Customer Relationship	-	-	8	8	8	-	-	-
<i>Master design</i> Product model/Value proposition	(1)	(1)	(10)	(10)	-	-	-	-
<i>Master Design</i> Market/Target Customer	7	(3)	9	9	-	-	-	-
<i>Master Design</i> Service Delivery/Distribution Channel	-	(5)	11	11	9	-	-	-
Range start:	1			-		Absent		
Range end:	12			(*)		Indicating simultaneous design		

Fig. 18 Ordering the conceptual design elements: Respondents with no international orientation are marked grey

In addition to the use of various integrated design components in figure 18, it also depicts some additional or 'not before mentioned' design components. During the interviews, it appeared that design components had different (not simultaneous) master design initiations. Therefore, the '*Master design*' components depicted in figure 18 are in fact parts of the single Master design component depicted in figure 16 and are split up to reflect the sequence of development encountered during the interviews. One other difference is the use of '*Pricing*' instead of the '*Plan resources*' design component as a whole. Whereas the '*Plan resources*' design component was concluded to be more or less similar to the '*value configuration*', and followed up by '*cost structures*' and '*revenue model*', none of them were encountered during the interviews. Pricing had however been initiated without the use of an explicitly formulated value configuration, cost structure, and revenue model. Therefore, a standalone '*Pricing*' was used instead of the entire '*Plan resources*' design

component to more accurately reflect the process encountered during the interviews. Last but not least, during the interviews it became apparent that it was fairly common for respondents to 'skip' several design components during their development process. As a result, figure 18 merely provides the sequence of actually encountered design components and depicts unused design components with the – symbol.

Figure 19 depicts the aggregated actual process model (appendix 9) vs. the theorized development process model. The fact that the actual process shows a relative early launch of a prototype indicates a fundamental difference. Whereas the theoretical process model depicts a very deliberate, calculative process wherein all aspects are contemplated in advance of launching services, the actual process shows a process wherein solely apparent necessities are contemplated before the service is launched and other subsequent development activities are more or less dealt with along the way.

Theoretical process		vs.	Aggregated actual process (<i>Appendix 9</i>)	
1	Create Service Product/Value proposition	1	1	Create Service Product/Value proposition
2	Specify Market/Target customer	2	2	Specify Market/Target customer
3	Formulate strategic Intent/Customer relationship	3	3	Formulate strategic Intent/Customer relationship
4	Specify Service Delivery/Distribution Channel	4	4	Requirement Analysis/Capability/Partnerships
5	Revise Service product/Value proposition	5	5	Specify Service Delivery/Distribution Channel
6	Requirement Analysis/Capability/Partnerships	6	6	Launch Prototype
7	Formulate Process Models	7	7	Pricing (as part of Plan Resources)
8	Plan resources/Value confi/Cost structures/Rev. model	8	8	Master Design <i>Strategic intent/Customer Relationship</i>
9	Launch Prototype	9	9	Master Design <i>Market/Target Customer</i>
10	Master Design	10	10	Revise Service product/Value proposition
	<i>VN Partnerships</i>	11	11	Master design <i>Product model/Value proposition</i>
	<i>VN Customer Relationship</i>	12	12	Master Design <i>Service Delivery/Distribution Channel</i>
		13	13	Formulate Process Models
				<i>VN Partnerships</i>
				<i>VN Customer Relationship</i>

Fig. 19 Actual development process vs. theoretical development process

4.3.1 Outcome dimension:

Among the variables representing the outcome dimension (p. 20, fig 7), differences are fundamental but limited. Most importantly, the development process is apparently directed towards a fast market launch, which also explains an earlier requirement analysis. It does not reflect the calculative process described by theories.

Secondly, next to the difference in the initiation of the requirement analysis and in parallel to a fast market launch, the actual process shows no sign of revising the initial service product early on in the process as depicted in the theoretical model. Three out of eight respondents indicated that some changes had been made to their product model as a result of a particular strategic intent before market launch. Apparently, and in congruence with the development influences described in the next section, the crude service product is mainly and gradually shaped by the accumulation of market experiences.

4.3.2 Process- and structure dimension:

Figure 19 also shows a difference in the sequence of the development concepts following those of the outcome dimension. For example, the 'plan resources' component as a prerequisite to the launch of the prototype depicted in the theoretical process, appears to be missing in the actual process. This absence is in congruence with results shown earlier, depicting a quick market launch. Moreover, some respondents developed resource schemes after the service had been launched, they were however not very intricate (with one exception) and mainly manifested themselves in the form of process models.

Process models, in turn, were used for several reasons. Only one of them however included the reason predicted by theory: to facilitate actual delivery of the service (which was in fact stated by the respondents to be very hard for services of this nature) or planning purposes. In fact, all other respondents indicated that the reasons for formulating process models were for the benefit of basic administration, professionalization and new service development. This, once again, shows that the actual process is characterized by 'actions as a result of confrontation with a specific need'.

4.3.3 Business Model components

Due to the fact that no anomalies were encountered during the interviews concerning the expected linkage between the service development and business model development components, they are concluded to be correctly linked. As a result, they change position with their relative service development components. However, this is not to say that each business model component was actually addressed. For example, not all respondents indicated to have initiated partnerships, but those that did, did so after concluding the requirement analysis and capability examination (Value Network partnerships excluded).

The business model components represented by the 'Plan Resources' component of service development were underrepresented due to the absence of the 'Plan Resources' component in the actual process. Whereas to some extent cost structures were formulated to determine the price of the service, the actual revenue model remained implicit (6 respondents) or very basic (2 respondents) in each case (until the initiation of master components in which case three respondents were determining new and possibly additional or improved revenue models). Value configurations were only mildly encountered in the form of process models. Finally, the 'Value Network' partnerships and customer relationship were in three cases very clearly encountered and initiation thereof was perceived to be the result of the finalization of master design components (with the exception of the revision of the product model).

4.3.4 Component Influences

As stated before, the development influences of these elements on one another are not only very helpful for determining the sequence of development. In fact, these influences are a perfect representation of elements that are taken into account at each step. Moreover, the elements that are taken into account at each step are increasingly important when used to determine the development differences between a domestic and international orientation *and* when reflected upon the issues that are encountered later on in the process.

The components of the outcome dimension represent a big part of the entire development process. As a result they are reviewed in terms of their development influences and subsequently used to determine design differences and finally reflected upon the encountered issues of the respondents to improve the initial design process.

4.3.4.1 The product Model:

Product model influences		Resp. 1	Resp. 2	Resp. 3	Resp. 4	Resp. 5	Resp. 6	Resp. 7	Resp. 8
Before	Knowledge & Int.								
	Technological equipment								
	Strategic Intent								
After	Market Experience								
	Strategic Intent								
Product model focused									

Fig. 20 Influences on the product model before and after market exposure

Three (of out four) of the respondents that used technological equipment inherent to the content of the product model, indicated that current possibilities, future advancements and future availability of new technologies were of vital importance for the initial development of the product model.

3 respondents indicated that their initial and ‘revised’ strategic intent had influenced the development of their product model. Furthermore, 1 additional respondent indicated that a strategic intent had influenced the product model after acquiring their first market experiences.

Six respondents indicated that market experiences were the leading factor in changing the product model *after* the product model had already been exposed to the market for some time.

4.3.4.2 The Market:

Market determination influences		Resp. 1	Resp. 2	Resp. 3	Resp. 4	Resp. 5	Resp. 6	Resp. 7	Resp. 8
Before	Product Model								
	Strategic Intent								
After	Market experience								
	Strategic intent revision								
Market focused									

Fig. 2i Market determination: Influences and focus

All but one respondent could be concluded to have initiated market activity in a direction based on solely their product model. Although all (but one) respondents subsequently loosened their specific target and allowed a market to manifest itself, differences do exist. For example, respondent 3, 4, 5, 6, 7 and 8 allowed manifestations outside their initial product model. In other words, the market demand gradually shifted or broadened the product model. This indicates that a market orientation is very generic. Whereas respondent 1, 2, 3 and 4 indicated to have created a particular market focus, respondent 5, 6, 7 and 8 indicated that no market focus has yet been made at the time in which this study took place.

4.3.4.3 Strategic Intent:

Strategic Intent influences		Resp. 1	Resp. 2	Resp. 3	Resp. 4	Resp. 5	Resp. 6	Resp. 7	Resp. 8
Before	Product Model								
	Competitive landscape								
After	Market experience								

Fig. 2j Strategic Intent influences: initial and revision.

The formulation of a strategic intent was in all cases, based on the content of the product model and in most cases also on the competitive landscape related to the product model. One of the respondents however stated that their initial strategic intent was merely a guideline whereas one other respondent shaped the product model entirely on the basis of preventing potential competition.

Three respondents changed the strategic intent after the accumulation of market experience. The accumulation of market experiences is concluded as the catalyst for revising the strategic intent.

4.3.4.4 Service delivery:

Service delivery influences		Resp. 1	Resp. 2	Resp. 3	Resp. 4	Resp. 5	Resp. 6	Resp. 7	Resp. 8
Before	Product Model								
After	Strategic Intent revision								
Service delivery focused									

Fig. 23 Service delivery influences: initial and revision.

6 respondents indicated to have formulated a specific choice for ‘service delivery’. All of them were influenced by the product model (the product model prohibits certain methods). All of the respondents, even the respondents that ‘formulated’ the service delivery implicitly (blank checkboxes: *before*), indicated to have used their own network to ‘connect to’ potential customers. Next to the use of the personal network of the respondents, network meetings and business diners were most frequently used as an additional method by 3 respondents. 3 respondents indicated that the revision of the strategic intent had influenced a change in the ‘service delivery’.

4.3.5 Influences and the Design order:

The elaborated development component influences were checked and concluded to be in congruence with the design orders depicted by the respondents and summarized in figure 18. As stated earlier, these influences are not only very useful for determining and confirming the order in which they are addressed. When linking the design process to the issues encountered and described by the respondents, the design process could be changed to account for them. First however, the slightly more detailed development process is used to determine whether or not the design orientation (domestic versus international) has had any influence on the order of the design process.

4.4 The domestic versus international design orientation:

The differences between an international and domestic design orientation are analyzed on two levels. The first level uses the design ordering of the components to check if differences exist in the specific order of design elements. The second level uses the more detailed elaboration of component design and influences to check if differences exist in the individual design of components (i.e. if they had the same design impulses/influences). The primary goal however, is to determine whether or not the orientations have the same development order.

At the first level of analysis, the sequence of development elements is to a large extent very similar. Figure 24 depicts the development sequences of both design orientations.

Design orientation ⇒	IO	IO	IO	IO	DO	DO	DO	DO
Respondent ⇒	1	2	5	8	3	4	6	7
Design component ⇓								
Create Service Product/Value proposition	1	1	1	1	1	1	1	1
Specify Market/Target customer	2	3	2	2	2	2	2	2
Formulate strategic Intent/Customer relationship	3	2	3	-	4	3	-	-
Requirement Analysis/Capability/Partnerships	4	4	4	-	3	4	3	3
Specify Service Delivery/Distribution Channel	-	5	5	-	5	5	4	4
Launch Prototype	5	6	6	3	6	7	6	5
Pricing (as part of Plan Resources)	6	7	7	4	7	6	5	6
Master Design Strategic intent/Customer Relationship	-	-	8	-	8	8	-	-
Master Design Market/Target Customer	7	(3)	-	-	9	9	-	-
Revise Service product/Value proposition	-	-	11	5	10	10	7	7
Master design Product model/Value proposition	(1)	(1)	-	-	(10)	(10)	-	-
Master Design Service Delivery/Distribution Channel	-	(5)	9	-	11	11	-	-
Formulate Process Models	8	8	10	6	-	12	-	-

Fig. 24 The design process: International orientation versus domestic design orientation

Even though minor differences are present among all respondents in the form of absent design components, the order of design components are very alike and merely deviate at the point indicated with grey checkboxes. However, distinct differences need to be pinpointed (difference ≥ 2 respondents³):

1. Respondents indicating an *international design* orientation were more likely to focus the product model at the first product model formulation.
2. Respondents indicating an *international design* orientation were more likely to formulate process models.
3. Respondents indicating a *domestic design* orientation were more likely to contemplate pricing before market contact was initiated.
4. Respondents indicating a *domestic design* orientation were more likely to revise their product model.
5. Respondents indicating a *domestic design* orientation were more likely to formulate a specific service delivery.

The second level of analysis, concerning the individual design differences, shows the same tendency of dissimilarity, both within and between the design groups (figure 25). However, some distinctive differences in design do exist (difference ≥ 2 checkboxes):

1. Respondents indicating an *international design* orientation were more likely to use technological equipment.
2. Respondents indicating an *international design* orientation were more likely to show a longer development time.
3. Respondents indicating an *international design* orientation were more likely to indicate an influence of technological equipment on the design of the initial product model.
4. Respondents indicating an *international design* orientation were less likely to indicate an influence of market experience on the revision of the product model.
5. Respondents indicating an *international design* orientation were less likely to indicate an influence of market experience on the 'master' of the market.

³ Due to a small n and a large number of variables it is nearly impossible to provide statistical significances and differences are bound to be present. For explorative purposes, differences ≥ 2 will be noted (< 2 will show too many random differences and are statistically far less probable to indicate significance if n is > 8).

- 6. Respondents indicating an *international design* orientation were less likely to indicate an influence of the strategic intent revision on the 'master' of the market.
- 7. Respondents indicating an *international design* orientation were more likely to indicate an influence of the competitive landscape on the initial formulation of strategic intent.
- 8. Respondents indicating an *international design* orientation were less likely to indicate an influence of the product model on the initial formulation of service delivery.

Development orientation		IO	IO	IO	IO	DO	DO	DO	DO
Respondent number		1	2	5	8	3	4	6	7
Business Partner									
Development Time	< .5 yr								
	< 1 yr								
	< 1.5 yr								
	>= 2 yr.								
Technological equipment									
Product Model influences									
Before	Knowledge & Int.								
	Technological equipment								
After	Strategic Intent								
	Market Experience								
	Strategic Intent								
Product model focused									
Market determination influences									
Before	Product Model								
	Strategic Intent								
After	Market experience								
	Strategic intent revision								
Market focused									
Strategic Intent influences									
Before	Product Model								
	Competitive landscape								
After	Market experience								
Service delivery influences									
Before	Product Model								
After	Strategic Intent revision								
Service delivery focused									

Fig. 25 Individual Designs: International orientation versus domestic design orientation, (focus indication a master design),

At the first level of analysis, differences were mostly encountered in the area of absent design components. Merely one difference (of 2) was encountered in the actual design process. Therefore, the differences between design processes are concluded to be slim. At the second level of analysis, of over 13 and 20 measured variables, respectively 5 and 8 differences were encountered. Only one variable showed a difference of 3 between the two groups, seven variables showed a difference of 2. A difference of 2 on the other hand also means that there is a similarity of two at the same variable (appendix 12 shows the level 2 differences).

Due to a small group of respondents and the latter given facts, it is very hard to determine if the encountered differences are caused by a difference in development orientation. If however they are caused by a difference in orientation and significant

differences do exist, there is a higher probability that they would be encountered in one (or more) of the 12 variables provided than the other showing ≤ 1 difference.

4.5 Positive and negative development findings and influences:

The ‘issues’ described in this section are those explicitly mentioned by the respondents. Roughly, the described issues can be characterized as internal and external. Whereas the external issues are mainly concerned with the facilitation and acquisition of demand for the offered service products, the internal issues are mainly concerned with structural and very detailed practical organizational design. The list of encountered issues is depicted in figure 26; a more detailed description of the encountered issues is depicted on *appendix 10*.

The internal issues are directly concerned with the development and design of the organization and most of them were treated and dealt with as such by the respondents. The external issues on the other hand are not directly connected to development elements but were however successfully dealt with by adapting/redesigning development components. This means that most of the internal and external issues can be taken into account at the design stage.

External	Internal
- branding	- Pricing
- Age / credibility	- Lack of focus
- Customer risk	- Legal liability
- Customer acquisition	- Multi-disciplined tasks
- Sustaining growth	- Multi-disciplined skills
	- Managing deadlines
	- Managing workflows

Fig. 26 Encountered ‘internal’ and ‘external’ issues after the development process (focus indication a master design)

Inasmuch the external issues are mainly concerned with the interaction between the organization of the respondent and its environment (customers, competitors etc.), the respondents also mainly dealt with these issues by using solutions and development components that interact with- or ‘changed’ their environment. Figure 27 depicts the development components adapted by the respondents to deal with the issue. A more detailed elaboration is depicted on *appendix 11*.

External	Adapted design component
- Branding	- Requirement Analysis \Rightarrow Partnerships
- Age / credibility	- Requirement Analysis \Rightarrow Partnerships
- Customer risk	- Requirement Analysis \Rightarrow Partnerships
- Customer acquisition	- Focus \Rightarrow Product model, Strategic Intent, Market, Service delivery
- Sustaining growth	- Focus \Rightarrow Product model, Strategic Intent, Market, Service delivery

Fig. 27 Encountered external issues and addressed design components (focus indication a master design)

Inasmuch these internal issues were mostly concerned with internal design choices and activities, the respondents mainly used development components related to internal structure and the facilitation of executive activities. Figure 28 depicts the development components addressed by the respondents to deal with these issues. A more detailed elaboration is depicted on *appendix 11*.

Internal	Adapted design component
- Pricing	- Revenue model and cost structures (see elaboration)
- Lack of focus	- Focus ⇒ Product model, Strategic Intent, Market, Service delivery
- Legal liability	- Requirement Analysis ⇒ legal 'requirements'
- Multi-disciplined tasks	- Outsourcing ⇒ Partnerships
	- Dividing work ⇒ Planning resources
- Multi-disciplined skills	- Outsourcing ⇒ Partnerships
	- Hiring specialists ⇒ Planning resources
	- Dividing work ⇒ Planning resources
- Managing deadlines	- Planning resources and formulating process models
- Managing workflows	- Planning resources and formulating process models

Fig. 28 Encountered internal issues and addressed development components (focus indication a master design)

The solutions used by respondents to deal with these issues are all accounted for by the theorized development components. However, up until now, two kinds of solutions have been presented. The first offers solutions to problems that can be foreseen and therefore taken into account at the design stage. The second offers solutions to problems that occur at a certain point in time and are therefore of no use at the initial development stage. Considering the fact that this thesis concerns itself with the initial development stage, the first type of solutions is used whereas the second type of solutions is now considered as given and not elaborated further.

The solutions that can be accounted for at the initial design stage are concluded to be: (1) Branding, (2) Age/Credibility, (3) Customer risk, (4) Pricing, (5) Legal liability and to some extent the (6) managing of workflows and (in parallel) (7) the managing of deadlines. An overview of the issues and their relating design components are depicted in figure 29. Additionally, a graphic representation of the development process accounting for the issues described here is included as fig. 30 on page 49.

Issues	Initial design stage
1. Branding	Requirement Analysis ⇒ Partnerships
2. Age / credibility	Requirement Analysis ⇒ Partnerships
3. Customer risk	Requirement Analysis ⇒ Partnerships
4. Legal liability	Requirement Analysis ⇒ legal 'requirements'
5. Pricing	Revenue model and cost structures (see elaboration)
6. Managing workflows	Formulating process models
7. Managing deadlines	Formulating process models
8. Lack of focus	Focus ⇒ Product model, Strategic Intent, Market, Service delivery

Fig. 29 Issues that can be accounted for at the initial design stage and relating design components

5. Conclusion and Recommendations

5.1 Research problem and question

The research question, as stated by this study, was: 'Which concepts concerned with the development of services and business models are appropriate for transforming a service idea (characterized by a high variety and contact intensity) into a business model and how can these concepts be addressed in the process involved?' Additionally, it stated to examine the differences between the development process of service entrepreneurship with a domestic- and international orientation.

The reason for this study is a general lack of a theoretical interdisciplinary approach to this kind of entrepreneurship development. As a result, theoretical knowledge about this development process remains limited which consequently also limits the availability of useable tools for entrepreneurs to aid in the development process. This study hence tried to provide a tool to increase the chances of success for this kind of entrepreneurship by creating, testing and subsequently complementing a development process model. This process model was created using theoretical development concepts related to entrepreneurship, new service development and business model theory and integrating them into a single model. Subsequently, the model was tested and complemented by data acquired from service entrepreneurs. The conclusion of (and contribution to) each specific theoretical discipline and the main research question is presented in the next sections.

5.2 Contributions to individual theoretical disciplines

5.2.1 New Service Development contribution

The analysis (section 4.3 - 4.3.2) has shown that in contradiction to the expected theoretical process model which showed a very deliberate en calculative process, the process described by entrepreneurs during the interviews is mainly characterized by development as a result of a specific need. This constitutes a different development mindset and consequently, it showed a different development process.

As a result, the proposed process model of this section was developed using the development sequence obtained during the interviews and refining it using the theoretical process model to solve the 'development' issues encountered by the respondents. The model can therefore be concluded as a reflection of what was encountered in practice. It also provides a best 'practice overview' of the development process because it includes theoretical elements that take into account the prevention of common issues encountered by multiple respondents.

Last but not least, the proposed model differs from existing new service development models which points out that existing models could be complemented using these results. This results in the development sequence depicted as proposition 1 (fig.30).

Proposition 1: New Service Development Sequence		
<i>for services characterized by a high variety and contact intensity</i>		
	<i>Opportunity identification</i>	
	<i>Develop business idea</i>	
1	Create initial service product	
2	Specify Market	
3	Formulate Strategic Intent	
4	Requirement Analysis	Accounting for issues: branding, credibility, customer risk, legal liability's
5	Specify Service Delivery	
6	Formulate Processes	Included to account for Pricing issues and the managing of workflows and deadlines
7	Launch 'prototype'	
8	Master Design <i>Strategic intent</i>	Review and start the initiation of a <i>master design</i> preventing lack of focus
9	Master Design <i>Market</i>	
10	Revise service product	
11	Master design <i>Product model</i>	
12	Master Design <i>Service Delivery</i>	

Fig. 30 Proposed New Service Development Process Model

5.2.2 Business Model Development contribution

The analysis (section 4.3.3 on the basis of Section 2.3.4 / 2.4 / Appendix 5) already concluded that the development of some business model components were connected to several New Service Development components. Figure 31 shows the Business Model components and the New Service Development components to which they were argued to be connected.

Business model component	Related New Service Development component
Value proposition	Create initial service product (product model)
Target customer	Specify Market (Market perception)
Customer Relationship	Formulate Strategic Intent
Distribution Channel	Specify Service Delivery
Capability and Partnerships	Requirement analysis
Cost Structures and Revenue Model	Formulate Processes
Value Configuration	Plan Resources
VN Partnerships	-
VN Customer Relationship	-

Fig. 31 Business Model Development components and relating New Service Development components

As a result of these connections, the proposed development sequence of Business Model components in this section is determined by the proposed development sequence of New Service Development components. The only exceptions are two components theorized by Chesbrough (2003) which were concluded to be 'designed' at the time a master design was completed. However, if the *new service development sequence* had not been part of this study, the business model concepts would still have been encountered in the same sequence during the interviews. This means that the business model components themselves do have a sequence of development but it runs parallel to the new service development sequence and contains overlapping and similar concepts. Combined with the new service development sequence however, it provides a more detailed overview of the specific time of development in the entire process. When doing so with the proposed new service development sequence, this study is able to propose the following business model development sequence (proposition 2, fig. 32).

Proposition 2: Business Model Development Sequence			
	<i>New Service Development Sequence</i>		Business Model Development Sequence
1	Create initial service product	1	Value proposition
2	Specify Market	2	Target customer
3	Formulate Strategic Intent	3	Customer Relationship
4	Requirement Analysis	4	Capability, Partnerships
5	Specify Service Delivery	5	Distribution Channel
6	Formulate Processes	6	Cost Structures, Revenue Model (pricing)
7	Launch 'prototype'	7	-
8	Master Design <i>Strategic intent</i>	8	<i>Customer Relationship, Capability, Partnerships</i>
9	Master Design <i>Market</i>	9	<i>Target Customer</i>
10	Revise service product	10	<i>Value Proposition</i>
11	Master design <i>Product model</i>	11	<i>Value Proposition</i>
12	Master Design <i>Service Delivery</i>	12	<i>Distribution Channel</i>
13		13	Value Network Partnerships and Customer Relationships

Fig. 32 Proposed business model development Sequence

5.2.3 Service Entrepreneurship contribution

The analysis (section 4.4) has provided no evidence to support any claim that differences between the development of service firms (characterized by a service offering with a high variety and contact intensity) with an international or domestic orientation exists. Due to a small amount of respondents, significance testing was impossible but the absence of any major differences provides a reasonable argument that a different orientation does not have the effect as claimed in theory. Secondly, the differences in development influences can neither provide a reasonable confirmation nor a dismissal of an affect of different development orientations on the development process. Differences were diverse (both within and between groups) and therefore a real threat of mediating variables exists. Subsequently, theoretical claims about the influence of an international versus a domestic design orientation were stated as:

"international scope is, for example, generally characterized by strategies of broad market coverage through developing and controlling numerous distribution channels and serving numerous customers in diverse market segments, entrepreneurship with a domestic scope is generally characterized by an emphasis on a production expansion strategy and customer specialization strategy"(p. 12)

Reasonable arguments however can be made disconfirming this theory. Broad market coverage should have indicated an influence of strategic intent on the formulation of the market and in parallel, it should not have been (as was done in most cases) determined solely on the base of the product model. Numerous distribution channels should indicate a heavy investment in their formulation which was not the case. Having numerous customers in diverse market segments subsequently creates the idea that this theory is mainly directed at organizations that deal with physical products. The same goes for the production expansion strategy of the domestic scope. Finally, customer specialization should have indicated the focus of the market and product model of respondents with a domestic orientation. No reasonable evidence to support this theory is present as well.

In short, there is no evidence that development differences exist. When looking back, ample reasonable arguments have been made disconfirming it rather than confirming this theory. It however remains inconclusive due to the fact that no significance tests were possible. As a result, more testing is needed.

5.3 Conclusion: the main research question

Section 5.1.3 already discussed the manner in which the second goal, concerning the development differences between different market orientations, of this study was attained. Additionally, the intended contributions to each individual theoretical discipline were also described in the previous sections. The main research question is subsequently answered by accumulating the latter contributions. They cumulatively describe the appropriate concepts, concerned with the development of services and business models, for transforming a service idea (service characterized by a high variety and contact intensity) into a business model, which was stated to be the main goal of this study. Table 33 shows each concept and the aggregated development sequence of developing a service idea into a business model which covers the main research question.

Conclusion main research question		
Sequence	Development concept	
	<i>Opportunity identification,</i>	
	<i>Develop business idea</i>	
1	Create initial service product	Value proposition
2	Specify market	Target customer
3	Formulate strategic Intent	Customer relationship
4	Requirement analysis	Capability, Partnerships
5	Specify service delivery	Distribution Channel
6	Formulate Processes	Cost structures, Revenue model (Pricing)
7	Launch prototype	
8	Master design strategic intent	Customer relationship, Capability, Partnerships
9	Master design market	Target customer
10	Revise service product	Value proposition
11	Master design product model	Value proposition
12	Master design service delivery	Distribution Channel
13	Value network Partnerships and Customer relationship	

Fig. 33 Concepts and design sequence for transforming a service idea into a business model

5.3.1 Discussion

It is important to make some additional remarks concerning the New Service- and Business Model Development design sequence. First, proposition 1 and 2 have been formulated on the grounds of a mostly exploratory research. During the research it appeared not all design components of both disciplines were addressed by each respondent. In doing so, they encountered different issues as a result of absent design components that were not contemplated at a certain stage or not at all.

The formulated propositions (1 and 2) have both been adjusted to account for the issues encountered by respondents. They now include some of the development

components that were initially absent, solely to account for, and prevent, the manifestation of these issues. This means that element 4, 6 and '8' of proposition 1, and element 6 of proposition 2 should mainly reflect the prevention of the described issues in section 4.5 (see also: appendix 10, 11).

Again, by including these elements, it is not the intention of this study to claim that these elements should be accounted for in their theoretical form. During some interviews, the notion that design elements were addressed due to a specific need was clearly noticeable. Therefore, proposition 1 and 2 depict the development components believed to be necessary and helpful in the development of the organization and the prevention of (apparently) common issues. They are however still aggregates which means that design components will have different values for each entrepreneur depending on their needs and goals.

5.3.2 Research reflections

Looking back, this study provided an answer to the main research question by proposing a development process model that should be useful or appealing to both theoretical as well as practical users. The answer to the main research question, and relating practical relevance, was only possible due to the use of an interdisciplinary approach.

The use of this interdisciplinary approach was however also the genesis of a multitude of issues of which the most important one was the experienced increase in complexity. This initial increase in experienced complexity was returned to an acceptable level (personally) by using a more explorative approach. The known *Rigor versus Relevance* issue was in this case not too much of an issue knowing that a large theoretical contribution would mean facing this complexity with a research strategy that would need a huge amount of respondents and a careful, more detailed, elaboration of existing generalizing theories, constituting an amount of work too much for a master thesis. Moreover, the practical relevance would subsequently have been even less.

By using a more explorative approach, it is the belief of this study that it has to some extent succeeded in striking a balance by contributing both theoretically and practically by providing directions for theoretical applications and uncovering some information about the development process and relating issues encountered by the respondents.

This research could however have anticipated the latter issue by focusing on its objectives and the effect it would have on the research structure. Therefore, next time, a more thorough exploration of the research goals and its effects on the structure will be used.

Subsequently, a major flaw of this study is that respondents were drawn from one pool provided by the University of Twente. Even though the respondents were very valuable, they met requirement standards for participation in a program that served as the pool for this study. For example, one prerequisite was the formulation of a business plan (which

would require the respondent to think about the process relevant to this study). This, as a result, constitutes a major bias.

Moreover, and only after some time at which the conclusions chapter was nearly finished, did I learn about the fact that private companies have recently (or are currently) developed similar models. If known, attempts to use and access their information would have been made which (if successful) would have benefited the practical and theoretical quality substantially. As a result, next time not merely theoretical sources will be sought when trying to develop a model that needs to satisfy some level of practical relevance.

5.4 Recommendations

5.4.1 Practical recommendations

First, when asked if the process model developed by this study could be useful, one respondent stated: *'I would not use it and I think entrepreneurs in general are too stubborn to use it. It's like a manual; I only use it when I can't figure things out'*. However, considering the fact that the encountered issues during and after the design process, as described by the respondents, are apparently quite alike, it would not be such a bad idea to use every bit of information available to prevent the making of known/common mistakes. Especially when considering the severity of the outcome: *successor failure*.

The recommendation for service type D entrepreneurs is therefore to make themselves familiar with studies such as these, even though the majority of the information might be redundant, not useful or not specific enough. The constant awareness of - and reflection on the initial and future design of an organization is very important for its success; something that was stated during several interviews. The use of a study such as this one does not only facilitate awareness but subsequently also provides aid about the design and the prevention of common issues.

The use of this study is subsequently most valuable in terms of its facilitation of awareness and information about a quite (possibly) common design process; not for its specificity or careful stipulation of what the process should look like. Moreover, it may require some time to collect this information, but it could possibly also conserve a lot of time and valuable resources preventing mistakes or finding 'the-way-to-go'.

5.4.2 Recommendations for further research

First, one of the main parts of this research consisted of the exploration of the differences between design processes of organizations with either a domestic or international design orientation. Even though the presented conclusion was to some extent plausible, due to a small number of respondents and a large number of variables it was impossible to provide indisputable evidence. If significant differences caused by a different design orientation do however exist, there is a higher probability that they would be

encountered in one (or more) of the 13 variables provided (differences ≥ 2) in section 4.4 than those showing equal or less than 1 discrepancy (figure 24 and appendix 12).

Secondly, there is a possibility that differences are caused by another variable which will cause additional differentiation of service type D and reduced generalization of the proposed process models. One variable in particular, the use of technological equipment, seemed to cause several differences by itself. However, due to the fact that this was not part of the direct goal of this study, no further consideration was given to this anomaly. The respondents indicating the use of technological equipment mostly offered services of a different nature in which case differences might also be caused by industry background. In any case, considering the fact that differences between and inside groups were encountered, additional study needs to pinpoint the variable(s) with which to differentiate 'Service Type D' further for this particular purpose.

Furthermore, due to the fact that a possibly biased design order was developed by using a particular respondent pool, future research needs to be aimed at checking the results of this particular group against a randomized group of respondents drawn from the entire population. The generalization options are thus far limited to the 'Service type D' entrepreneurs participating in the NIKOS program and need to be checked against results drawn from other 'Service type D' entrepreneurs.

As a result of possible additional differentiation, future research needs to provide a better understanding about the applicability and generalization possibilities of the proposed process models. However, the process models themselves are ready to be tested in terms of their design order (due to minor differences in this part) and can be tested to determine which problems are encountered in the absence of particular design components.

In short, as an expansion of this particular research, some entrepreneurs indicated the desire for a more detailed accumulation and description of known issues at each step of the development process which would ultimately enrich the process developed in this study with an even more practical and in-depth description of the process and its relating issues facilitating both an increased theoretical as well as practical understanding.

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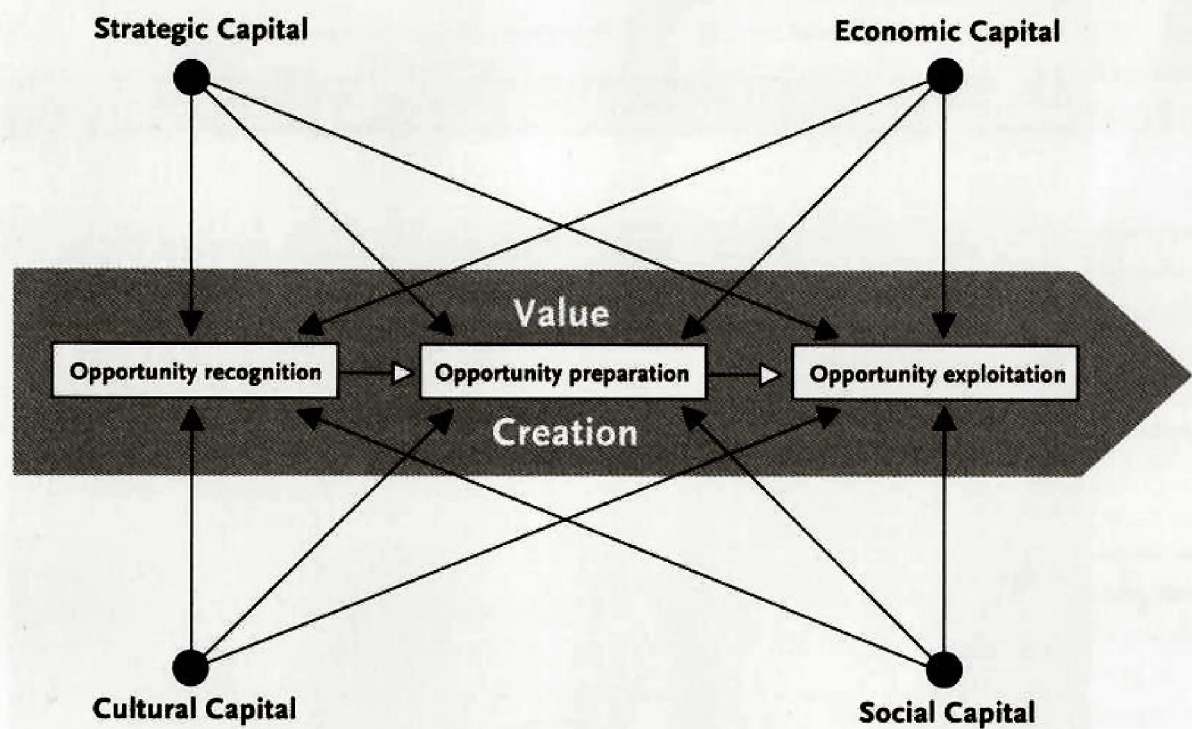
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Appendix 1: Nikos 4S Dimension Model

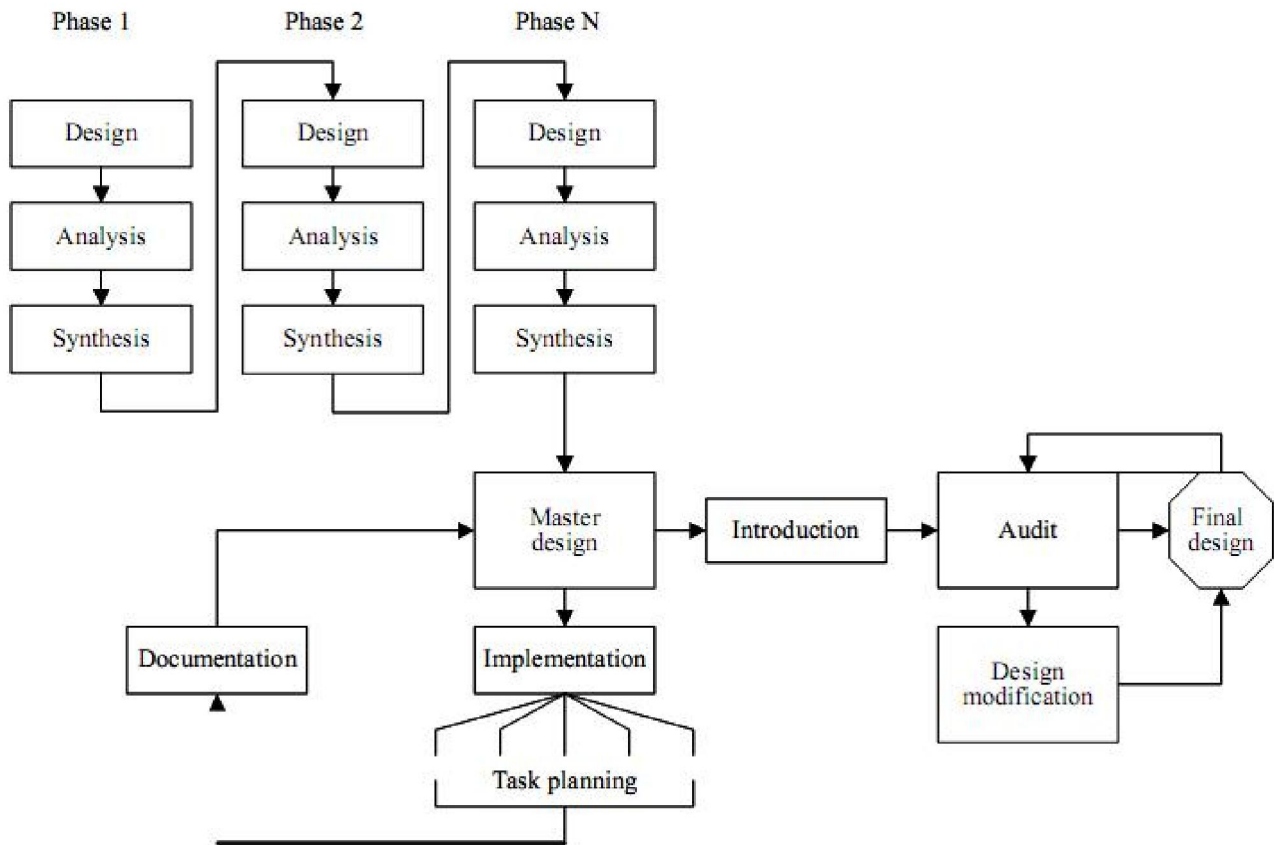
The 4S Model of Entrepreneurship in Networks



4S Dimensions of Entrepreneurial Networking

Dimension	Relates to	Capital	Resources	Some Interventions
Scope	Strategic Goals	Strategic Capital	Power, Authority, Influence, strategic intent	<ul style="list-style-type: none"> Using Power Redefining Strategy
Scale	Economic Optimization	Economic Capital	Money	<ul style="list-style-type: none"> Using Financial incentives Cutting costs
Skill & Value	Institutions and pattern maintenance	Cultural/Human Capital	Values, organization, knowledge, skills, experience, technology	<ul style="list-style-type: none"> Training & Education Team Building Organizational Systems New Technology
Social Network	Interaction patten/process	Social Capital	Contacts (multiplex, filling structural holes, cohesive, equivalent)	<ul style="list-style-type: none"> Relation Management Changing Network Structure Using Brokers Supply chain management

Appendix 2: Prototyping Model



Appendix 3: NSD Process Model elaboration



The initiation of the process model of NSD starts with the initiation of entrepreneurship described in section 2.1.2. The Business idea is still at a stage in which it is not yet physically developed, but merely mentally developed. Subsequently the initial service product development is the stage in which the service product is developed into a product model which is a definition of the service content and a structural plan of the service products (i.e. it describes what the service does; described in section 2.2.1). As described in section 2.4: '*The New Service Development Process Model*', these first three phases will to a large extent determine the market for the business idea. Consequently, the market is identified and approached due to the importance of customer interaction and inclusion at the stage of specifying a channel for reaching the customer and delivering value to them, and refining the initial service product. Section 2.4 also stated the influence of the strategic intent in the design of the service product and specifying the distribution channel (specify service delivery). It was concluded that not only the target market, but also the strategic intent will to a large extent influence the refining of the service product and the choice of distribution channel. Therefore, even though a distribution channel can be formulated before specifying a strategic intent, it is believed that the strategic intent will ultimately affect the choice/design of distribution channel in which case it is concluded after the formulation of the strategic intent. Refining the service product is then concluded when all the elements could affect its design, are accounted for (e.g. the distribution channel might also require the service product to have certain characteristics).



In short, the initial service product stimulates both the specification of a market as well as the formulation of a strategic intent. Subsequently the initial service product, the specified market and the strategic intent will theoretically affect the choice of distribution channel. Those three elements (i.e. specified market, strategic intent and choice of distribution channel) will in turn stipulate needed revisions for the initial service product. The process model therefore, is also not as rigid as it would appear at first glance.

1.		
Business Idea Development influences	1	Scope
	2	Scale
	3	Skill & Value
	4	Social Network

1. Influences on the development of the business idea (pag 62)

2.		
Initial Service product influences	1	Business Idea Development
	2	Strategic Intent

2. Influences on the development of the initial service product (pag 62)

3.		
Market Specification influences	1	Business Idea Development

3. Influences on the market specification (pag 62)

4.		
Strategic Intent Influences	1	Initial Service Product
	2	Specified Market

4. Influences on the formulation of Strategic Intent (pag 62)

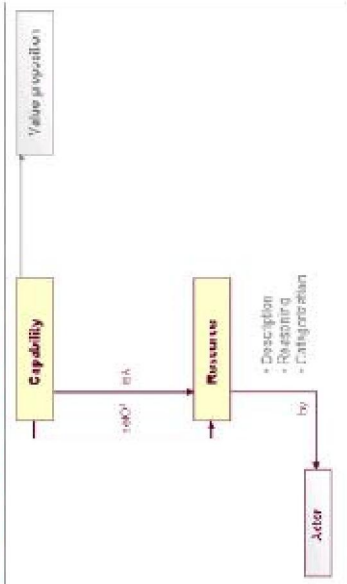
5.		
Service Delivery Specification influences	1	Market
	2	Strategic Intent
	3	Initial Business Idea

5. Influences on the specification of Service Delivery (pag 62)

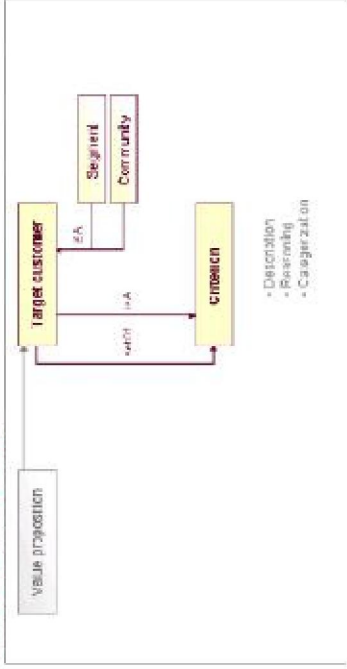
6.		
Initial Service Product Revision Influences	1	Market
	2	Strategic Intent
	3	Service Delivery Choice

6. Influences on the revision of the Initial Service Product (pag 62)

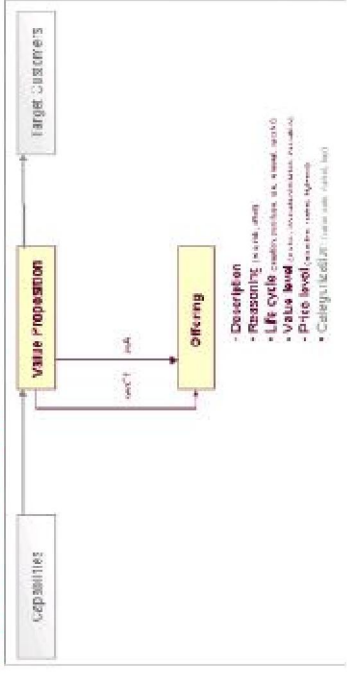
CAPABILITIES & RESOURCES



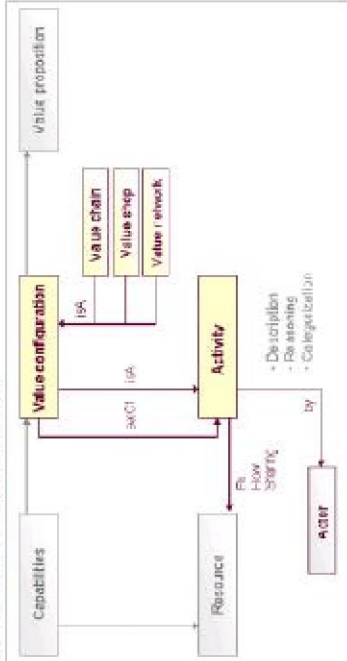
TARGET CUSTOMER



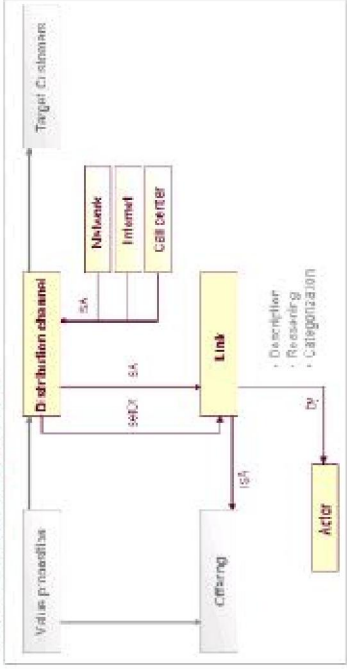
VALUE PROPOSITION



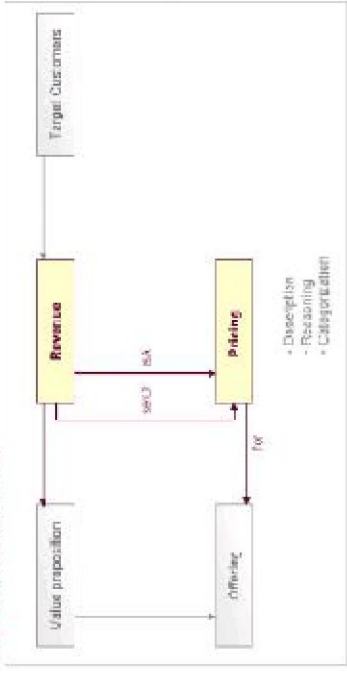
VALUE CONFIGURATION



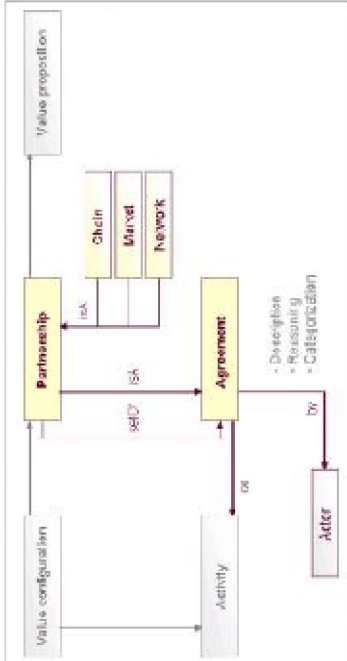
DISTRIBUTION CHANNEL



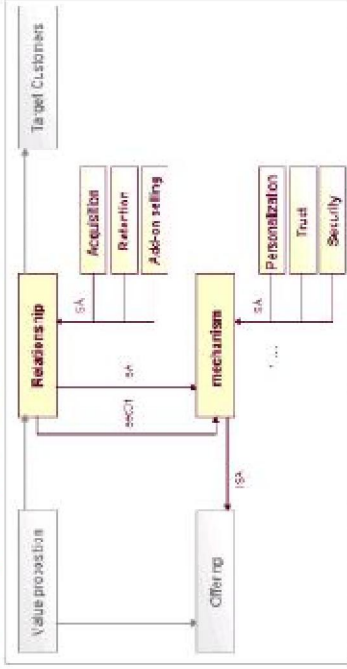
REVENUE MODEL



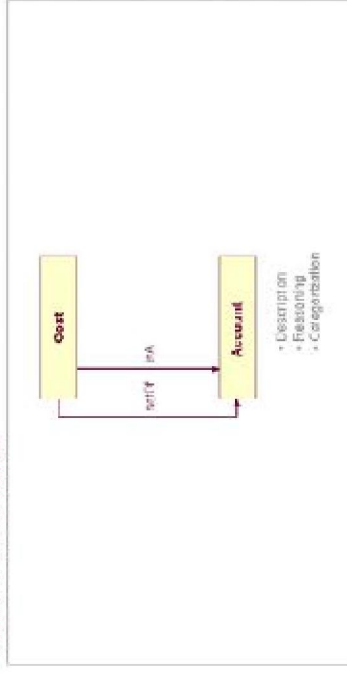
PARTNERSHIP



CUSTOMER RELATIONSHIP



COST STRUCTURE



Figures 2-10: Business Model Components

Appendix 5: Sequence of Development

2
<i>Market segment</i>
2.1 Target customer
2.2 Distribution channel

The second step in the sequence of creating a business model was argued to consist of the 'Target customer' and the 'Distribution Channel'. When looking at the New Service Development literature reviewed in paragraph 2.2, a specific order of these elements is pretty straightforward. Due to the importance and influence of the customer on the product model- and possibly the service delivery as mentioned by Goldstein et al (2002) and de Jong & Vermeulen (2003), one could conclude that the target customer is described before the distribution channels are formulated and/or described. Even more so, according to Goldstein et al. (2002) the strategic intent (should be) aligned with customer needs and desires, which means that the distribution channel could also be (in)directly influenced by the target customer due to the earlier concluded influence of strategic intent on 'What' and 'How'.

3
<i>Value chain position</i>
3.2 Value configuration
3.1 Capability

The third step includes the value configuration and capability constituting the 'How' of an organization. First of all, the value configuration as mentioned by Osterwalder (2004) seems to resemble the formulation of process models and resource concepts used in New Service Development literature by Büllinger et al. (2003). That is, the activities and employed resources that are necessary to create the value for customers should be described in process- models and resource concepts. Whereas the value configuration is concerned with the planning of resources, the capability described by Osterwalder (2004) deals with the ability and competence to repeatedly create value for customers. Admittedly, no such part exists in the NSD theory reviewed in paragraph 2.3. However, the use and outcome of a requirement analysis as used in *Waterfall models* could provide the same variables as those needed to describe the 'capability' of a firm. More plainly said, the outcome of a 'requirement analysis' will contain the variables (such as access to key resources) that determine the capability of a firm to execute a repeatable pattern of actions that provide value for the customer. If this would be the case, the capability would precede the actual configuration of the activities and resources.

4
<i>Cost structure and target Margins</i>
4.1 Cost structures
4.2 Revenue model

Step four includes the cost- and revenue elements of the business model. The NSD literature review already addressed such elements to some extent by describing the fact that process models facilitate the creation of cost simulations (Bullinger, Fähnrich, & Meiren, 2003, p. 4). Obviously, the price of new services would depend their expected costs.

Cost structures therefore probably precede the creation of revenue models, as revenue models will expectedly be created after the costs have been estimated and a price has been determined. On the other hand, revenue models also dictate the manner in which revenue is created which includes pricing mechanisms (Osterwalder, 2004, p. 95). Considering the fact that revenues need to surmount costs, this study will assume the cost structures will to some extent also dictate the type of revenue model.

5
<i>Value Network</i>
5.2 Relationship
5.1 Partnership

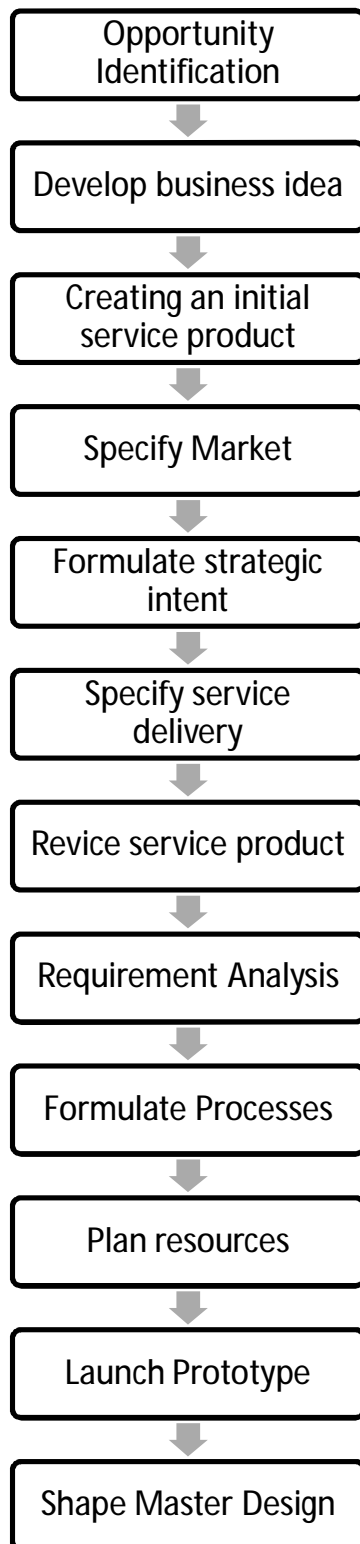
The final step consists of what Chesbrough (2003) calls the value network. It is the network of customers and suppliers that facilitates both the creation of value and the opportunity to sell it. Osterwalder (2004) describes two variables that resemble the value network described by Chesbrough (2003), the type of relationship the organization wishes to establish with its customers and the partnership with other companies to facilitate the creation of value.

When comparing these elements to the content of the NSD literature review, the customer-relationship seems abundantly present. The partnership element on the other hand, is not so much encountered. Throughout the NSD literature review, the focus on customer interaction and/or synchronizing the needs of customers with the organization is very noticeable. Although it is hard to determine and prescribe what the customer relationship should look like (a study in its own rights), it is however apparent that customer interaction and hence, a particular relationship with the customer, is very important, even at the design stage of the service. It is hard to determine whether or not such a value network is meant by Chesbrough (2003) or such a customer relationship is implied by Osterwalder (2004) because of the numerous possible interactions that both partners and customers can have in both the design of services (paragraph 2.3) and the actual delivery and repeated business of customers. The fact remains however, that the New Service Development for this particular service type, dictates an early and strong relationship with the customer. It is therefore also hard to imagine that the relationship element would not be used or described up until the point of actually offering and delivering the service to the customers. However, due to the lack of information concerning the order of creation of these elements, it seems only right to start and stick with the single piece of information that does provide a subsequent order. When trying to defend this position, some arguments do arise. For example, there could be other reasons to describe the 'network of customer relationships and business partnerships' at a later stage. An actual network of customers and business partners may prove to be unnecessary at the design stage. Collected information of single and unconnected customers may also provide the necessary information to provide the design stage with sufficient information and feedback. The actual network that is created afterwards would hence only facilitate the creation of extra value. Business partnerships could for example provide a steady and reliable inflow of resources needed to create the

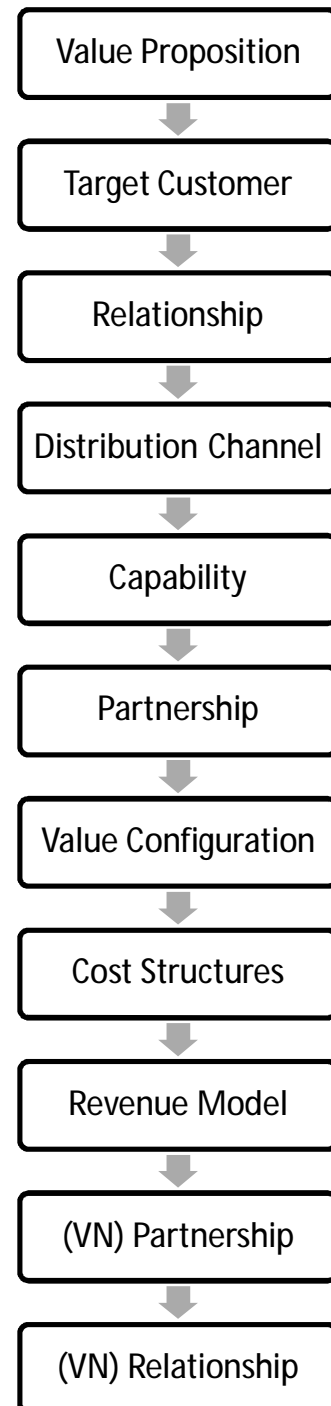
value that is sold to the customer. The 'network of customer relationships' would more or less be a marketing element, providing an extra dimension to sales possibilities. In such a case, the partnership element would precede the relationship element due to the fact that a customer relationship would be used to facilitate sales, and business partnerships would be created as a part of the design of the value proposition. Even though this may be closer to the value network that Chesbrough (2003) described, this is however not the way Osterwalder (2004) envisioned the 'relationship' element. Osterwalder (2004) clearly states that the relationship element entails the type of relationship the firm wishes to establish with its customers (acquisition, retention, add-on sales). For now, it is assumed that the 'relationship' element of Osterwalder (2004) should hence not be a part of the 'Value Network' that Chesbrough (2003) described, but should remain a part of the *'Market Segment'* or *'Whom'*, as Osterwalder (2004) originally intended. In doing so however, a part of the *'Value Network'* that Chesbrough (2003) described is lost (the participation of customers in the value network). Hence, the Relationship element is included in both the *'Market Segment'* (Whom) (to underline the importance of customer relationships and inclusion at the design stage) and the 'Value Network', both with the function and meaning described by their respective authors.

To conclude this section, the *'Relationship'* element as mentioned and intended by Osterwalder (2004) needs to be included in the 'Market Segment' part. Due to the nature of the services this study focuses on, the customer relationship is already partly predetermined. As customer inclusion is apparently vital to firms delivering such services, the relationship needs to be early and close. Hence, the relationship will probably be established after the customer segment has been pinpointed.

Appendix 6: Process Models



The New Service Development process model



The Business Model Development process model

Appendix 7: Interview Guide

‘Interview Guide’

Interview Opening:

- Outlining the nature and purpose of the interview to the respondent
- Collecting factual information (easy questions) first, for the benefit of smooth Interviews.
- Information about possible general categorizing variables

Easy descriptive* outlining and categorizing questions*Explanation of study**

*Clarification, purpose and content of interview
(anonymity and confidentiality)*

Name of entrepreneur and company <i>Clustering purposes</i>	
Time/date of initiation (idea) of the company <i>To identify the time span of the entire process</i>	
How much time before a service was marketed <i>To identify the time span of the entire process</i>	
Number of employees <i>General variables for categorization</i>	
Type of service <i>General variables for categorization</i>	
Market span (regional, national, international) <i>General variables for categorization</i>	

Information that must be obtained by questions in this section:

- Which elements played a major role in the concretization of the service idea?
 - Is a potential market already conceived in this phase?
 - Is a market conceived before or after the business idea is conceived?
-
- **How did the business idea initially progress? (mental development)?**
-
-
- **Which elements played an important role in the development of the initial business idea (until actual 'physical' development)**
 - o *Market?*

Service- and Business Development (Outcome dimension Phase)

Information that must be obtained by questions in this section:

1. When was the business idea (service product/value proposition) concretized?
 - Which elements were important in the concretization of the business idea?
 - In what terms was the service product concretized (what does the value proposition look like)?

2. When was a target market formulated?
 - Which elements were important in determining the target market?
 - When was a specific and deliberate relationship established/formulated?

3. When was a strategic intent formulated?
 - Which elements were important in determining the strategic intent?
 - When was a specific and deliberate 'strategic intent' formulated?

4. When was the service delivery formulated?
 - Which elements were important in determining the 'service delivery'?
 - When was a specific and deliberate 'distribution channel' formulated?

5. (When) Was a requirements analysis made?
 - Why a requirement analysis?

6. (When) Were partnerships formulated?
 - Which elements were important in determining partnerships

What was done after the business idea was determined (1,2,3,4,5,6)?

Service and Business Development Phase (Process- and structure dimension)

Information that must be obtained by questions in this section:

1. (When) Were process models formulated?
 - Why were(n't) they formulated?
2. (When) Were resource concepts formulated?
 - Why were(n't) they formulated?
3. When/how was the value configuration determined?
 - Was the value configuration formalized?
4. When/how was the price of the service determined?
 - (When) Were cost structures formulated?
 - (When) Were revenue models formulated?
5. What 'actions' were undertaken after the service was 'launched'?
 - Was a prototype service launched?
 - § Why was it considered a prototype?
 - Was a master design initiated?
 - § Which elements were part of the master design?
 - Were service revisions initiated?
 - § Which elements were important for the initiation/content of the revisions?
 - Were 'market relationships' created?
 - § Are these relationships formalized?

What was done after (The end of the last subject – 1,2,3,4?)

(In retrospect) What kind of problems were encountered during or after the development process and how are/were they dealt with?

Appendix 8: Data analysis; List of Codes

Adj.	Topic	Phase	Code
		Entrepreneurial Phase	
EP:	Opportunity identification	..	EP-OID 2.2.3
EP:	Solution Concept Time	..	EP-SOC 2.2.3
EP:	Solution Concept Relations	..	EP-IDD 2.2.3
EP:	Envisioning Market Time	..	EP-EVM 2.2.3
EP:	Design Elements	..	EP-DE 2.2.3
EP:	Design Element interrelation	..	EP-DEI 2.2.3
		Outcome dimension	
OD:	Product Model Time	..	OD -PMT 2.2.3
OD :	Product Model Content	..	OD -PMC 2.2.1/2.2.3
OD :	Product Model Relations	..	OD -PMR 2.2.1/2.2.3
OD :	Market Determination Time	..	OD -MDT 2.2.3
OD :	Market Determination Relations	..	OD -MDR 2.2.1/2.2.3
OD :	Customer Relationship Time	..	OD -CRT 2.3.4/2.4
OD :	Customer Relationship Relations	..	OD -CRR 2.4
OD :	Service Delivery Time	..	OD -SDT 2.2.3/2.4
OD :	Service Delivery Relations	..	OD -SDR 2.2.1/2.2.3
OD :	Strategic Intent Time	..	OD -SIT 2.2.3
OD :	Strategic Intent Relations	..	OD -SIR 2.2.1/2.2.3
OD :	Requirement Analysis Action	..	OD -RAA
OD :	Requirement Analysis Time	..	OD -RAT 2.2.3/2.4
OD :	Requirement Analysis Motivation	..	OD -RAM 2.2.3/2.4
OD :	Partnership Determination Time	..	OD -PDT 2.3.4/2.4
OD :	Partnership Determination Relations	..	OD -PDR 2.3.2/2.3.3
		'Process- and structure dimension	
PSD:	Process-Model formulation Action	..	PSD -PMFA
PSD :	Process-Model formulation Time	..	PSD -PMFT 2.2.3/2.4
PSD :	Process-Model formulation Motivation	..	PSD -PMFM 2.2.3/2.4
PSD :	Resource Concept formulation Action	..	PSD -RCFA
PSD :	Resource Concept formulation Time	..	PSD -RCFT 2.2.3/2.4
PSD :	Resource Concept formulation Motivation	..	PSD -RCFM 2.2.3/2.4
PSD :	Service-cost Calculation Action	..	PSD -SCCA
PSD :	Service-cost Calculation Time	..	PSD -SCCT 2.2.3/2.4
PSD :	Revenue Model Determination Time	..	PSD -RMDT 2.3.4/2.4
PSD :	Prototype Launch Action	..	PSD -PLA
PSD :	Prototype Launch Time	..	PSD -PLT 2.2.3
PSD :	Prototype Launch Motivation	..	PSD -PLM 2.2.3
PSD :	Service Revision Action	..	PSD -SRA
PSD :	Service Revision Time	..	PSD -SRT 2.2.3
PSD :	Service Revision Relation/Motivation	..	PSD -SRR/M 2.2.3
PSD :	Master Design Action	..	PSD -MDA
PSD :	'Market Relationships' formulation Action	..	PSD -MRFA
PSD :	'Market Relationships' formulation Motivation	..	PSD -MRFM 2.2.3

Appendix 9: Order of elements in the design process; a summary.

This matrix depicts an accumulation of the order of conceptual design elements. The numbers in this particular case, depict the order in which respondents indicated this element to be 'designed'. The design elements are ordered in a fashion, although quite arbitrary, that is most suited and representative for a general overview of the design process as a whole.

Create Service Product/Value proposition	1	1	1	1	1	1	1	1
Specify Market/Target customer	2	2	2	2	2	2	2	3
Formulate strategic Intent/Customer relationship	2	3	3	3	4	-	-	-
Requirement Analysis/Capability/Partnerships	3	3	3	4	4	4	4	-
Specify Service Delivery/Distribution Channel	4	4	4	5	5	5	5	
Launch Prototype	3	5	5	6	6	6	6	7
Pricing (as part of Plan Resources)	4	5	6	6	6	7	7	7
Master Design <i>Strategic intent/Customer Relationship</i>	8	8	8	-	-	-	-	-
Master Design <i>Market/Target Customer</i>	(3)	7	9	9	-	-	-	-
Revise Service product/Value proposition	5	7	7	10	10	11	-	-
Master design <i>Product model/Value proposition</i>	(1)	(1)	(10)	(10)				
Master Design <i>Service Delivery/Distribution Channel</i>	(5)	9	11	11	-	-	-	-
Formulate Process Models	6	8	8	10	12	-	-	-
Range start:	1			()	Indicating (near) simultaneous design			
Range end:	12			-	Absent			

Appendix 10: Positive and negative design results and influences.

External	Branding	New service firms have not been able to build up a sufficient brand to compete with established players
	Age / credibility	Customers are hesitant to consume services offered by young entrepreneurs. Youth radiates inexperience.
	Customer risk	Without a business partner, the risks for customers that grant substantial and time-consuming projects to single entrepreneurs increase substantially.
	Customer acquisition	All respondents claimed to have (at some point) a hard time finding ways to consistently acquire new demand
	Sustaining growth	As a result to the issues of customer acquisition, respondents also claimed to (at some point) have a hard time facilitating growth.
Internal	Pricing	Most respondents claimed to have had a hard time determining the price of their services. Low pricing may be perceived as cheap by the customer creating the illusion of inherent low quality cheap products are usually associated with. High prices on the other hand may scare off potential customers. In short, pricing needs to be just right.
	Lack of focus	A lack of focus, that is be stimulated by problems with customer acquisition, leads to an ongoing development process in which no real decisions are made which means product models, strategic intentions and other design elements are not streamlined.
	Legal liability	The need for the formulation of general terms and conditions and contracts has in many cases been an unexpected activity. Due to sudden confrontations with- and a general lack of knowledge about elements concerning legal liability, they are perceived as troublesome.
	Multi-disciplined tasks	Entrepreneurs are faced with activities related to more than just selling their services (administration, legal liability and ramifications, goal-setting and strategy etc.). Some respondents indicated the difficulty of striking a balance between operational activities and activities concerned with control and planning.
	Multi-disciplined skills	After some time, due to the gigantic amount of activities related to more than just selling a service, entrepreneurs are faced with both their strengths and weaknesses related to their professional setting. In short, they're confronted with inabilities and lack of skill in certain disciplines of running their business.
	Managing deadlines	Some respondents indicated to have some trouble in setting and attaining deadlines, especially for larger projects.
	Managing workflows	In parallel to the managing of deadlines, the management of workflows, especially for larger projects becomes increasingly complex and was therefore indicated by some respondents to produce severely difficulties.

Appendix 11: Issues, solutions and related design component

Issue	'Solution'	Design Component(s)
Branding Age/Credibility	Branding and age/credibility are in fact much alike in terms of the way respondents dealt with them. Both issues were dealt with by attracting third parties that could vouch for their quality. Even more so, the expertise of these third parties was subsequently viewed as an integral part of the respondent's organization.	When these potential issues are perceived to be threat, the requirement analysis and integral strength and weakness analysis must account for this, resulting in the formulation of partnerships.
Customer Risk	No apparent way to deal with this issue was presented by respondents. It is however to a limited extent similar to the issue of branding and credibility. Instead of a vouch for expertise, the respondent needs to vouch for the ability to consistently deliver labour (and quality) for a certain period. However difficult it is to deal with this while remaining autonomous, partnerships could be initiated with 'competitors'.	The requirement analysis and integral strength and weakness analysis must account for this if this issue is perceived to be a potential threat, resulting in the formulation of partnerships.
Customer Acquisition	Instead of keeping an unfocused product model to keep the potential customer pool larger, formulating a focus with a concurrent manifestation of the business actually resulted in increased customer acquisition.	Focus product model, strategic intent, market and service delivery.
Sustaining growth	The sustainment of growth was attained by realizing increased customer acquisition. In short, sustaining growth in this phase of entrepreneurship comes down to selecting the right time to increase focus.	Focus product model, strategic intent, market and service delivery.

Issue	'Solution'	Design Component(s)
Pricing	No real 'solution' can be offered for pricing. Pricing was in many cases eventually determined by market prices, desired hourly wages increased by structural and incidental cost.	Revenue model and cost structures.
Lack of focus	No real 'solution' can be offered for creating a focus. Focus was in many cases initiated and meant to concentrate on doing what the respondent wants to do and for the benefit of professionalization and specialization.	Focus product model, strategic intent, market and service delivery.
Legal liability	A solution lays in the awareness of this issue. Problems can be prevented by taking it into account at the design stage.	General terms and conditions and contracts belong to a certain product model and a certain market. Therefore, this element can be accounted for around the requirement analysis in the design stage.

Multi-disciplined tasks	Again, no real 'solution' was presented. Some respondents coped with these issues by playing to their strengths (dividing work) and working together on more important influential matters. Respondents without a partner sometimes outsourced certain tasks or hired specialists.	In case work is divided, resources are planned and processes can be formulated. Partnerships are formulated when outsourcing is used.
Multi-disciplined skills	Some entrepreneurs dealt with this issue by dividing work, outsourcing certain activities or hiring specialists.	In case work is divided or specialists are hired, resources are planned and processes can be formulated. Partnerships are formulated when outsourcing is used.
Managing deadlines	Managing deadlines and workflows are very much alike in terms of the way respondents dealt with them. In short, templates were created of specific activities that could be a part of multiple services. In short, all services are sliced into tiny manageable pieces and time and costs can subsequently be estimated or determined.	Planning resources and formulating process models.
Managing workflows		

Appendix 12: Design orientation differences; detailed design

Design orientation		IO	IO	IO	IO	(1)	DO	DO	DO	DO	(2)	(1)- (2)
<i>Respondent number</i>												
Business Partner		1	1	0	0	2	1	1	0	0	2	0
Development Time	< .5 yr	0	0	0	1	1	0	1	1	1	3	-2
	< 1 yr	0	0	0	0	0	0	0	0	0	0	0
	< 1.5 yr	1	1	1	0	3	1	0	0	0	1	2
	>= 2 yr.	0	0	1	0	1	0	0	0	0	0	1
Technological equipment		1	1	1	0	3	1	0	0	0	1	2
Product Model influences												
Before	Knowledge & Int.	1	1	1	1	4	1	1	1	1	4	0
	Technological equipment	1	1	1	0	3	0	0	0	0	0	3
	Strategic Intent	0	1	1	0	2	0	1	0	0	1	1
After	Market Experience	0	0	1	1	2	1	1	1	1	4	-2
	Strategic Intent	0	0	1	0	1	1	1	0	0	2	-1
Product model focused		1	1	0	0	2	1	1	0	0	2	0
Market determination influences												
Before	Product Model	1	1	1	1	4	1	1	1	1	4	0
	Strategic Intent	0	1	0	0	1	0	0	0	0	0	1
After	Market experience	0	0	0	0	0	1	1	0	0	2	-2
	Strategic intent revision	0	0	0	0	0	1	1	0	0	2	-1
Market focused		1	1	0	0	2	1	1	0	0	2	0
Strategic Intent influences												
Before	Product Model	1	1	1	0	3	1	1	0	0	2	1
	Competitive landscape	1	1	1	0	3	0	1	0	0	1	2
After	Market experience	0	0	1	0	1	1	1	0	0	2	-1
Service delivery influences												
Before	Product Model	0	1	1	0	2	1	1	1	1	4	-2
After	Strategic Intent revision	0	0	1	0	1	1	1	0	0	2	-1
Service delivery focused		0	1	1	0	2	1	1	0	0	2	0